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DOES MINDFULNESS MEDIATE THE RELATIONSHIP BETWEEN PARENTAL
DEPRESSION AND NEGATIVE PARENTING BEHAVIORS?

A Dissertation Presented

by

Erin B. Roland

to

The Faculty of the Graduate College

of

The University of Vermont

In Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy
Specializing in Clinical Psychology

October, 2009

Accepted by the Faculty of the Graduate College, The University of Vermont, in partial fulfillment of the requirements for the degree of Doctor of Philosophy specializing in Clinical Psychology.

Dissertation Examination Committee:



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Advisor



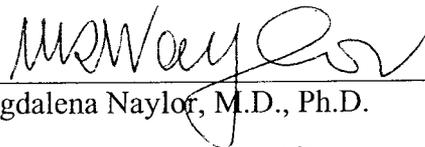
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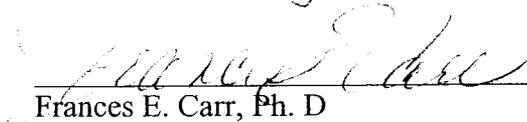


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Abstract

Parental depression can interfere with numerous aspects of parents' lives, including parenting behaviors. Previous research has explored the relationship between past parental depression or current depressive symptoms and negative parenting behaviors. The current study investigates two models of mediation to explain the relationship between parental depression and parenting. In the first, it explores whether mindfulness mediates the relationship between past depression severity and three parenting behaviors: withdrawn/disengaged parenting, low levels of positive parenting and poor monitoring/supervision. In the second, it explores whether mindfulness mediates the relationship between current depressive symptoms and four parenting behaviors: withdrawn/disengaged parenting, low levels of positive parenting, poor monitoring/supervision and inconsistent discipline. The sample draws from two research sites, one in Burlington, Vermont and the other in Nashville, Tennessee and included previously or currently depressed parents ($n=121$; mean age = 42.5 years, $SD = 7.40$ years, range = 24-69), and their 9-15 year old children ($n=167$; mean age = 11.40 years, $SD = 2.30$ years, range = 9-15). All participating parents and children completed written measures at the time of their initial assessment. The overall findings of this study indicate that parents' current depressive symptoms, but not past depression severity, increase the risk of low levels of positive parenting and parenting with greater inconsistent discipline, and that these associations are mediated by a parent's level of mindfulness.

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Introduction

Mindfulness practices, as traditionally followed by Theravada Buddhists, have infiltrated several Western psychological interventions aimed at reducing chronic stress (Kabat-Zinn, 1982), suicidality (Linehan, Armstrong, Suarez, Allmon, & Heard, 1991), anxiety (Kabat-Zinn et al., 1992), negative parenting (Dumas, 2005; Rocheleau, 2002) and depressive relapse (Ma & Teasdale, 2004; Segal, Williams, & Teasdale, 2002; Teasdale, Pope, Moore, Hayhurst, & Williams, 2000). More specifically, treatment interventions, such as Mindfulness-Based Cognitive Therapy (MBCT) for depressive relapse prevention, yield promising results for effectively preventing depressive recurrence in individuals with histories of three or more depressive episodes (Ma & Teasdale, 2004; Teasdale et al., 2000). Initial clinical successes, however, precede basic understandings of mindfulness. The field seeks reliable and valid measures of mindfulness as well as how it relates to well-studied variables in psychological science. Opportunities are ripe for contributing to the growing scientific literature on this topic. This study examines mindfulness as a mechanism underlying the relationship between several variables that have been demonstrated to be important for the mental health of children: current parental depressive symptoms, past parental depression severity, and negative parenting (Lovejoy, Graczyk, O'Hare, & Neuman, 2000; see Figure 1, p. 2). Because maternal and paternal depression are associated with child psychopathology (Anderson & Hammen, 1993; Cummings & Davies, 1994; Downey & Coyne, 1990; Goodman & Gotlib, 1999; Hammen & Brennan, 2001; Kane & Garber, 2004; Phares & Compas, 1992) and parenting is an important factor in the parental depression-child

psychopathology link (Lovejoy et al., 2000), the findings of this study contribute to the understanding of parenting in the context of depression.

The literature reviewed in this paper is divided into six sections. Section I defines depressive symptoms as well as major depressive disorders, including the risk for depressive relapse/recurrence, given that depression is considered a chronic illness (Judd, 1997). Section II reviews the link between maternal and paternal depression and negative parenting in order to demonstrate the detrimental effects of depression on parenting (see path A in Figure 1). Section III provides a brief historical context of mindfulness. Section IV discusses the construct of mindfulness and develops the case that attention and awareness are critical aspects of mindfulness. In Section V, evidence is presented supporting the link between depression and mindfulness (see path B in Figure 1). Last, Section VI reviews the literature describing the link between mindfulness and negative parenting (see path C in Figure 1). Based on the evidence reviewed in the six proceeding sections, the research questions and hypotheses focusing on the association of maternal and paternal depression and negative parenting with mindfulness as a mediator are proposed.

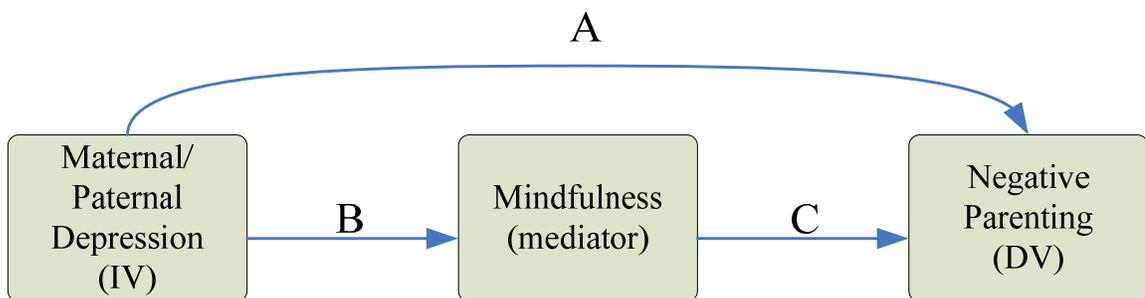


Figure 1: Mindfulness mediation model

I. Parental Depression

Major Depressive Disorder and Dysthymic Disorder

In the empirical literature on depression, definitions of depression range from a diagnosis of depressive disorder to less severe symptoms labeled as depressive symptoms or depressed mood (Compas, Ey, & Grant, 1993). In terms of operationalizing a Major Depressive Disorder, the Diagnostic and Statistical Manual of Mental Disorders- Fourth Edition (DSM-IV) is the most extensively used diagnostic system worldwide for diagnosing disorders (Compas et al., 1993). The DSM-IV reviews the presence, length and severity of symptoms to determine a diagnosis. It reflects an inductive approach and draws from the clinical literature of symptomatology, rather than the empirical literature, to determine the clustering of symptoms (Compas et al., 1993).

According to this categorical, diagnostic approach to defining depression, the critical feature that marks a Major Depressive Episode (MDE) is a time of at least two weeks or more in which there is either a sad, down or depressed mood or the loss of pleasure and interest in almost all daily activities. In addition, at least four of the following seven symptoms must accompany a depressed mood or loss of pleasure in daily activities within the same two week time period: 1) increased appetite or weight gain or conversely, decreased appetite and weight loss; 2) sleep disturbances, such as insomnia or hypersomnia; 3) increased physical agitation or retardation; 4) fatigue or diminished energy; 5) feelings of worthlessness or inappropriate guilt; 6) difficulty thinking, concentrating (inattention) and/or memory impairment; and 7) preoccupations with death, suicidal ideation or suicide attempts. These symptoms must cause significant

clinical impairment or distress in relationships with others, household and work-related responsibilities as well as other important areas of functioning. Depressive symptoms may not be due to a general medical condition or an abuse of drugs or alcohol. Finally, these symptoms must not be better accounted for by bereavement (DSM-IV, 2000).

If an individual experiences one or more MDEs over the course of one year, several years or their lifetime, this is characterized as a Major Depressive Disorder (MDD). When the full criteria for MDE have been absent for at least two consecutive months, the depressive episode is considered to have ended (DSM-IV, 2000).

Unfortunately, the presence of a depressive episode increases the likelihood of developing future episodes. Research indicates that at least 50% of the people who recover from an MDE experience a subsequent depressive episode and those with a history of two or more depressive episodes will have a 70-80% chance of recurrence (Segal et al., 2002). Individuals who suffer three or more lifetime episodes of depression have a 40% chance of relapsing within a brief period of time (i.e., four months) after recovering from a depressive episode (Kupfer, Frank, & Wamhoff, 1996). The number of depressive episodes most reliably predicts who will relapse (Segal et al., 2002). In addition to frequency, the severity of the initial MDE is also hypothesized to predict persistence of future episodes (DSM-IV, 2000).

Mental health professionals conceptualize MDD as a chronic, rather than acute, illness (Judd, 1997). Data support this conceptualization, with depression having subthreshold symptoms that manifest over time (Judd et al., 2000). More specifically,

almost half of previously depressed individuals continue to experience symptoms that are severe enough to meet criteria for an MDE (DSM-IV, 2000).

Of longer duration than an MDE, Dysthymic Disorder is characterized by a depressed mood that occurs for most of the day, more days than not, for at least two years. During this extended period of sad mood, individuals must have at least two of the following additional symptoms: decreased appetite or overeating; insomnia or hypersomnia; fatigue or low energy; diminished self-esteem; indecision or poor concentration; and feelings of hopelessness. During the course of the two year period, the person's symptoms may not have remitted or be better accounted for by an MDE. Persons may not have experienced a manic episode, nor may their symptoms occur exclusively during a chronic psychotic disorder. The symptoms must not be due to a general medical condition, alcohol or substance abuse, and must cause clinically significant impairment in work, school or relationships with others. Dysthymic Disorder is particularly pernicious because it is a risk factor for developing an MDE (Judd, 1997).

Depressed mood/depressive symptoms

In contrast to a DSM-IV diagnosis of depression that is derived from a diagnostic, structured clinical interview for either clinical or research purposes, many research studies have used self-report questionnaires that focus on depressed mood. Self-report measures often include lists of symptoms that are believed to capture the core elements of depressive disorders. Respondents use Likert scales to indicate the degree to which a symptom applies to them or choose a response from a series of possible responses that best reflects the severity of their symptom. Such an assessment approach, however, does

not capture other elements of a depressive disorder such as functional impairment (Compas et al., 1993). Furthermore, items on these depression scales are not necessarily specific to depressed affect because they reflect other symptoms and emotions besides depressed mood. Research on adults indicates, however, that depressed mood is distinguishable from anxiety and other forms of negative affect despite the fact that depressed mood is correlated with negative emotions (Compas et al., 1993). Although depressed mood, as assessed with self-report measures, appears to be a component of negative affectivity, broadly, it also provides clinical utility and significance. More specifically, research indicates that depressive symptoms are associated with functional impairment and pose a risk for, or precursor to, a major depressive episode (Harvath, Johnson, Klerman, & Weissman, 1992; Lewinson, Hoberman, & Rosenbaum, 1988).

In conclusion, research on depression primarily has used self-report measures to assess the level of depressive symptomatology and clinical diagnostic interviews to determine a diagnosis of depression. Given the recurrent and episodic nature of depression, parents with a history of depression will likely exhibit poor functioning, including impaired parenting (Belsher & Costello, 1998; Zis & Goodwin, 1979), even though they may not meet diagnostic criteria for a Major Depressive Episode. Measuring parents' current level of depressive symptomatology provides an important indicator of distress, although this distress may not necessarily be specific to depression. In this study, depressive symptoms and a diagnosis of depression are not used interchangeably as the former refers to the use of a self-report measure of depressive symptomatology and the latter a DSM-IV derived diagnosis of a previous depressive episode. The following

section discusses the literature on the association between parental depression (both history of depression and current depressive symptoms) and negative parenting.

II. The Link between Parental Depression and Negative Parenting

Although self-report measures of depressive symptoms and a clinical diagnosis of a Major Depressive Episode should be differentiated for the purposes of definitional clarity, both methods of assessment are frequently used for measuring depression in parenting studies (Lovejoy et al., 2000). The level of depressive symptomatology can provide an important indicator of a parent's risk for negative parenting as parents often experience emotional disturbances, cognitive vulnerabilities and impairment in functioning before and after the acute phase of a major depressive disorder (Hedlund & Rude, 1995; Lovejoy et al., 2000). Furthermore, negative parenting behavior continues after remission of the depressive disorder (Hammen & Brennan, 2002; Langrock, Compas, Keller, & Merchant, 2002; Lovejoy et al., 2000), indicating that parenting difficulties persist even when previously depressed parents are not in a major depressive episode (Lovejoy et al., 2000; Seifer, Dickstein, Sameroff, Magee, & Hayden, 2001).

Depressive symptoms during stages of remission appear to be a good predictor of quality of parenting (Lovejoy et al., 2000). In particular, depressive symptoms may impede a parent's ability to attend to and interact with his or her children in ways that are vital for their social and cognitive development. Poor concentration, indecision, and memory deficits that may result in part from information-processing biases in attention (Gotlib, Kasch, Traill, Joorman, Arnow, & Johnson, 2004; Gotlib & Krasnoperova, 1998) are hallmark symptoms of depression. Caregiver attention is a vital factor in children's

cognitive development and an important resource for adult learning and daily functioning. Changes in parental attention that arise from depression or depressive symptoms may adversely affect parenting. The third section of this study describes the construct of mindfulness and further delineates how attention and awareness are essential components of mindfulness and that the lack of these cognitive qualities may mediate the link between parental depressive symptoms and negative parenting.

Although men clearly suffer from psychopathology, including depression (Kane & Garber, 2004), and investigators emphasize the need for greater inclusion of fathers in research (Phares & Compas, 1992; Phares, Fields, Kamboukos, & Lopez, 2005), the majority of studies on parental depression and child outcomes, as well as on parental depression and parenting, has focused on maternal depression (Cummings & Davies, 1994; Lovejoy et al., 2000). The following discussion on depression and parenting behaviors primarily highlights research on mothers; however, it is important to note the association of paternal depression with parenting as well.

The literature on maternal depression and parenting behaviors demonstrates a relationship between both maternal clinical depression and current depressive symptoms and poor parenting practices (Hill & Herman-Stahl, 2002). Compared with nondepressed mothers, depressed mothers are more withdrawn, inattentive and unresponsive in their parenting (Cummings & Cicchetti, 1990; Downey & Coyne, 1990; Gelfand & Teti, 1990) and have lower levels of positive parenting (Lovejoy et al., 2000). Parental depression also has been associated with difficulties in a mother's ability to effectively monitor her children's behaviors (Chilcoat, Breslau, & Anthony, 1996) and use consistent discipline

(Cummings & Davies, 1994; Hill & Herman-Stahl, 2002). Similar to clinical depression, depressive symptoms have been found to disrupt good parenting practices (e.g., Field, Healy, Goldstein, & Guthertz, 1990; Griest, Wells, & Forehand, 1979). The following sections explore in further detail four parenting behaviors, each of which can be characterized as a component of negative parenting, that are associated with parental depression and depressive symptoms: 1) withdrawn/disengaged parenting; 2) low levels of positive parenting; 3) poor monitoring/supervision; and 4) inconsistent discipline.

Evidence for withdrawn/disengaged parenting

Studies of families with a depressed mother demonstrate that these mothers are less engaged, more withdrawn and less sensitive to child behavior (Cox, Puckering, Pound, & Mills, 1987; Goodman & Brumley, 1990; Lovejoy et al., 2000). In an attempt to systematically examine the strength of the relationship between maternal depression and withdrawn/disengaged parenting behavior, Lovejoy and colleagues (2000) conducted a meta-analysis with 46 observational studies of parent-child interactions. Depression was measured with self-report questionnaires (such as the BDI) or with clinical interviews. Results revealed that mothers with either current or lifetime depression had significantly higher levels of withdrawn/disengaged parenting behaviors than did non-depressed mothers. The effect size for these behaviors was moderate in magnitude (mean $d = .29$).

Findings from the infant literature are congruent with Lovejoy and colleagues' (2000) findings: currently depressed mothers spend more time disengaging from their infants than non-depressed mothers in observed mother-infant interactions. Field and

colleagues (1990) used the BDI to assess maternal depressive symptoms and coded the extent to which mothers showed disengaged parenting behaviors. In these mother-infant interactions, 29% of the depressed mothers' behaviors were labeled as "disengaged" compared to 2% of the non-depressed mothers' behaviors. In another observational study involving mother-child interactions, Goodman and Brumley (1990) examined the quality of parenting behaviors of currently depressed, schizophrenic, and well mothers. Observed interactions between mothers and their 3-5 year old children revealed that depressed mothers were not as involved or as responsive as well mothers (Goodman & Brumley, 1990). In addition, Cox and colleagues (1987) compared currently depressed mothers and their two year-old children with non-depressed mothers. Home observations of mother-child interactions demonstrated that depressed mothers were more disengaged from their children during a joint interaction task than non-depressed mothers. Furthermore, depressed mothers were less responsive to their child's cues than non-depressed mothers.

In a more recent study that examined parenting behaviors in depressed and non-depressed mothers, Jaser (2005) studied a sample of mothers with a history of depression and mothers without a history of depression and their adolescent age children (ages 10-14). In an observational interaction involving these mother-adolescent dyads, results revealed that previously depressed mothers exhibited significantly more withdrawn and disengaged behaviors than did never depressed mothers. Of particular interest, mothers' current depressive symptoms, as measured on the BDI-II, were not significantly associated to withdrawn/disengaged behaviors in the *observed* interaction. Maternal

depressive symptoms were, however, significantly related to *mother and child reported* withdrawn parenting behaviors.

Gordon, Burge, Hammen, Adrian, Jaenicke, and Hiroto (1989) found that mothers with a history of unipolar depression, compared to mothers with a history of bipolar depression, medically ill or control women, made significantly more comments to their children that were off-task or unproductive. Furthermore, current maternal depressive symptoms also were related, at a marginally significant level, to off-task comments. Assuming off-task comments are an indicator of withdrawal/disengagement, these findings suggest that both a history of depression and depressive symptoms relate to this parenting behavior. Finally, Tarullo, DeMulder, Martinez, and Radke-Yarrow (1994), found that previously, but not currently, depressed mothers (no depression in the last month) were less engaged in an observational interaction than never-depressed mothers.

In summary, research has found that mothers with a history of depression are more withdrawn and disengaged from their children compared to mothers without a history of depression (Gordon et al., 1989; Jaser, 2005; Lovejoy et al., 2000; Tarullo et al., 1994). Evidence supports that a current diagnosis of depression relates to withdrawn/disengaged parenting (Cox et al., 1987; Goodman & Brumley, 1990) and that current depressive symptoms relate to observed maternal disengagement (Field et al., 1990) as well as self-reported withdrawn/disengaged parenting (Jaser, 2005). In other research, however, the evidence for the relationship between either current depression or current depressive symptoms and withdrawn/disengaged behavior is less persuasive (Jaser, 2005; Tarullo et al., 1994) and, one of these studies suggests that mothers with a

history of depression are more withdrawn/disengaged than mothers with current depression or depressive symptoms (Tarullo et al., 1994).

Evidence for low levels of positive parenting

Earlier research that relied on self-report measures of parenting difficulties revealed that depressed mothers were less affectionate and communicative than non-depressed mothers (Weissman et al., 1972). In their review, Lovejoy and colleagues (2000) found some support for Weissman and colleagues' (1972) work when they examined the strength of the relationship between maternal depression and low levels of positive parenting. The meta-analytic findings revealed that mothers with either current or lifetime depression showed significantly lower levels of positive behaviors than non-depressed mothers. The strength of the effect size, however, was small in magnitude (mean $d = .16$). Most research, reviewed below, corroborates that depressed mothers are less affectionately involved and have decreased rates of positive interactions with their children.

As noted in the section on withdrawn/disengaged parenting, Field and colleagues (1990) examined mother-infant interactions of currently depressed and non-depressed mothers. During these interactions, depressed mothers spent significantly less time exhibiting positive parenting behaviors (i.e., showing positive affective expressions, smiling and using sing-song communications) than non-depressed mothers. In addition, only 8% of the depressed mothers' behaviors were labeled as "positive" compared to 43% of the non-depressed mothers' behaviors (Field et al., 1990). In another study of mother-infant interactions, Cohn, Campbell, Matias and Hopkins (1990) found a

significant interaction between maternal depression and infant gender. In these observed behavioral interactions, depressed mothers of boys were less positive than non-depressed mothers of boys and girls and depressed mothers of girls.

Other observational research involving depressed and non-depressed mothers and their infants at 2, 4 and 6 months post-partum found that maternal depression at two months post-partum was not significantly related to less positive parenting behaviors (Campbell, Cohn & Meyers, 1995). Over time, however, mothers who remained depressed at 6 months post-partum were less positive in their interactions with their infants and were less positive during toy play with their infants than women with remitted depression (Campbell, Cohn, & Meyers, 1995).

In a sample using older children and adolescents, Hops, Biglan, Sherman, Arthur, Friedman and Osteen (1987) conducted home observations with currently depressed and non-depressed mothers and their children (ages 3-16). They found that depressed mothers had significantly higher rates of dysphoric affect and lower rates of happy affect in their interactions with their children than non-depressed mothers. Similarly, Dumas and Serketich (1994) found that mothers who reported more depressive symptoms (on the BDI) displayed lower levels of positiveness (defined as warm, rewarding, helping and approving behavior) in their interactions with their 4-9 year old children.

In contrast to these findings, Lovejoy (1991) found no difference between currently depressed and non-depressed mothers' use of positive maternal behaviors (defined as physical affection, play, talk, questions and requests as well as approval and laughter) with their 3-4 year old children. In addition, Webster-Stratton and Hammond

(1988) found no group differences between home-based interactions between currently depressed and non-depressed mothers and their 3-8 years old children on one indicator of positive parenting, praise.

When examining lifetime history of maternal depression, as well as current mood, and positive parenting behaviors in mother-child interactions, Gordon and colleagues (1989) found that mothers with unipolar depression were significantly less positive than mothers with chronic medical illnesses. Mothers with a history of unipolar depression were only marginally different from the well mothers. Current depressed mood, however, was not associated with positive parenting in women with a history of unipolar depression.

In summary, there is evidence supporting the finding that mothers with a history of depression are less positive in their parenting compared to mothers without a history of depression (Campbell et al., 1995; Lovejoy et al., 2000) and mothers with chronic medical illnesses (Gordon et al., 1989). There is also evidence to support that a current diagnosis of maternal depression and current depressive symptomatology are related to less positive parenting behavior (Dumas & Serketich, 1994; Field et al., 1990; Hops et al., 1987) and one study found that depressed mothers of boys were less positive than depressed mothers of girls and non-depressed mothers of boys and girls (Cohn et al., 1990). Two studies that were reviewed, however, did not find group differences in positive parenting behaviors between depressed and non-depressed mothers (Lovejoy, 1991; Webster-Stratton & Hammond, 1988) and one study found that current depressed mood was not

associated with positive parenting in women with a history of unipolar depression (Gordon et al., 1989).

Evidence for poor monitoring and supervision

While there is an association between parental depression and diminished parenting in general (Downey & Coyne, 1990), there is less evidence for the relationship between parental depression and child monitoring and supervision. Although there is little evidence, researchers have hypothesized about a relationship. For example, Sagrestano, Holmbeck, Paikoff and Fendrich (2003) proposed that when parents are depressed, they are less likely to establish boundaries and maintain limits with their children. Thus, children are more likely to maintain a peer-like role with their parents. Two studies provide some support for Sagrestano and colleagues' (2003) proposal.

In an early study with pre-school children, Forehand, Lautenschlager, Faust and Graziano (1986) found that depressive symptoms were related to mothers using less clear and consistent directions to their children. Borrowing from Dishion and McMahon's (1998) conceptualization of monitoring, poor directions can be viewed as inadequate supervision of young children, providing support for a relationship between parental depressive symptoms and supervision. In the only study with older youth, Chilcoat, Breslau and Anthony (1996) examined the association of a history of psychiatric illness with monitoring and supervision. Relevant to the current review, mothers with a history of major depression reported lower levels of parental monitoring and supervision than mothers without a history of this diagnosis.

In summary, only two studies have examined the association between maternal depression or depressive symptoms and poor monitoring and supervision. One found support for depressive symptoms (Forehand et al., 1986) and one found support for a history of maternal depression (Chilcoat et al., 1996) being associated with poor monitoring and supervision.

Evidence for inconsistent discipline

When a mother is depressed, her ability to effectively manage and discipline her children can be compromised (Kochanska, Kucynski, Radke-Yarrow, & Welsh, 1987). More specifically, maternal depression or depressive symptoms may lead to attentional deficits, such as intermittent attention, which may, in turn, be associated with a mother's ability to use consistent discipline practices (Hill & Herman-Stahl, 2002). In their sample of African American and European American mothers and their kindergarten-aged children, Hill and Herman-Stahl (2002) examined the mediating role of maternal depressive symptoms in the relationship between neighborhood factors and parenting behaviors, specifically inconsistent discipline. Of relevance to this review, maternal depressive symptoms significantly predicted inconsistent discipline practices, a finding which was consistent across ethnic groups.

In another previously mentioned study, Goodman and Brumley (1990) examined the quality of parenting behaviors of depressed, schizophrenic, and well mothers. Observed interactions between mothers and their 3-5 year old children revealed that depressed mothers provided less consistent discipline compared to schizophrenic and well mothers (Goodman & Brumley, 1990). Kochanska and colleagues (1987) examined

mothers' abilities to consistently manage the resolutions of conflicts that arose with their children. Providing consistent discipline often requires confrontation, mutual compromise, and the enforcement of child compliance. In their sample of mothers with unipolar depression, more severely impaired mothers were less effective in reaching a compromise resolution after their child resisted their request than were less impaired mothers. These findings suggest that mothers with more severe depression struggle with confronting their children when they do not comply with maternal requests and that this, in turn, makes it difficult for these mothers to discipline consistently.

In conclusion, previous research in the area of maternal depression and inconsistent discipline, although limited, provides evidence for the association between maternal depressive symptoms, as well as a current depression diagnosis, and inconsistent discipline practices (Goodman & Brumley, 1990; Hill & Herman-Stahl, 2002; Kochanska et al., 1987).

Severity of past depression

Research suggests some level of support between various indicators of parental depression and behaviors that can be characterized as representing negative components of parenting. In addition to current depression and depressive symptoms, Lovejoy and colleagues (2000) and Gordon and colleagues (1989) have specifically identified the deleterious effects of parenting in mothers with a history of depression. However, it may not be simply a history of depression that is important for parenting but the *severity* of the depression (Brennan, Hammen, Anderson, Bor, Najman, & Williams, 2000). Brennan and colleagues (2000) defined severity of past depression as the maximum number of

depressive symptoms experienced in a depressive episode. The severity of a parent's depressive symptoms during an episode of depression is more likely to be associated with greater functional impairment and, therefore, parenting deficits. The current research contributes to the field by focusing on severity of past depression symptoms rather than presence or absence of a history of depression.

Mindfulness as a mechanism

In order to further illuminate how parental depression severity and current depressive symptomology contribute to negative parenting, it is important to examine the potential mechanisms underlying this relationship. One potential mechanism is mindfulness, primarily because of its focus on attention and awareness. As Dumas (2005) has pointed out, mindfulness is a "... state of mind [that is] characterized by careful, considerate, and compassionate attention, irrespective of the specific practices that foster it... [More specifically,] This attention is also nonjudgmental in that it accepts immediate experiences as they are. It does not evaluate these experiences, identify with them, or attempt to prolong or change them" (p.10). As will be reviewed in Section VI, maternal depression is associated with attention biases or deficits (Goldsmith & Rogoff, 1997). Therefore, mindfulness, and its emphasis on attention and awareness, may be a variable that facilitates the understanding of the link between maternal and paternal depression and negative parenting (Dumas, 2005).

The next section provides a brief historical context of mindfulness. Section IV discusses some of the proposed scientific definitions of mindfulness. The discussion of mindfulness, as contextualized by Eastern philosophy and Western science, provides the

background for further describing the empirical relationship between depression and mindfulness (Section V). Last, the relationship between mindfulness and negative parenting is explored in Section VI.

III. The Cultural-Historical Context of Mindfulness

Mindfulness lies at the heart of Theravada Buddhism and its teachings. As a term, Theravada means “Doctrine of the Elders” (Gombrich, 1998, pg. 3) and refers to the senior monks who maintain the Buddhist traditions. In the Theravada tradition, mindfulness is an essential ingredient for personal growth and well-being and is cultivated through insight meditation, or Vipassana meditation (Rocheleau, 2002). The terms mindfulness and meditation are not used interchangeably, however. Meditation may be thought of as scaffolding that allows one to cultivate mindfulness, to sustain attention in particular ways and to inquire closely into the nature of our being (Wallace, 1999). Like a scientist who uses a microscope to see more clearly, the Buddha uses meditation to penetrate beneath the surface of his mind and bodily experiences; ultimately, this allows for an investigation into the nature of human suffering (Kabat-Zinn, 2003).

Scholars refer to Gotama Buddha as the founder of Buddhism. Born in the 6th century BC in the Northern Indian-Nepali border, his family name was Gotama and personal name Siddattha. At age 35, Siddattha became enlightened by realizing the truth, or the Dhamma (Gombrich, 1998). The Buddha’s teachings, or the Dhammas, reflect the discoveries he made while contemplating the nature of suffering. Based on his own experiences, he concluded that mental afflictions are the sources of human distress

(Wallace, 1999). The wisdom of insight is the antidote to distress and thus, Buddhist practice emphasizes the cultivation of insight and well-being through mindfulness and meditation.

Mindfulness in its essence is bare attention (Mahathera, 1971). Like the Buddha, William James stated that what you attend to becomes your reality (James, 1924). When an emotion such as anger arises, there is affliction. By just recognizing it, it will start to disempower the emotion. It is not a matter of suppression, but a matter of disengagement. James (1924) further stated that training attention is one way to empower the mind and that we have choice over what reality we attend to. By attending to realities, our experiences shift (Wallace, 1999). In the West, Jon Kabat-Zinn (1994) believed that this simple practice of bringing awareness and attention to the present moment of reality, nonjudgmentally, would help reduce the suffering of individuals with chronic medical illnesses. Kabat-Zinn was the first to integrate mindfulness principles and practices into Western medicine in the early eighties and his work continues to influence the medical and psychological field today. Kabat-Zinn's original Mindfulness-Based Stress Reduction Program (MBSR) created the basis for more recent mindfulness-based interventions that ameliorate psychological disorders, such as binge eating disorder (BED) (Kristeller & Hallet, 1999), anxiety (i.e., Kabat-Zinn, Massion, Kristeller, Peterson, Fletcher, Pbert, Lenderking, & Santorelli, 1992; Orsillo, Roemer, & Barlow, 2003) and chronic depression (Segal, Williams, & Teasdale, 2002). More specifically, Mindfulness-based Cognitive Therapy for depressive relapse (MBCT) will be further discussed in Section V on the relationship between depression and mindfulness.

The abundance of mindfulness-based therapies speaks to its appeal as an approach to obtain greater physical and psychological health and its popularity provides avenues for promising clinical successes. Additionally, these therapies are associated with multiple physical and psychological well-being outcomes, such as decreases in chronic pain, fatigue and depression (Kabat-Zinn, 1982; Kabat-Zinn, Lipworth, Burney, 1985), depressive relapse (Ma & Teasdale, 2004), anxiety (Kabat-Zinn et al., 1992), as well as increases in improved self-efficacy, coping and motivation (Kabat-Zinn, 1993; Shapiro, Schwartz, & Bonner, 1998). Furthermore, research on mindfulness meditation reveals that advanced meditators show greater left prefrontal cortical activity, one potential neural indicator of positive affect (Davidson et al., 2003). In addition, meditators have demonstrated higher gamma EEG profiles compared to controls, when asked to cultivate compassion during meditation. Gamma-band EEG synchronization is thought to reflect attention and affective processes; the functional significance of higher gamma activity, however, has yet to be determined (Lutz, Greischar, Rawlings, Ricard, & Davidson, 2004).

A recent meta-analytic review reported a substantial effect size (0.59) for the 21 primary studies on mindfulness training to date (Baer, 2003). Many of these mindfulness interventions also have initial research support and have met criteria for a probably efficacious treatment (specifically, Kabat-Zinn's MBSR program; Baer, 2003). The field, however, does not know the active or essential ingredients of mindfulness nor does it agree upon an operational definition of mindfulness. The lack of clarity around an operational definition has led to the confusion of mindfulness with other Western

constructs such as relaxation, and the likening of mindfulness interventions to meditation or acceptance and commitment-based therapies (Dimidjian & Linehan, 2003). In an attempt to discriminate mindfulness from other constructs, Bishop and colleagues (2004) write:

Mindfulness approaches are not considered relaxation or mood management techniques, however, but rather a form of mental training to reduce cognitive vulnerability to reactive modes of mind that might otherwise heighten stress and emotional distress or that may otherwise perpetuate psychopathology. The cultivation and practice of mindfulness through this program of mental training is thus thought to mediate the observed effects on mood and behavior (Kabat-Zinn, 1990), but these speculations remain untested and thus unsubstantiated. (p. 231)

While some mindfulness researchers believe that concepts like compassion, acceptance, insight and wisdom are difficult to evaluate empirically, others argue for creating an empirically valid operational definition of mindfulness (Baer, 2003). In order for the field to progress scientifically, scientists need to demonstrate that mindfulness holds unique explanatory power in models of emotional vulnerability (Zvolensky, Feldner, Leen-Feldner, & Yartz, 2005). Furthermore, the field needs to establish construct specificity and an operational definition of mindfulness in order to create instruments for measurement (Bishop et al., 2004).

IV. The Construct of Mindfulness

In its broadest conceptualization, descriptions of mindfulness have included a type of nonjudgmental, nonelaborative, present-focused awareness in which each bodily sensation, feeling or thought that arises in one's attention is noted and accepted as it is (Kabat-Zinn, 1990; Segal et al., 2002). With mindfulness, feelings, thoughts and

sensations are observed with awareness as events in the mind, without meaning that comes from habitual storytelling or reactive interpretations about what the events might represent (A. Kozak, personal communication, March 3, 2005), and without reacting to these events in automatic ways. The process of observing and attending to thoughts as events without judgment or evaluation is thought to allow a “space” between one’s perception and one’s response. This mindful space allows individuals to act with intention rather than act automatically or reflexively (Bishop et al., 2004). While this may sound simple in theory, the actual practice of approaching one’s internal experiences with curiosity and compassion, without attempts to fix the situation, takes repeated practice. It also represents a fundamental shift in the way we approach and work with emotion (Hayes & Feldman, 2004).

In addition to this broad conceptualization of mindfulness, there also is recognition in the scholarly literature that mindfulness is related to *self* or *affect regulation* (Hayes & Feldman, 2004). There is dissention among theorists, however, as to how mindfulness is conceptualized and where it is situated with respect to cognition. For example, Langer and Moldoveanu (2000) conceptualize mindfulness as “the process of drawing novel distinctions” (p.1). This process, which is facilitated by a sense of here and now “wakefulness” and focused engagement, leads to outcomes such as greater attunement to the surrounding environment, increased receptivity to new information, greater ability to create new categories for “structuring perception,” and the increased ability to problem solve from multiple perspectives (Langer & Moldoveanu, 2000, p.2).

While Langer and Moldoveanu's formulation of mindfulness describes a cognitive approach to assimilating stimuli from the external environment, Brown and Ryan (2003) describe mindfulness as an attribute of consciousness that enables individuals to observe what is happening both internally and externally. Consciousness differs from other kinds of mental processing, such as cognition, motives and emotions (e.g., Averill, 1992; Mayer, Chabot & Carlsmith, 1997), and encompasses both awareness and attention (Brown & Ryan, 2003). Awareness enables the continuous monitoring of one's internal and external environment, forming the backdrop or radar of consciousness. An individual may be aware of stimuli without it being central to his attention.

Attention is the focusing of conscious awareness that allows an aspect of the environment to become more salient. Although awareness and attention are present in normal functioning, mindfulness is *heightened* attention to and awareness of present experience in a manner that is open and receptive (Brown & Ryan, 2003). This kind of mindful consciousness is contrasted with restricted consciousness that may take the form of rumination (i.e., preoccupation with the past or excessive anxiety about the future which detracts from the present moment) or mindlessness. Less mindful states are characterized by automatic, habitual functioning that is present to various degrees and with different frequencies throughout our day (Brown & Ryan, 2003).

Mindfulness can also be differentiated from the construct of self-awareness. For example, Carver and Scheier's (1981) control theory defines self-awareness as knowledge of the self. Mindfulness, though, is not limited to internal awareness. In addition to self-awareness itself, various forms or deviations of this construct also differ

from mindfulness. Psychological mindedness (PM) differs from mindfulness in that PM reflects the ability to use focused attention to recognize past maladaptive behavioral patterns (Beitel, Ferrer, & Cecero, 2005). Unlike mindfulness which focuses on the present moment, psychological mindedness also focuses on potential future implications of past and present behavior (Beitel et al., 2005). Other terms such as private self-consciousness (Fenigstein, Scheier, & Buss, 1975) refers to a form of awareness that is defined by its “focus rather than its quality” (Brown & Ryan, 2003, p. 823) which differs from mindfulness. The term public self-consciousness differs even more from mindfulness, as the concern about how others perceive the self detracts from being able to focus on the present moment. Mindfulness also differs from self-monitoring (Synder, 1974) and reflection (Trapnell & Campbell, 1999). All these forms of self-awareness – psychological mindedness, private self-consciousness, public self-consciousness, self-monitoring and reflection - reflect cognitive processes that require self-examination, or reflexive consciousness (Baumeister, 1999). In contrast, mindfulness is a mode of operating that is perceptual, or “pre-reflexive,” as it operates *on* thought and feeling rather than *within* (Brown & Ryan, 2003, p. 823).

As an example, rather than judging oneself for having done something and wondering about the bad outcomes that may occur, mindfulness provides a “bare display” of what is happening, right here and right now, without evaluative, self-commentary (Shear & Jevning, 1999, p. 204). Whereas states of reflexive consciousness rely on cognitive operations, mindfulness “concerns the quality of consciousness itself and... is theorized to have little or no inherent relation to reflexive thought” (Brown & Ryan,

2003, p.823). Furthermore, mindfulness can be differentiated from attention training (Wells, White & Carter, 1997). As a cognitive technique, attention training relies on an information processing approach that intends to *modify* cognitive factors rather than perceiving stimuli as they unfold in the present moment without judgment (Vujanovic et al., 2007).

In their effort to promote scientific progress on mindfulness research, Bishop and colleagues (2004) propose an operational definition that includes two components: 1) the self regulation of attention and orientation toward one's experiences in the present moment 2) that is characterized by curiosity, openness, and acceptance. Self-regulation of attention refers to observing and attending moment-to-moment to one's changing thoughts, feelings and sensations, a quality that some describe as being alive in the present moment. According to this component of mindfulness, self-regulation of attention requires sustained attention. It also involves the skill of attention switching that allows the person to bring attention back to the current focus, in a nonjudgmental way. In addition to sustained attention and attention switching, the self-regulation of attention also cultivates a non-elaborative awareness about thoughts, feelings and sensations. Rather than becoming embroiled in the elaboration of thoughts about one's experience, mindfulness is about experiencing events directly in the mind and body (Teasdale, Segal, & Williams, 1995). The process of bringing one's attention back to present focus is thought to "inhibit secondary elaborative processing of thoughts, feelings and sensation that arise in stream of consciousness" (Bishop et al., 2004, p. 233). Theoretically, mindfulness practices would be associated with improved cognitive biases, especially

with regard to stimulus selection. This could be detected by tasks such as the emotional Stroop task that requires the inhibition of semantic processing (Gotlib et al., 2004).

Mindfulness is also characterized by having an attitude of curiosity about where the mind drifts at any given moment. This attitude of curiosity characterizes “orientation to experience” which is the second factor in Bishop and colleagues’ (2004) proposed operational definition of mindfulness. Everything that arises in the stream of consciousness is subject to observation. Such observation occurs with a stance of acceptance and awareness of the “ever changing flow of private experience” (Bishop et al., 2004, p. 234). Mindfulness is a “mode of awareness” or a state-like quality (versus trait-like) that arises when attention is regulated in this accepting way (Bishop et al., 2004, p. 234). Brown and Ryan (2003) also view mindfulness as a state that varies from heightened levels of clarity to lower levels of automatic, mindless functioning. According to this stance, everyone contains the inherent capability to be mindful. Individuals may differ in the regularity with which they maintain attention and awareness and therefore, there are intraindividual variations in mindfulness.

While there is some conceptual overlap by investigators working within the mindfulness literature, there is disagreement about the key components that define mindfulness. Hayes and Feldman (2004) have proposed that attention, awareness, present focus and acceptance are the primary components of mindfulness. Their 18-item cognitive affective mindfulness scale (CAMS) assesses the awareness, attention, present-focus and acceptance/non-judgment aspects of the mindfulness construct acquired through life experiences rather than meditation training. Further refinement of the 18-

item scale in two studies with undergraduates yielded a 12-item scale (CAMS-R) of four factors (Feldman, Hayes, Kumar, & Greeson, 2003, 2004): attention, awareness, present focus and acceptance. In a subsequent study of undergraduates, higher mindfulness scores were associated with less experiential avoidance, suppression of thoughts, rumination and worry. Higher levels of mindfulness were also associated with the ability to refurbish one's mood, have greater clarity of feelings and greater cognitive flexibility. Furthermore, mindfulness was associated with less depression, anxiety and greater well-being (Feldman & Hayes, 2005).

Both Bishop and colleagues (2004) and Hayes and Feldman (2004) have argued for acceptance as a second component of mindfulness beyond attention and awareness. Brown and Ryan (2001) developed a self-report scale to specifically assess these two factors, presence (containing present-centered attention and awareness) and acceptance. The two factors demonstrated satisfactory psychometric properties and CFA found that this second-order factor model was represented under an over-arching mindfulness factor with satisfactory fit. In subsequent convergent, discriminant and criterion validity studies involving large samples, however, the acceptance factor offered no further explanatory benefit over that demonstrated by the presence factor (attention and awareness) alone (Brown & Ryan, 2001).

These findings suggest that acceptance, as a distinct construct, is superfluous. As a consequence, items from the presence factor (attention and awareness) were utilized to constitute a revised measure: the Mindful Attention and Awareness Scale (MAAS; Brown & Ryan, 2003). Although the acceptance factor did not show any added

explanatory power in the development of the MAAS, Brown and Ryan proposed that acceptance may be embedded in the ability to maintain attention to and awareness of what is happening. Therefore, it is a component of attention and awareness rather than a difference construct. By accepting things as they are, one may be allowed to be in the present moment. Tolle (1999) writes that giving your “fullest attention to whatever the moment presents... implies that you also completely accept what is, because you cannot give your full attention to something and at the same time resist it” (Tolle, 1999, p. 56).

Following this discussion of the construct of mindfulness, the next section examines the link between depression and mindfulness and begins by exploring a study from developmental psychology (Goldsmith & Rogoff, 1997). The section then turns to a discussion on models of cognitive vulnerability to depressive relapse because it provides the theoretical context for the Mindfulness-Based Cognitive Therapy for depressive relapse (MBCT) program. As the mindfulness and depression literature primarily focuses on mindfulness-based interventions for depressive relapse, this will be the primary focus of this next section.

V. The Link between Depression and Mindfulness

Evidence from the developmental literature

When parents are dysphoric or depressed, it may impact their ability to be mindful, or attend to and be aware of what is happening in the present moment. Depressive symptoms may inhibit parent’s ability be mindful or attend to their infants in ways that foster the infant’s social and cognitive development. As briefly mentioned in Section I, parental attention is a vital factor in children’s cognitive development and an

important resource for adult learning and daily functioning. Changes in maternal and paternal attention that arise from depression may adversely affect children's development.

Depression, specifically dysphoria, has been demonstrated to interfere with joint attention between infants and their caregivers. Joint attention, as a developmental process, plays an important role in cognitive development because it directs the infant to important information in the environment and helps infants and children know what is valued in their environment. Directing attention is an important component of learning to solve problems, which is a critical factor in cultivating competence (Gauvain, 2001). Tomasello and Farrar (1986) have determined that joint attention is important for children's language acquisition (e.g., vocabulary and communication skills) whereby language development is enhanced when adults participate in attention following (e.g., tracking the cues of the infant's interest) in contrast to attention switching (e.g., shifting the infant's focus of attention away to another object).

Goldsmith and Rogoff (1997) examined potential variations in joint attention with an American middle-class group of dysphoric and non-dysphoric mothers and their toddlers. They defined joint attention to include primary attention, whereby mother-toddler dyads participated in the same activity, as well as secondary attention, whereby a person may be attending to something else without a partner, but still monitors the partner's activity or is available to assist as needed. Goldsmith and Rogoff (1997) found that mothers who were dysphoric engaged in less coordinated joint focus and devoted less secondary attention to their children's activities than did mothers without dysphoria.

Dysphoric mothers tended to focus on one event at a time rather than attending to two or more events simultaneously. Researchers surmise that this shorter duration of shared attention between dysphoric mothers and their children may be one possible mechanism through which children develop the cognitive, social and emotional difficulties that are well-documented in the literature (e.g., Cox et al., 1987). These findings provide important evidence for the impact that caregivers' attentional capacities and deficits, or lack of mindfulness, may have on their children's development.

Associations of Mindfulness and Depression

One focus of the literature on mindfulness and depression has been on the association of these two variables. This research primarily has examined the Mindfulness Attention and Awareness Scale (MAAS; Brown & Ryan, 2003) and its relation to well-being scales, including depression. Specifically, Brown and Ryan (2003) found the MAAS to be inversely related to three measures of depression: the depression subscale of the NEO-PI Neuroticism scale (-.56); depression as measured by the Center for Epidemiological Studies- Depression (CES-D; Radloff, 1977) (-.37); and the Beck Depression Inventory (BDI; Beckham & Leber, 1985) in two samples (-.41, -.42). As the MAAS assesses the central construct of the proposed study (e.g., mindfulness as a mediator), it will be discussed in further detail in the Method section. However, of importance, Brown and Ryan (2003) have demonstrated that mindfulness relates inversely to various measures of depression.

Models of Cognitive Vulnerability to Depressive Relapse

The mindfulness and depression literature has also focused on mindfulness as a treatment intervention for individuals with a history of depression. Specifically, Mindfulness-Based Cognitive Therapy for depression (MBCT) has been effective in reducing depressive relapses in people who have had a history of three or more depressive episodes, providing some evidence that mindfulness training as an intervention is related to lower levels of depression. The following discussion on models of cognitive vulnerability to depressive relapse provides the theory behind MBCT and how it prevents depressive relapse.

The idea of treating depression with mindfulness, in conjunction with other interventions, is novel in comparison to the well-established and efficacious treatment, Cognitive-Behavioral Therapy (CBT; Beck, Rush, Shaw, & Emery, 1979). While CBT has been effective in reducing subsequent depression relapses when administered *during* depressive episodes and has been the most effective treatment to date for acute depression (Teasdale et al., 2000), Mindfulness-Based Cognitive Therapy (MBCT) was developed as a maintenance therapy for depressive relapse, to be administered during depression remission, *before* depressive recurrence.

Some theorists have postulated that there are different risk factors underlying the onset of a first depressive episode versus those that trigger a recurring depressive episode (Lewinsohn, Allen, Seeley, & Gotlib, 1999). While stressful life events likely contribute to the onset of a depressive episode (Hammen, 1991; Kendler, Thornton, & Gardner, 2000, 2001a), “cognitive reactivity” or the “negative information processing biases”

(Teasdale, 1993, 1988) that accompany an individual's sad mood has been proposed as an important predisposing factor for depressive relapse (Lau, Segal, & Williams, 2004, p. 1002).

More specifically, Segal, Williams, Teasdale and Gemar (1996) theorize that cognitive vulnerability to depressive relapse and recurrence occurs from the repeated associations between the depressed mood and the negative thinking patterns that accompany major depression. According to the associative network view, thoughts or concepts are represented by 'nodes'. When a node is activated beyond a specific threshold level, the concept represented by that node comes into consciousness. Nodes are connected to each other by links to other associated concepts, and, collectively, they form a network of inter-related nodes. Activation of a certain node can thus bring many other concepts to consciousness. Another important feature of networks is that associations may change over the course of time. For example, long-term experiences can change the strength of the links and the threshold activation level of these nodes. Frequently associated concepts have strengthened associations such that one activated concept will ignite the other. Additionally, nodes that have been regularly activated in the past will need less energy to be activated because their threshold has been lowered by frequent use. According to this model, increased associative strength and decreased sensitization thresholds play an important role in depression relapse. These repeated nodal associations lead to changes at both the cognitive and neuronal levels, such that individuals who have a past history of depression differ from those who have never experienced a major depressive episode.

In particular, when previously depressed individuals are in dysphoric moods, their patterns of thinking differ from people without a history of depression. Teasdale (1988) articulated this discrepancy in his differential activation hypothesis. In essence, vulnerability to depressive relapse is influenced by the patterns of thinking that are activated in a depressed state. Teasdale (1988) suggests that these patterns determine whether the depressed state will remain mild or become more severe. Patterns that are activated in more severe states will determine whether the state remits, or becomes chronic. The differential activation hypothesis states that the pattern of thinking, *once depressed*, is the critical factor in determining whether the initial depression will intensify. When individuals have repeated experiences of depressed moods, their associative networks take less to become activated, and thus, they are at greater risk for depressive relapse when in dysphoric moods compared to individuals with less, depressive associative “training.” Studies that have examined differences in patterns of thinking activated by mild dysphoria in previously depressed and never-depressed participants provide evidence to support the differential activation hypothesis (e.g., Segal, Gemar, & Williams, 1999) and the hypothesis that cognitive reactivity is associated with an increased risk for depressive relapse (Lau et al., 2004). Subsequent studies (e.g., Segal et al., 2003) provide similar findings that previously depressed individuals show increases in negative thinking and dysfunctional attitudes when experiencing a depressed mood, supporting the link between “mood-linked cognitive reactivity and depressive relapse” (Lau et al., 2004, p.1008).

In an effort to determine if cognitive reactivity is an independent predictor of depressive relapse, investigators (Lau et al., 2004; Segal et al., 1999; Segal, Kennedy, Gemar, Segrati, Hood, & Pedersen, 2003) examined whether an increase in scores on the Dysfunctional Attitude Scale (DAS; Weissman & Beck, 1978) after a negative mood induction predicted risk for developing another depressive episode after completing pharmacotherapy or cognitive therapy treatment. Results indicated that regardless of treatment, the amount of cognitive reactivity independently predicted depressive relapse over the next few years (Lau et al., 2004). Furthermore, in an effort to examine the modifiability of cognitive reactivity as a risk factor, Segal and colleagues (2003) demonstrated that cognitive vulnerability can be reduced. Formerly depressed participants (who recovered from depression through either pharmacotherapy or cognitive therapy) completed the DAS pre and post a negative mood induction. While the two groups did not differ on the pre-mood induction score, participants in the pharmacotherapy group showed a significant increase in their post-mood induction DAS scores compared to participants who had been randomly assigned to the CBT treatment group (Segal et al., 2003). While these results suggest that the two interventions are differentially effective, the ability of the CBT participants to mitigate their post DAS scores suggests that cognitive reactivity is a modifiable risk factor rather than a fixed one (Lau et al., 2004).

Additionally, there is indirect evidence to support that changes in cognitive reactivity reduce subsequent risk for depressive relapse. When individuals influence their ability to “decenter” or “disidentify” with their negative moods and thoughts in a

Mindfulness-Based Cognitive Therapy (MBCT) depressive relapse prevention program, they are focused on changing their relationship to cognitive content rather than changing the content itself (Lau et al., 2004). With the skill of decentering or disidentifying with negative experiences that are activated by sad or dysphoric moods, participants are less likely to allow those thoughts and feelings to cascade to a depressive relapse. In other words, increasing one's field of contextual awareness (also known as metacognitive awareness) may lessen the sad mood-negative thought connections (Lau et al., 2004). Empirical evidence from a MBCT study (Teasdale et al., 2000) revealed that enhancing metacognitive awareness was associated with reduced relapse risk for depression. The MBCT program and the evidence supporting its efficacy are further described in the research below.

Mindfulness Based Cognitive Therapy for Depressive Relapse

MBCT for patients with recurrent depression draws from Kabat-Zinn's Mindfulness-Based Stress Reduction (MBSR) model. MBCT is an eight week treatment program for people who have recovered from depression. The program also incorporates elements of cognitive therapy (Beck et al., 1979) into its treatment approach. For example, mindfulness clinicians use automatic thoughts to explain negative self-talk and beliefs in such thoughts as do traditional CBT therapists with patients. What differs between CBT and MBCT is that there is little emphasis in the latter on distinguishing thoughts as positive or negative. Rather, the focus in MBCT is on developing observational skills that allow the observer to *become aware* of (i.e., focus attention on) a thought instead of identifying a thought as *dysfunctional* to eliminate it. Cognitive

therapy typically focuses on changing the content of (e.g. “irrational”) cognitions. On the other hand, mindfulness approaches focus on changing one’s relationship to thoughts and feelings, which encourages the view of thoughts as “thoughts” rather than as reality (Segal et al., 2002).

MBCT is designed to prevent depressive relapse by teaching formerly depressed participants to observe their thoughts, feelings and bodily sensations non-judgmentally. Rather than viewing thoughts and feelings as true reflections of reality or true perceptions of themselves, participants are taught to view events as coming and going. Such an approach is believed to mitigate the escalation of negative thoughts into patterns of rumination (Baer, 2003), which as previously discussed, could easily lead to a recurrent, depressive episode.

In order to evaluate MBCT as a prevention intervention, Teasdale, Williams, Soulsby, Segal, Ridgeway and Lau (2000) examined the effects of MBCT on rates of depressive relapse. One hundred and forty-five participants, who were currently in remission from a major depressive episode, were randomly assigned to a treatment as usual (TAU) group or a TAU plus MBCT group. Participants were categorized by their number of previous depressive episodes (two versus more than two episodes) and were then randomized to treatment intervention. Eligibility criteria required that participants not be on anti-depressant medication.

The intervention involved eight consecutive treatment sessions. Sessions lasted two hours each and participants completed daily homework assignments. Results indicated that there was a significantly lower relapse (37% relapsed) in the MBCT group

compared to the TAU group (66% relapsed) during the one-year follow-up period for participants with three or more previous depressive episodes. For participants with only one or two depressive episodes, the MBCT and TAU groups did not differ. Based on the results of this study, there appears to be two distinct groups of individuals with depression and that mindfulness training is helpful for participants with three or more depressive relapses.

In order to further explore these differential relapse prevention effects, Ma and Teasdale (2004) replicated the previous findings of Teasdale and colleagues (2000). Using the same research design, Ma and Teasdale (2004) compared the relapse rates of depression in a sample of 73 participants who were assigned to TAU or a TAU plus MBCT group. Of the patients who reported three or more episodes of depression, results revealed that 36% of MBCT participants relapsed compared to 78% of the TAU participants. Of the participants reporting two or fewer depressive episodes, however, 50% of MBCT participants reported relapse/recurrence compared with 20% of the TAU group. These findings provide further evidence for two distinct groups of depressed patients.

Subsequent analyses revealed that participants who experienced two or fewer episodes of depression reported less childhood adversity and later age of first depression onset. Additionally, they reported more significant negative life events preceding a depressive episode (Ma & Teasdale, 2004). Therefore, the reduction in depression relapse/recurrence in MBCT patients with three or more previous depressive episodes compared to the TAU group was greatest for individuals who reported no significant life

events prior to the depressive episode. This finding suggests that MBCT effectively reduces depression relapse rates associated with “internally provoked” events rather than severe, adverse life events (Ma & Teasdale, 2004, p. 39). That is, MBCT appears to operate by interrupting the internal, autonomous, ruminative depressogenic thinking patterns that accompany dysphoric moods during vulnerable periods of potential relapse.

To summarize the link between depression and mindfulness, the developmental literature provides evidence for how dysphoria or depression may impact a mother’s ability to mindfully attend to her infant in ways that foster her infant’s social and cognitive development as dysphoria has been demonstrated to interfere with joint attention between infants and their caregivers. In research using young adult and adult samples, mindfulness has related inversely to various measures of depression. In addition, the mindfulness and depression literature also has focused on mindfulness as a treatment intervention for individuals with a history of depression. MBCT has been effective in reducing depressive relapses in people who have had a history of three or more depressive episodes, demonstrating that mindfulness training as an intervention for these individuals is related to lower levels of depression. Overall, evidence suggests that people with histories of depression are less mindful (i.e., less attentive and aware) than people without histories of depression. Furthermore, when people with histories of depression have current depressive symptoms (i.e., dysphoria, sad mood), they are less likely to be mindfully attentive and aware. In addition, as will be discussed in the next section that examines the link between mindfulness and negative parenting, they are less likely to parent with awareness. Establishing this relationship is important for building

the case for studying mindfulness as a mechanism underlying the relationship between maternal depressive symptoms and negative parenting.

VI. Establishing the Relationship between Mindfulness and Negative Parenting

While there have been a number of mindfulness-based therapies developed to help individuals cope with chronic illnesses and psychological stress, only a handful of these interventions have been created for parent training (e.g., Dumas, 2005; Rocheleau, 2002; Singh et al., 2006). Although the model behind mindfulness-based parent training (MBPT) offers compelling assumptions that would potentially reduce negative parenting, empirical investigations of these assumptions are needed (Dumas, 2005) as the research in this area has yet to demonstrate clinical successes comparable to those achieved by Mindfulness-Based Cognitive Therapy (MBCT) for depressive relapse.

Parent-child interactions play an essential role in child development (Goldsmith & Rogoff, 1997; Lovejoy et al., 2000). Over the last three decades, Behavioral Parent Training (BPT) programs have successfully helped parents to target negative parenting behaviors by teaching parents positive parenting skills. By replacing negative parenting behaviors with positive parenting skills, parents and children change the negative, coercive interactions that usually occur in families where children have disruptive behavior problems (e.g., Barkley, 1997; Eyberg & Bogg, 1998; McMahon & Forehand, 2003; Webster-Stratton, 1992). BPT relies on operant principles of contingencies of rewards and punishments whereby changing these contingencies will lead to decreases in undesirable behaviors and increases in desired ones (e.g., McMahon & Forehand, 2003).

While no one model can account for all human behavior, social and cognitive research has demonstrated that the operant model cannot explain a number of important characteristics of human behavior (Bargh & Chartrand, 1999). More specifically, patterns of behaviors that have become automatic or mindless do not as easily respond to changes in reinforcements and contingencies (Bargh & Chartrand, 1999; Bargh & Ferguson, 2000). There is a lack of attention to and awareness of these behaviors because they are largely out of conscious awareness (Dumas, 2005). Dumas (2005) has postulated that some parents do not respond successfully to traditional BPT programs because their negative parenting behaviors and dysfunctional family interactions have become too automatic and, therefore, challenging to change.

In addition to attention, awareness is a key component of mindfulness, as previously discussed by Brown and Ryan (2003). Automaticity, or *unawareness*, is useful in certain contexts as it provides the necessary short-cuts to manage social interactions and multi-task habitual responsibilities for greater efficiency. More specifically, Bargh and Chartrand (1999) state that:

... automatic evaluation of the environment is a pervasive and continuous activity that individuals do not intend to engage in and of which they are largely *unaware*. It appears to have real and functional consequences, creating behavioral readiness within fractions of a second to approach positive and avoid negative objects, and, through its effect on mood, serving as a signaling system for the overall safety versus danger of one's current environment. All of these effects tend to keep us in touch with the realities of our world in a way that bypasses the limitations of conscious self-regulation capabilities. (p. 475-476, emphasis mine)

While automaticity, or lack of awareness, is a necessary process, it also can be detrimental, or maladaptive. For example, the expression of emotion, for the most part, is not a conscious choice (Damasio, 1994; Wegner & Bargh, 1998). For parents with

depression, the unconscious communication of depressive mood may have detrimental effects on family interactions. Once these well-established habits become entrenched, they may be difficult to change.

Researchers have acknowledged the function of automaticity in family interactions (Milner, 2000), as it plays a major role in parenting and the development of a child's ability to develop adaptive coping skills (Dumas, 1997). Within the family, repeated daily interactions become Automatized Transactional Procedures (ATPs) (Dumas, 2005). ATPs characterize how people who interact together think, feel and behave (Dumas & LaFreniere, 1993; Milner, 1993; Patterson, Reid, & Dishion, 1992). ATPs are relational ways of coping. These interpersonal transactions, including parenting behaviors, are executed with little or no conscious *awareness* (Bargh & Ferguson, 2000; Logan, 1992) in that they are efficient, mindless transactions that require little or no attention. Thus, when faced with stressful situations, parents and children automatically resort to their usual ways of interacting. For parents, ATPs maintain the status quo parenting behaviors in that they represent past ways of parenting and also provide key templates for future ways of parenting and coping (Bargh, Gollwitzer, Lee-Chai, Barndollar, & Trotschel, 2001). For parents who have developed positive parenting skills and relationships with their children, it may be useful to draw upon positive ATP templates or guides. It is not as useful, however, for parents who struggle with negative parenting behaviors to draw upon negative ATP templates (Kochanska & Murray, 2000). In addition, ATPs are challenging to change (Logan, 1989) and are problematic in families which are in constant conflict. Mindfulness, with its qualities of attention and

awareness, may be a novel and useful way to help parents who may be resistant to changing their negative parenting behaviors and ways of relating, more broadly, with their children (Dumas, 2005).

Dumas (2005) examined the role of automaticity in family interactions and proposed a unique intervention, Mindfulness-based Parent Training (MBPT), for families with disruptive children. MBPT relies on three strategies to loosen the grip of automaticity in family interactions. *Facilitative listening* encourages parents to openly share their concerns and experiences with clinicians and to do so by paying attention to their immediate thoughts and feelings, without judgment. This strategy helps parents become more aware and accepting of the realistic parenting challenges they face and less critical of themselves and others. By taking a more accepting, distanced stance and allowing things to be more as they are without immediately trying to solve or fix problems, parents are often able to see more clearly about how best to respond without immediately needing to “do something” to make things better for their children or themselves. The second skill or strategy, *distancing*, encourages emotion regulation. It teaches parents to take a step away from their critical judgments and negative feelings instead of identifying with them. Unlike CT, which emphasizes the identification and modification of negative thoughts, the idea of distancing is to learn to accept the thoughts by “developing a decentered relationship to them” (Dumas, 2005, p. 785). The third component of MBPT involves *Motivated Action Plans* (MAPs). MAPs are behavioral strategies and cognitive maps that specifically delineate how, when, and where the parent will act in order to obtain a desired goal for behavior change. While MAPs require

attention to execute, having a pre-planned MAP should reduce the need for parents to make careful, effortful decisions in challenging situations with their children and promotes more effective ways of parenting and coping in response to known family stressors.

While the language differs slightly, the skills of facilitative listening and distancing are core components of other mindfulness-based programs (e.g. Mindfulness-Based Cognitive Therapy for depressive relapse). MAPs, however, are unique to MBPT and offer clients a guided, step-by-step plan to anticipate and practice how they would like to parent and respond to stressors in more effective ways (Dumas, 2005). MBPT is not intended to supplant BPT programs, but rather test its assumptions (Dumas, 2005). Provided the success of this challenge and its necessary empirical support, Dumas envisions an integrated model that would blend behavioral and mindfulness-based practices to form a more holistic, effective intervention for negative parenting and child disruptive behavior problems.

In a study on mindfulness and parenting, Singh and colleagues (2006) taught mindfulness skills to mothers with autistic children in order to assess the effect of mindful parenting on children's problem behavior (e.g., aggression, non-compliance and self-injury). The investigators hypothesized that mindful parenting practices would reduce children's problem behaviors. Mothers participated in a 12 session mindfulness parent training program phase for 12 weeks followed by a mindfulness practice phase that lasted 52 weeks. While the study consisted of a small sample (three mothers and their autistic children), results were compelling: Mothers' mindful parenting practices

decreased their children's targeted problem behaviors (Singh et al., 2006). Furthermore, all mothers reported greater satisfaction with their parenting skills on the Subjective Units of Parenting Satisfaction scale, which measured mothers' degree of satisfaction with their own parenting skills. Mothers were most satisfied with their parenting skills when using mindfulness skills on a daily basis (Singh et al., 2006).

In conclusion, Dumas (2005) has proposed how lack of mindfulness can contribute to negative parenting. Furthermore, some evidence suggests that employing mindfulness-based parenting can lead to changes in child behavior (Singh et al., 2006). As part of the test of a mediation model, the current study will extend the existing research by examining whether mindfulness is related to negative parenting.

Research Hypotheses

Depression is pervasive (Narrow, 1998), and chronic in nature (Judd, 1997). Previous literature presents a compelling case for an association between parental depression and negative parenting (Lovejoy et al., 2000), particularly withdrawn/disengaged parenting, low levels of positive parenting, poor monitoring and supervision, and inconsistent discipline. Recent efforts are beginning to examine some of the parameters of depression (e.g., the severity of past depression) and their association with parenting. Although the literature to date has not specifically examined the severity of past depression and negative parenting behaviors, Brennan and colleagues (2000) found a relationship between the severity of the worst maternal depressive symptoms and child behavior problems, which may have resulted from parenting difficulties.

The current study contributes to the existing literature in two ways: 1) by examining two parameters of maternal and paternal depression (the severity of past depression and current depressive symptoms) and their relationship to each of four negative parenting behaviors (withdrawn/disengaged parenting, low levels of positive parenting, poor monitoring/supervision, and inconsistent discipline); and 2) by examining the role of mindfulness as a mediator. The following research hypotheses were examined.

Given previous findings between past maternal depression and withdrawn/disengaged parenting behaviors (e.g., Gordon et al., 1989; Jaser, 2005; Lovejoy et al., 2000; Tarullo et al., 1994), it was hypothesized that past depression severity would be related to withdrawn/disengaged parenting behaviors. Furthermore,

based on the findings of Field and colleagues (1990), it was hypothesized that the number of current depressive symptoms would be associated with withdrawn/disengaged parenting behaviors.

While the strength of the relationship between past maternal depression and low levels of positive parenting is weaker than other negative parenting behaviors (e.g., withdrawn/disengaged parenting), it was nevertheless hypothesized that past depression severity would be related to low levels of positive parenting behaviors. The hypothesis was proposed because severity was viewed as a more sensitive measure of depression than presence versus absence of a history of depression. Furthermore, there is evidence to support that current depressive symptomatology is related to less positive parenting behavior (Dumas & Serketich, 1994; Field et al., 1990; Hops et al., 1987). Therefore, it was hypothesized that the number of current depressive symptoms also would be associated with low levels of positive parenting behaviors.

Only two studies have examined the association between maternal depression or depressive symptoms and poor monitoring and supervision. One found support for depressive symptoms (Forehand et al., 1986) and one found support for a history of maternal depression (Chilcoat et al., 1996) being associated with poor monitoring and supervision. Based on the available literature, it was hypothesized that both past depression severity and current depressive symptoms would be related to poor monitoring and supervision.

Previous research in the area of maternal depression and inconsistent discipline provides evidence for the association between maternal depressive symptoms, as well as

a current depression diagnosis, and inconsistent discipline practices (Goodman & Brumley, 1990; Hill & Herman-Stahl, 2002; Kochanska et al., 1987). As a consequence, it was hypothesized that the number of current depressive symptoms would be related to inconsistent discipline. As there is no research on the relationship of past maternal depression and inconsistent discipline, no hypothesis was offered for past depression severity.

This study also examined whether mindfulness, conceptualized primarily as an attention and awareness variable, mediated the relationship of past depression severity, as well as current depressive symptoms, with negative parenting behaviors (i.e., withdrawn/disengaged parenting, low levels of positive parenting, poor monitoring and supervision, and inconsistent discipline). In order for mindfulness to mediate the link between parental depression and negative parenting, not only do parental depression and negative parenting need to be associated, but mindfulness needs to be related to parental depression and negative parenting. Depression and mindfulness are related (Brown & Ryan, 2003) and mindfulness interventions prevent depression relapse, both suggesting an association of these two variables. Furthermore, Dumas (2005) has delineated how mindfulness may influence negative parenting. The following hypotheses examined mindfulness as a mediator.

It was hypothesized that mindfulness would partially mediate the association of past depression severity and three negative parenting behaviors (i.e., withdrawn/disengaged parenting, low levels of positive parenting, and poor monitoring and supervision). A rationale for the link between past depression severity and these

three negative parenting behaviors was previously presented. Mindfulness was hypothesized to mediate this link as attention and awareness, essential ingredients of mindfulness, play key roles in both parental depression and negative parenting behaviors.

Last, mindfulness is inversely correlated with measures of current depressive symptoms (i.e., CES-D and BDI) and mindfulness has been conceptualized as a critical aspect of parenting (Dumas, 2005). Therefore, mindfulness was hypothesized to partially mediate the association of current parental depressive symptoms and all four negative parenting behaviors.

The hypotheses are presented pictorially below:

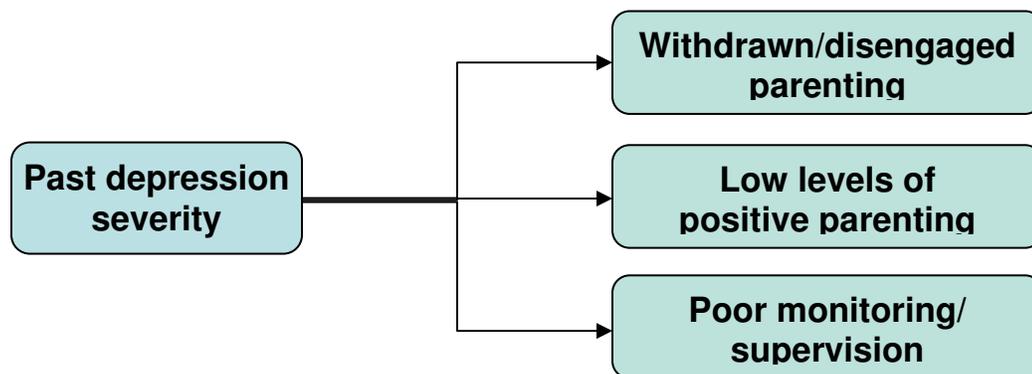


Figure 2: Hypothesis 1

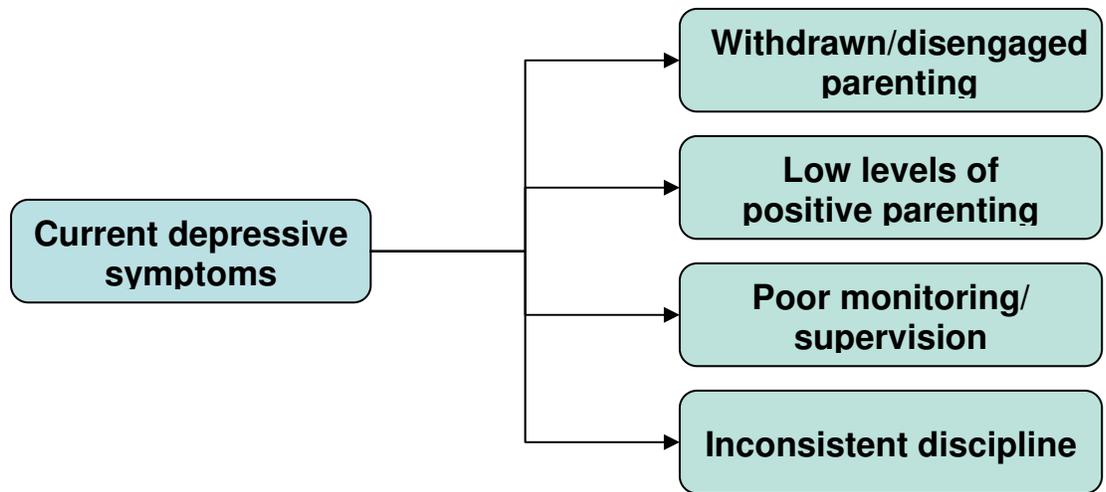


Figure 3: Hypothesis 2

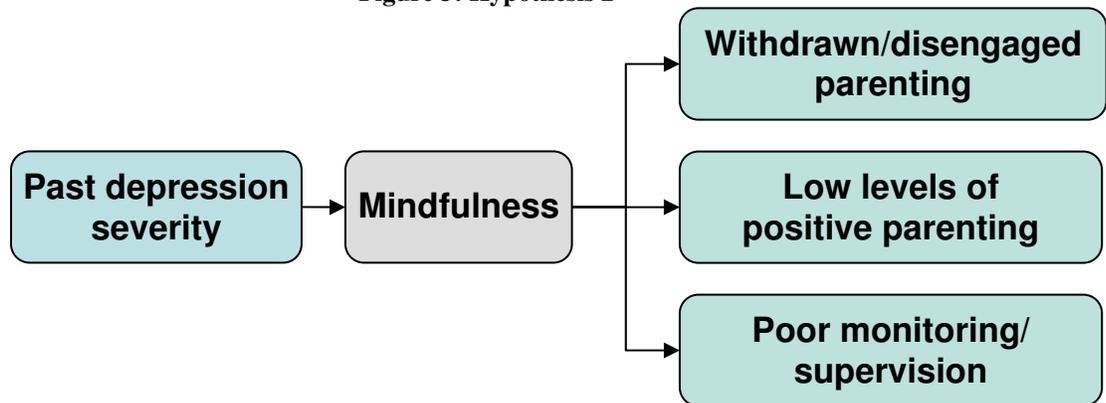


Figure 4: Hypothesis 3

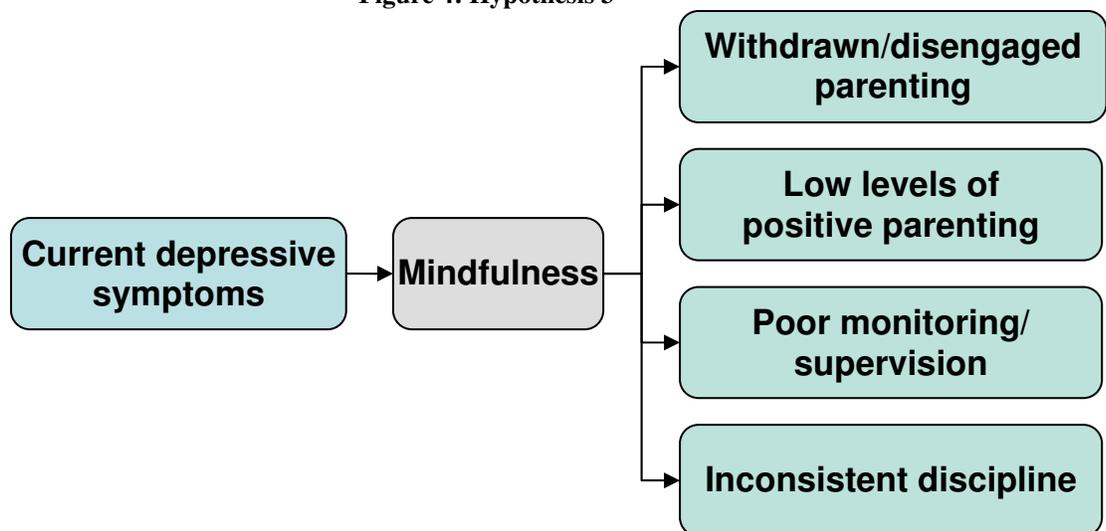


Figure 5: Hypothesis 4

Method

Overview

Participant data were used from the baseline assessment of a Cognitive-Behavioral Family-Based Intervention Program for the prevention of child and adolescent depression. Rex Forehand, Ph.D. and Bruce Compas, Ph.D. spearhead this NIH-funded family-based CBT program in two research sites: the University of Vermont, Burlington, Vermont and Vanderbilt University, Nashville, Tennessee.

Participants

The sample included 121 currently and previously depressed mothers ($n = 104$) or fathers ($n = 17$) and their 167 children between the ages of 9 and 15 years. All families were from Burlington, Vermont or Nashville, Tennessee and the communities surrounding these two small cities. When there were multiple children in the targeted age range (9-15 years) in a family, all children were included. Both male ($n = 89$) and female ($n = 78$) children were included in the sample.

Eligibility criteria included a parent meeting diagnostic criteria for MDE or DYS during the lifetime of her or his participating child who was in the 9-15 year old age range. Exclusionary criteria are delineated in the Procedure section (see page 54).

The demographic characteristics of the sample are presented in Table 1. In general, the sample consisted of Caucasian female parents who were 43 years of age and had at least some college education. The majority of parents also had a partner living in the home. Children were almost equally female and male and were, on average, 11 years old.

Table 1: Descriptive statistics for demographic variables¹

<u>Variable</u>	<u>Mean</u>	<u>SD</u>	<u>%</u>
Parent Gender			85.2% (female)
Parent Age (years)	42.5	7.4	
Parental Level of Education			
Less than high school			6.6%
High school graduate			7.4%
Some college			30.3%
College degree			28.7%
Graduate education			25.4%
Parent Ethnicity			
Caucasian			81.1%
African American			5.7%
Latino/Hispanic			2.5%
Multi-ethnic			4.1%
Did not answer			6.6%
Percent Living With a Partner			63.9%
Child Gender			46.7% (female)
Child Age (years)	11.4	2.3	

¹ N ranged from 114-167 across all measures.

Research Assistants

Graduate research assistants received intensive diagnostic interviewing training for administering the Structured Clinical Diagnostic Interview (SCID; First, Spitzer, Gibbon, & Williams, 2001) and the Schedule for Affective Disorders and Schizophrenia for School-aged Children- Present and Lifetime Version (K-SADS; Kaufman et al., 1997). Clinical interviewers achieve inter-rater reliability and diagnostic fidelity through ongoing SCID and K-SADS training and supervision.

Procedure

Families were recruited from the greater Burlington and Nashville areas by community health professional referrals, newspaper advertisements and community fliers. All prospective participating mothers and fathers were initially screened with a diagnostic phone interview to assess symptoms of past and current Major Depressive Episodes (MDE) and Dysthymia (DYS), lifetime history of Bipolar Disorder I and II, lifetime Schizophrenia Disorder and current Substance Abuse. Diagnoses were made based on sections of the Structured Clinical Diagnostic Interview (SCID; First et al., 2001). Additionally, phone screen interviewers asked mothers and fathers to report on their participating child's or adolescent's current Depression (e.g., any symptoms occurring in the last month), current Conduct Disorder, current Substance use, lifetime Bipolar Disorder and lifetime Schizophrenia. Child and adolescent diagnoses were made during the phone screen based on sections of the Schedule for Affective Disorders and Schizophrenia for School-aged Children- Present and Lifetime Version (K-SADS; Kaufman et al., 1997).

Families were eligible to proceed to the baseline assessment if, based on the phone screen, the target mother or father met DSM-IV criteria for an MDE or DYS diagnosis that occurred during the lifetime of his or her participating child /adolescent. If the target parent met criteria for a current diagnosis of MDE, DYS or substance abuse, they were eligible to participate only if their Global Assessment of Functioning (GAF), which is determined by the interviewer, is 51 or higher. The target parent was excluded based on a diagnosis of Bipolar Disorder I and Schizophrenia. Families were also excluded if their participating children/adolescents met K-SADS diagnostic criteria for current Depression, Substance Abuse, Conduct Disorder, Bipolar Disorder or Schizophrenia or were outside the 9-15 age range.

After participants met initial eligibility criteria from the phone screen, the identified parent with a current or lifetime diagnosis of depression and their children/adolescents were invited to come to the University of Vermont or Vanderbilt University for a baseline assessment. At this in-person assessment, graduate research assistants determined their final eligibility status. This assessment included a more in-depth SCID interview with the identified parent to determine if he or she had experienced an episode of depression during the lifetime of his or her participating child, and to rule out any parents who had Bipolar Disorder I and/or Schizophrenia. A research assistant also conducted a more in-depth K-SADS interview, first with the child/adolescent and then separately with the identified parent. Both child/adolescent and mother or father reports were used to rule out any children who met K-SADS criteria for current

Depression, Substance Abuse or Conduct Disorder in addition to lifetime Bipolar I Disorder or Schizophrenia.

The parent and child/adolescent completed on-line questionnaires within a week of their assessment. Mothers or fathers completed a battery of measures, including reporting on their current depressive symptoms, their ability to be mindful in the present moment and their parenting behaviors. Children/adolescents also completed on-line questionnaires that included measures about their perception of their mother's or father's parenting behaviors. If there was more than one child in the 9-15 year-old age range, all procedures were repeated for each child. The parent and each participating child were paid \$40 for completing the baseline assessment.

Measures

Demographic information.

Demographic information was collected for the parent as part of the SCID interview for DSM-IV Axis I disorders (SCID; First et al., 2001). Relevant demographic information included: gender, age, education level of the parent, parent ethnicity, and marital/domestic partner status. The marital status variable was originally coded as follows: 1 = married or living with someone as if married; 2 = widowed; 3 = divorced or annulled; 4 = separated; and 5 = never married. The scale was recoded as 0 = does not live with a partner in the home and 1 = lives with a partner in the home. When controlling for demographic variables in primary analyses, the parent ethnicity variable was recoded into 0 = ethnic minority and 1 = ethnic majority. Relevant demographic

information was also collected on each child as part of the K-SADS interview and included: child age and gender (K-SADS; Kaufman et al., 1997).

Structured Clinical Interview for DSM-IV Axis I disorders (SCID).

The SCID (First et al., 2001) was used to determine study eligibility and number of past depressive episodes of a parent. The SCID is a semi-structured psychiatric interview that is focused on diagnosis rather than symptomatology (First et al., 2001). Its organization is hierarchical with decision trees that guide when to terminate the administration of each module. Clinical interviewers score each question based on a 3 point scale: 1 (absent/false), 2 (subthreshold, e.g., the criteria is almost met), and 3 (threshold, e.g., the criteria has been met). In order to meet criteria for a diagnosis (e.g., depression), the participant must meet threshold criteria for 5 out of 9 symptoms, in addition to other diagnostic factors such as having impairment in occupational, social or family functioning.

In terms of reliability, research indicates high ($\kappa > .75 - > .85$) inter-rater reliability for current diagnoses (First et al., 2001) and moderate test-retest reliability (mean $\kappa = .61$) for current episodes with clinical participants (Williams et al., 1992). Kappa coefficients for non-clinical participants yielded more modest results (mean = .37), most likely because of fewer clinical diagnoses, and the international scope of the study that combined both German and English versions of the SCID (Williams et al., 1992). When focusing on reliabilities for lifetime disorders, studies reveal moderate test-retest reliabilities (Nunes et al., 1996; Williams et al., 1992). Please see Appendix A for more information on the validity of the SCID.

Severity of past depression.

When assessing for a history of past depression during the SCID diagnostic interview, interviewers asked mothers or fathers to report on their worst past depressive episode that occurred during the lifetime of his or her oldest participating child. Consistent with previous research (i.e., Brennan et al., 2000), severity of past depression was determined by summing the total number of depressive symptoms reported during the worst past depressive episode that occurred during the lifetime of the target parent's oldest participating child. In order to account for missing data, a mean score was calculated for participants who had at least two-thirds of their data. The mean was then transformed back to the original scale by multiplying the mean by nine, which is the number of possible depressive symptoms.

Beck Depression Inventory-II (BDI-II).

The number of current parental depressive symptoms was assessed with the Beck Depression Inventory-II (BDI-II; Beck, Steer & Brown 1996). The BDI-II is a standardized, self-report depressive symptom checklist that assesses the severity of depression “in adolescents and adults according to DSM-IV criteria for diagnosing depressive disorders” (Beck, Steer, Ball, & Ranieri, 1996, p. 589). Participants respond to 21 items and for each choose the statement that best describes the way they have been feeling in the last two weeks, including the present day. Statements range from 0 to 3 (e.g., “0 = I do not feel sad; 1 = I feel sad much of the time; 2 = I am sad all the time; 3 = I am so sad or unhappy that I can't stand it”). Scores are summed and higher scores reflect more depression. Research on the BDI has demonstrated excellent reliability, with

internal consistency of $\alpha = .91$ and test-retest reliability of $r = .93$ (Beck et al., 1996).

Previous research (e.g., Beck et al., 1996) has also determined adequate convergent and discriminant validity.

A total prorated score for the BDI-II was calculated to account for missing data. For participants who did not answer every item on the BDI-II, but filled out at least 75% of their BDI-II items, an average score per item was calculated and multiplied by 21 to obtain a total score. The alpha coefficient for the current sample was .92.

Mindfulness Attention and Awareness Scale (MAAS).

The MAAS is a 15 item instrument designed to assess mindfulness (Brown & Ryan, 2003). The MAAS is a scale that reflects a respondent's global experience of mindfulness in addition to specific daily experiences that include "...awareness of and attention to actions, interpersonal communication, thoughts, emotions, and physical states" (Brown & Ryan, 2003, p. 825). The MAAS was designed to capture the "central, subjective experience of mindfulness as present attention and awareness" (Brown & Ryan, 2003, p. 825). Participants indicate on a 6-point Likert scale from 1 (almost always) to 6 (almost never) how frequently they have the experience described in each statement (e.g., "I could be experiencing some emotion and not be conscious of it until some time later"). Statements reflect everyday experiences that draw from interpersonal, cognitive, emotional, physical and general domains. Higher scores reflect more mindfulness (see Appendix B for the MAAS measure). The MAAS has demonstrated good internal consistencies with alpha coefficients ranging from .82-.87 in samples of undergraduates (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006; Brown & Ryan,

2003), adults from a community sample (Brown & Ryan, 2003) and adults from a clinical sample (Carlson & Brown, 2005), as well as good test-retest reliabilities (Brown & Ryan, 2003). In addition, research reveals that the MAAS has convergent and discriminant validity (Baer et al., 2006; Brown & Ryan, 2003) as well as incremental validity (Vujanovic et al., 2007; Zvolensky et al., 2006). The reader is referred to Appendix C for extensive information on the reliability and validity of the MAAS.

A total prorated score for the MAAS was calculated to account for missing data. For participants who did not answer every item on the MAAS, but filled out at least 75% of the MAAS items, an average score per item was calculated and multiplied by 15 to obtain a total score. The alpha coefficient for the current sample was .90.

Alabama Parenting Questionnaire (APQ).

Parenting behaviors were assessed with the APQ (Shelton, Frick, & Wootton, 1996). The APQ is a measure that was designed to reflect the parenting practices most related to child disruptive behavior problems (Shelton et al., 1996). It was also created to assess these parenting practices from both the parent's and child's perspective. The APQ captures: parental involvement (e.g., "You have a friendly talk with your child"), positive parenting (e.g., "You let your child know when he/she is doing a good job with something"), poor monitoring/supervision (e.g., "Your child is out with friends you do not know"), inconsistent discipline (e.g., "You threaten to punish your child and then do not actually punish him/her"), and corporeal discipline (e.g., "You spank your child with your hand when he/she has done something wrong") (Shelton et al., 1996). Both parents and children complete the 39 item questionnaire. Items reflect the typical occurrence of

parenting behaviors in the home and parents and children rate each item on a 5 point frequency scale ranging from 1 (never) to 5 (always). The involvement scale is reverse scored to reflect withdrawn/disengaged parenting and the positive parenting scale is reverse scored to reflect low levels of positive parenting. Scores for each scale are summed and higher scores reflect more negative parenting.

Research on the APQ has demonstrated moderate to strong internal reliabilities for the APQ subscales, good test-retest reliability, good convergent and divergent validity (Dadds, Maujean, & Fraser, 2003; Shelton et al., 1996) as well as external validity (Dadds et al., 2003; Hawes & Dadds, 2006). Please see Appendix D for more information on the psychometric properties of the APQ.

Parent and child report on four of the five subscales of the APQ were used to assess four types of negative parenting in the current study. The corporeal discipline scale was not administered because prior research indicated low internal consistency (alpha coefficient was .46 for parent report and .44 for child report; Shelton et al., 1996).

In order to account for missing data, a prorated score for each of the four APQ subscales was calculated for parents and children separately. For participants who did not answer every item on the withdrawn/disengaged parenting and poor monitoring/supervision subscales, but filled out at least 75% of these APQ subscale items, an average score per item for each subscale was calculated and multiplied by 10 to obtain total subscale scores. For participants who did not answer every item on the low levels of positive parenting and inconsistent discipline subscales, but filled out at least 75% of these subscale items, an average score per item for each subscale was calculated

and multiplied by 6 to obtain total subscale scores. Subsequently, for each of four negative parenting scales, parent and child report was standardized and summed to form one score per scale. The internal consistency for each scale was as follows: withdrawn/disengaged parenting (child report $\alpha = .89$ and parent report $\alpha = .88$); low levels of positive parenting (child report $\alpha = .81$ and parent report $\alpha = .89$); poor monitoring/supervision (child report $\alpha = .82$ and parent report $\alpha = .75$); and inconsistent discipline (child report $\alpha = .72$ and parent report $\alpha = .81$).

Results

Preliminary Analyses

Differences between sites (Burlington, Vermont and Nashville, Tennessee) were examined initially and, as no systematic site effects emerged, this variable was not considered further. The mean, standard deviation and range for all the primary variables of interest are presented in Table 2. The correlation between each pair of the primary variables of interest is presented in Table 3.

Current depressive symptoms were significantly correlated with mindfulness, $r(113) = -0.28, p \leq .01$ and three of four parenting behaviors: low levels of positive parenting, $r(148) = 0.20, p \leq .05$; poor monitoring/supervision, $r(148) = 0.16, p \leq .05$; and inconsistent discipline, $r(148) = 0.26, p \leq .01$. Higher levels of depressive symptoms were related to lower levels of mindfulness and higher levels of all three parenting behaviors. The severity of past depression was not significantly correlated with mindfulness or any of the negative parenting behaviors. Mindfulness was significantly correlated with low levels of positive parenting, $r(147) = -0.23, p \leq .01$ and inconsistent discipline, $r(147) = -0.24, p \leq .01$: Lower levels of mindfulness were related to higher levels of both of these parenting behaviors. Note that the correlations where one of the two variables was a parenting variable should be viewed with caution as the inclusion of multiple children per family was not taken into account.

Correlations between demographic variables, mindfulness and the four negative parenting scales are presented in Table 4. Prior work suggests that an array of demographic variables may relate to either mindfulness or negative parenting (e.g.,

Table 2: Descriptive statistics for primary variables²

Variable	Mean	SD	Range
<i>Independent variables</i>			
1. Current depressive symptoms ^a	16.61	11.51	0-52.5
2. Past depression severity ^b	23.69	2.27	17-27
<i>Mediator</i>			
3. Mindfulness ^c	55.61	14.46	26-90
<i>Dependent variables –standardized parent and child report combined (Alabama Parenting Questionnaire)</i>			
4. Withdrawn/disengaged parenting ^d	-0.00	1.65	-2.97 - 6.40
5. Low levels of positive parenting ^e	0.02	1.50	-2.78 - 4.09
6. Poor monitoring/supervision ^f	-0.01	1.55	-2.48 - 5.98
7. Inconsistent discipline ^g	0.05	1.60	-2.80 - 4.22

² N ranged from 95-151 across measures.

^a Number of current depressive symptoms (Beck Depression Inventory), scale range 0-63

^b The maximum number of symptoms reported during the worst past depressive episode (SCID), scale range 9-27

^c Mindfulness Attention and Awareness Scale (MAAS), scale range 0-90

^d APQ Involvement scale (reverse scored)

^e APQ Positive Parenting (reverse scored)

^f APQ Poor Monitoring/Supervision scale

^g APQ Inconsistent Discipline scale

Table 3: Correlations between primary variables³

Variable	1.	2.	3.	4.	5.	6.	7.
1. Current depressive symptoms	--						
2. Past depression severity	0.10	--					
3. Mindfulness	-0.28**	0.10	--				
4. Withdrawn/disengaged parenting	0.04	-0.05	-0.13	--			
5. Low levels of positive parenting	0.20*	-0.07	-0.23**	0.78**	--		
6. Poor monitoring/supervision	0.16*	0.07	-0.10	0.26**	0.23**	--	
7. Inconsistent discipline	0.26**	0.09	-0.24**	0.08	0.11	0.52**	--

³ N ranged from 89-151 across measures.

* $p \leq .05$; ** $p \leq .01$

Table 4: Correlations of demographic variables with mindfulness (n = 114), withdrawn/disengaged parenting (WD) (n=151), low levels of positive parenting (LPP) (n=150), poor monitoring/supervision (PM/S) (n=150), and inconsistent discipline (ID) (n=150).

Variable	Mindfulness	WD	LPP	PM/S	ID
Parent gender ^a	-0.04	-0.04**	-0.20*	-0.10	0.13
Parent age ^b	0.06	-0.02	-0.12	0.20*	0.03
Parent lives with partner ^c	-0.04	0.05	0.07	-0.16*	-0.25**
Parent education level ^d	-0.20	-0.04	0.00	-0.10	-0.10
Parent ethnicity ^e	-0.04	0.50**	0.38**	-0.02	-0.12
Child gender ^{a, f}	--	-0.05	-0.09	-0.07	0.08
Child age ^{b, f}	--	0.21**	0.14	-0.40**	0.20*

* $p \leq .05$; ** $p \leq .01$

^a male = 0; female = 1

^b measured in years

^c does not live with a partner in the home = 0; lives with partner in the home = 1

^d parent education level

Less than high school = 1

High school graduate = 2

Some college = 3

College degree = 4

Graduate education = 5

^e ethnic minority = 0; ethnic majority = 1

^f correlation of child gender and child age with mindfulness was not relevant

Buehler, Benson, & Gerard, 2006; Chilcoat et al., 1996; Cummings & Davies, 1993; Dumas & Serketich, 1994; Lovejoy et al., 2000; Luthar & Sexton, 2007; Patterson & Stouthamer-Loeber, 1984; Sagrestano et al., 2003); therefore, it was important to determine where any demographic variables assessed in this study related to the constructs of interest. When significant relationships were identified between demographic variables and either mindfulness or negative parenting behaviors, these variables were controlled so that the demographic variable was not potentially accounting for any relationships which emerged between the primary variables being examined. The correlations with the negative parenting scales include the full study sample (i.e., the target parent and all their children).

Results indicate that parent gender and parent ethnicity were significantly correlated with withdrawn/disengaged parenting and low levels of positive parenting. Parent age was significantly correlated with poor monitoring/supervision and whether or not the target parent had a partner living in the home was significantly correlated with poor monitoring/supervision and inconsistent discipline. Child age was significantly correlated with withdrawn/disengaged parenting, poor monitoring/supervision and inconsistent discipline. Thus, these demographic variables were included in subsequent primary analyses when a negative parenting scale served as the dependent variable.

When mindfulness served as an outcome variable, a partial sample was used because parents' report of the current number of depressive symptoms and current level of mindfulness does not need to take the number of children in the family into account. No demographic variables were significantly correlated with mindfulness.

Last, preliminary analyses were conducted to determine if current depression or current dysthymia (n=30) versus no current depression or current dysthymia (n=84) were significantly related to the parenting variables, and as a consequence, needed to be controlled for in the primary analyses. Significant correlations did not emerge and therefore this variable was not considered further.

Data Analytic Approach for Primary Analyses

Two types of analyses were conducted. In order to account for the fact that some families had multiple children (ages 9-15) in the same family, a Linear Mixed Models Analysis was used in SPSS to examine multiple measurements of parenting on different children in the same family. This type of analysis was used when negative parenting served as the dependent variable and either past depression severity, parental depressive symptoms and/or mindfulness served as the independent variable(s). Linear Mixed Models Analysis uses an iterative process to estimate parameters of the specified model. A repeated measures model was fit with multiple measures of parenting based on the parent's report of his/her parenting practices for each child. There are no fixed between-subject effects, only covariates. The model accounts for the assumed correlations between measurements on children in the same family and assumes a compound symmetry covariance structure to control for the fact that parents' reports of children in the same family covary. Thus, this nested structure accounts for inter-family correlations (A. Howard, personal communication, March 15, 2007).

The second type of analysis used multiple regression to examine relationships between primary variables that did not take multiple measurements of children in the

same family into account. This type of analysis was used when mindfulness served as the dependent variable and past depression severity and parental depressive symptoms served as the independent variable.

Primary Analyses

Severity of past depressive symptoms and negative parenting

In order to examine the first hypothesis, the severity of past depression will be related to three negative parenting behaviors (withdrawn/disengaged parenting, low levels of positive parenting and poor monitoring/supervision), three separate regression equations using Linear Mixed Models Analysis were conducted. In the first Linear Mixed Models Analysis, the covariates (parent gender, ethnicity, and child age) as well as past depressive symptom severity were entered into the model with withdrawn/disengaged parenting serving as the dependent variable. As reported in Table 5 (Tables 5-18 are presented on pages 79 to 82 at the end of the Results section), the association between two of the demographic variables, parent gender and ethnicity, and withdrawn/disengaged parenting were not significant. The association between child age and withdrawn/disengaged parenting was significant, $B = 0.11, p \leq .05$. As child age increased, parents' withdrawn/disengaged parenting behaviors increased. The association between the primary variable of interest, severity of past depression, and withdrawn/disengaged parenting, was not significant.

When low levels of positive parenting served as the dependent variable, the association between parent gender and the outcome variable was not significant; however, the association of parent ethnicity and low levels of positive parenting was

significant, $B = 0.02$, $p \leq .05$ (see Table 6 on page 79). Caucasian parents reported lower levels of positive parenting than parents who were of ethnic minority. The association between parents' past depressive symptom severity and low levels of positive parenting was not statistically significant after controlling for the demographic variables.

When poor monitoring/supervision served as the dependent variable, the association between parent age and poor monitoring/supervision was not significant. Cohabitation status was significantly associated with poor monitoring/supervision, $B = -0.56$, $p \leq .05$. Parents' report of greater poor monitoring/supervision was associated with not having a partner living in the home. Child age also was significantly associated with poor monitoring/supervision, $B = 0.32$, $p \leq .01$ (see Table 7 on page 79). As child age increased, parents' poor monitoring/supervision behaviors increased. Past depression severity was not significantly associated with poor monitoring/supervision.

Although no hypothesis was offered for inconsistent discipline, the relationship between past depression severity and this parenting behavior was examined. Parent cohabitation status was not significantly associated with inconsistent discipline. Child age was significantly associated with inconsistent discipline, $B = 0.15$, $p \leq .01$ (see Table 8 on page 80). As child age increased, parents' inconsistent discipline increased. Past depression severity was not significantly associated with inconsistent discipline after controlling for demographic variables.

In summary, no support was found for the association of past depression severity and negative parenting behaviors.

Current depressive symptoms and negative parenting

In order to examine the second hypothesis, the number of current depressive symptoms will be related to withdrawn/disengaged parenting, low levels of positive parenting, poor monitoring/supervision and inconsistent discipline, four separate regression equations using Linear Mixed Models Analysis were conducted. In the first Linear Mixed Models Analysis with withdrawn/disengaged parenting as the dependent variable, the covariates, parent gender and ethnicity and child age, and current parental depressive symptoms were entered into the model. As reported in Table 9 (page 80), the association between parent gender and withdrawn/disengaged parenting was significant, $B = -0.97, p \leq .01$. Fathers were more likely to use withdrawn/disengaged parenting behaviors than mothers. The association between parents' ethnicity and withdrawn/disengaged parenting was also significant, $B = 0.02, p \leq .01$, which indicated that Caucasian parents were more likely to use withdrawn/disengaged parenting behaviors. Child age and withdrawn/disengaged parenting was also significantly associated, $B = 0.12, p \leq .05$, indicating that as child age increased, parents' withdrawn/disengaged parenting behaviors increased. Of primary importance, however, the association between parents' current depressive symptoms and withdrawn/disengaged parenting was not statistically significant.

In the second Linear Mixed Models Analysis with low levels of positive parenting serving as the dependent variable, the covariates, parent gender and ethnicity, and current parental depressive symptoms were entered into the model. As reported in Table 10 (page 80), the association between parent ethnicity and low levels of positive parenting

was statistically significant, $B = 0.02$, $p \leq .01$. Caucasian parents were more likely to use low levels of positive parenting behaviors. The association between parents' gender and low levels of positive parenting was not significant. Of primary importance, the association between parents' depressive symptoms and low levels of positive parenting was statistically significant, $B = 0.02$, $p \leq .05$ after controlling for the demographic variables. As parents' depressive symptoms increased, they reported lower levels of positive parenting behaviors.

In the third Linear Mixed Models Analysis with poor monitoring/supervision serving as the dependent variable, the covariates, parent age and cohabitation, and child age, as well as current parental depressive symptoms were entered into the model. As reported in Table 11 (page 81), the associations between parent age and poor monitoring/supervision and parent cohabitation and poor monitoring/supervision were not statistically significant. The association between child age and poor monitoring/supervision was statistically significant, $B = 0.31$, $p \leq .01$. As child age increased, parents' poor monitoring/supervision behaviors increased. Of primary importance, the association between parents' depressive symptoms and poor monitoring/supervision was not statistically significant after controlling for the demographic variables.

In the fourth Linear Mixed Models Analysis with inconsistent discipline serving as the dependent variable, the covariates, parent cohabitation and child age, and current parental depressive symptoms were entered into the model. As reported in Table 12 (page 81), the association between parent cohabitation and inconsistent discipline was not

statistically significant. The association between child age and inconsistent discipline was statistically significant, $B = 0.16$, $p \leq .05$, indicating that as child age increased, parents' inconsistent discipline behaviors increased. Current depressive symptoms were also significantly associated with inconsistent discipline, $B = 0.03$, $p \leq .05$, indicating that as parents' depressive symptoms increased, their inconsistent discipline increased.

In summary, partial support was found for the association of current depressive symptoms and negative parenting. Significant relations emerged between the independent variable and low levels of positive parenting and inconsistent discipline, but not between the independent variable and withdrawn/disengaged parenting and poor monitoring/supervision.

Mindfulness as a mediator

In the third and fourth hypotheses, mindfulness was examined as a mediator between past depression severity (hypothesis 3) or current depressive symptoms (hypothesis 4) and each of the four negative parenting scales. Using Baron and Kenny's (1986) regression approach for testing mediation, the associations of parents' past depression severity or current depressive symptoms with mindfulness (first criterion for mediation) and negative parenting (e.g., withdrawn/disengaged parenting, low levels of positive parenting, poor monitoring/supervision and inconsistent discipline) (second criterion for mediation) were examined. The associations of mindfulness with each of the four negative parenting behaviors (third criterion for mediation) were examined next. Finally, whether the relationship between past depression severity or current depressive symptoms and each of the four negative parenting behaviors was reduced when

mindfulness was entered into the Linear Mixed Models Analysis (fourth criteria for mediation) was tested. This series of steps allowed the examination of the extent to which mindfulness mediated the relationship between past depressive symptom severity and negative parenting. The steps to test for mediation were followed in the order indicated by Baron and Kenny (1986), although the test of the first two hypotheses indicated past depression severity was not related to any of the four negative parenting variables and current depressive symptoms were related to only two of the four negative parenting behaviors.

Parents' past depression severity and mindfulness

Consistent with Baron and Kenny's (1986) first criterion for mediation, the relationship between the proposed independent variable and mediator variable was examined. Mindfulness served as the dependent variable and parents' past depressive symptom severity was entered as the independent variable. As shown in Table 13 (page 81), parents' past depressive symptom severity was not a significant predictor of mindfulness, $B = 0.68$, $p = ns$. As the first criterion for mediation was not satisfied, support was not found for mindfulness mediating the relationship between past depressive symptom severity and negative parenting.

Parents' current depressive symptoms and mindfulness

Consistent with Baron and Kenny's (1986) first criterion for mediation, the relationship between the proposed independent variable and mediator variable was examined. Mindfulness served as the dependent variable and parents' depressive symptoms were entered as the independent variable. As shown in Table 14 (page 81),

parents' depressive symptoms were a significant predictor of mindfulness, $B = -0.36$, $p \leq .01$, satisfying the first criterion for mediation. As the number of parental current depressive symptoms increased, parents' report of their level of mindfulness decreased.

Parents' current depressive symptoms and negative parenting

Consistent with Baron and Kenny's (1986) second criteria for mediation, the association between the independent variable (parents' current depressive symptoms) and dependent variable (negative parenting) was examined next. As previously determined in hypothesis two, parents' current depressive symptoms were not significantly associated with withdrawn/disengaged parenting or poor monitoring/supervision (see Tables 9 and 11 on pages 80 and 81). The association between parents' current depressive symptoms and low levels of positive parenting, and current depressive symptoms and inconsistent discipline, however, were significant (see Tables 10 and 12 on pages 80 and 81), which satisfied the second criterion for mediation. Therefore, further analyses testing for mediation were only conducted with low levels of positive parenting and inconsistent discipline serving as the dependent variables.

Mindfulness and low levels of positive parenting

The third criterion for Baron and Kenny's (1986) mediation is satisfied if the proposed mediator, mindfulness, is significantly associated with the outcome, low levels of positive parenting. As reported in Table 15 (page 82), the association between parent gender and low levels of positive parenting was not statistically significant but the association between parent ethnicity and low levels of positive parenting was significant, $B = 0.02$, $p \leq .01$. Caucasian parents were more likely to report low levels of positive

parenting than parents who were of ethnic minority. Of importance, the association between mindfulness and low levels of positive parenting was statistically significant, $B = -0.02$, $p \leq .01$, indicating that as parents reported lower levels of mindfulness, they reported lower levels of positive parenting. The significant association satisfied the third requirement for mediation.

Mindfulness and inconsistent discipline

In addition to low levels of positive parenting, the association between mindfulness and inconsistent discipline was examined when controlling for the demographic variables, parent cohabitation and child age. As reported in Table 16 (page 82), the association between parent cohabitation and inconsistent discipline was statistically significant, $B = -0.66$, $p \leq .05$. Parents without a partner in the home reported more inconsistent discipline. Additionally, the association between child age and inconsistent discipline was statistically significant, $B = 0.16$, $p \leq .01$; as child age increased, parents reported more inconsistent discipline. Of importance, the association between mindfulness and inconsistent discipline was also statistically significant, $B = -0.03$, $p \leq .01$, indicating that parents who reported lower levels of mindfulness reported more inconsistent discipline. The significant association satisfied the third requirement for mediation.

Mediating role of mindfulness in the association of current depressive symptoms and low levels of positive parenting

With the first three steps of mediation satisfied, the fourth step required that the initial link between parents' current depressive symptoms and low levels of positive

parenting became non-significant when mindfulness was entered into the model. Both mindfulness and current parental depression were entered in the regression analyses reported in Table 17 (page 82). The beta weight was reduced from 0.02 ($p < .05$) when only parents' depressive symptoms were entered (Table 10, page 80) to 0.01 ($p = ns$) (Table 17, page 82) when mindfulness and current parental depressive symptoms were entered. In order to conduct a more rigorous test of the indirect effect of parental depressive symptoms on negative parenting via mindfulness, a Sobel test was conducted (MacKinnon & Dwyer, 1993). The Sobel test indicated that the indirect effect approached the traditional level for statistical significance, $t = 1.87$, $p = .06$, and provided evidence for mindfulness as a mediator in the relationship between current parental depressive symptoms and low levels of positive parenting behaviors. The findings for mediation are summarized pictorially in Figure 6.

Mediating role of mindfulness in the association of current depressive symptoms and inconsistent discipline

In order to determine whether mindfulness mediated the relationship between current depressive symptoms and inconsistent discipline, the initial link between parents' current depressive symptoms and inconsistent discipline must be reduced when mindfulness was entered into the model. The beta weight was reduced from 0.03 ($p < .05$)

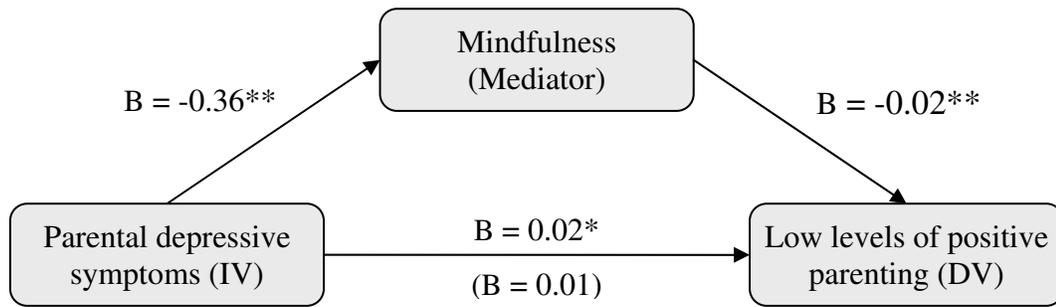


Figure 6: The association between current parental depressive symptoms, mindfulness and low levels of positive parenting. The association between current parental depressive symptoms and low levels of positive parenting without accounting for mindfulness is shown above the line and with accounting for mindfulness is shown below the line.

when only parents' current depressive symptoms were entered (Table 12, page 81) to 0.02 ($p=ns$) (Table 18, page 82) when mindfulness and current parental depressive symptoms were entered. The Sobel test (MacKinnon & Dwyer, 1993) indicated that the indirect effect was statistically significant, $t=2.01$, $p<.05$, and provided evidence for mindfulness as a mediator in the relationship between current parental depressive symptoms and inconsistent discipline. The findings for mediation are summarized pictorially in Figure 7.

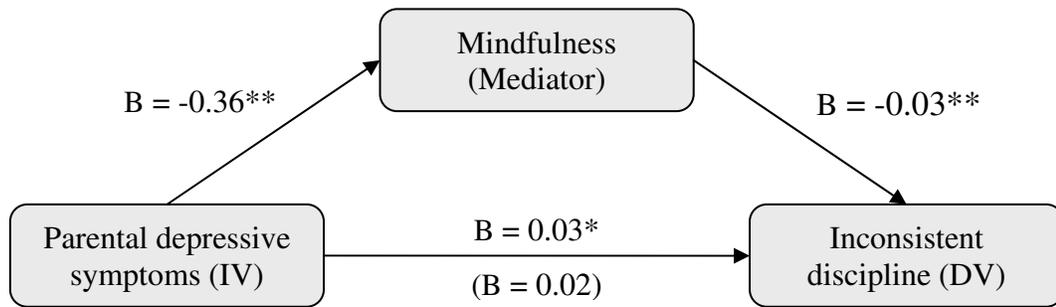


Figure 7: The association between current parental depressive symptoms, mindfulness and inconsistent discipline. The association between current parental depressive symptoms and inconsistent discipline without accounting for mindfulness is shown above the line and with accounting for mindfulness is shown below the line.

Table 5: Linear Mixed Models Analysis where demographic variables and past depressive symptom severity served as independent variables and withdrawn/disengaged parenting served as the dependent variable.

Standardized withdrawn/disengaged parenting (dependent variable)				
Blocks	B	SE	<i>t</i>	p\leq
1. Parent gender	-0.76	0.42	-1.81	ns
Parent ethnicity	0.01	0.01	1.75	ns
Child age	0.11	0.06	2.00	.05
2. Past depressive symptom severity	-0.02	0.06	-0.30	ns

Table 6: Linear Mixed Models Analysis where demographic variables and past depressive symptom severity served as independent variables and low levels of positive parenting served as the dependent variable.

Standardized low levels of positive parenting (dependent variable)				
Blocks	B	SE	<i>t</i>	p\leq
1. Parent gender	-0.17	0.41	-0.41	ns
Parent ethnicity	0.02	0.01	2.60	.05
2. Past depressive symptom severity	-0.03	0.06	-0.57	ns

Table 7: Linear Mixed Models Analysis where demographic variables and past depressive symptom severity served as independent variables and poor monitoring/supervision served as the dependent variable.

Standardized poor monitoring/supervision (dependent variable)				
Blocks	B	SE	<i>t</i>	p\leq
1. Parent age	0.00	0.02	-0.00	ns
Parent cohabitation	-0.56	0.27	-2.07	.05
Child age	0.32	0.07	4.68	.01
2. Past depressive symptom severity	0.02	0.06	0.26	ns

Table 8: Linear Mixed Models Analysis where demographic variables and past depressive symptom severity served as independent variables and inconsistent discipline served as the dependent variable.

Standardized inconsistent discipline (dependent variable)				
Blocks	B	SE	<i>t</i>	p\leq
1. Parent cohabitation	-0.62	0.32	-1.93	ns
Child age	0.15	0.06	2.44	.01
2. Past depressive symptom severity	0.07	0.06	1.14	ns

Table 9: Linear Mixed Models Analysis where demographic variables and current parental depressive symptoms served as independent variables and withdrawn/disengaged parenting served as the dependent variable.

Standardized withdrawn/disengaged parenting (dependent variable)				
Blocks	B	SE	<i>t</i>	p\leq
1. Parent gender	-0.97	0.36	-2.66	.01
Parent ethnicity	0.02	0.01	3.52	.01
Child age	0.12	0.05	2.29	.05
2. Current parent depressive symptoms	0.01	0.01	0.54	ns

Table 10: Linear Mixed Models Analysis where demographic variables and current parental depressive symptoms served as independent variables and low levels of positive parenting served as the dependent variable.

Standardized low levels of positive parenting (dependent variable)				
Blocks	B	SE	<i>t</i>	p\leq
1. Parent gender	-0.42	0.32	-1.28	ns
Parent ethnicity	0.02	0.01	3.85	.01
2. Current parent depressive symptoms	0.02	0.01	2.09	.05

Table 11: Linear Mixed Models Analysis where demographic variables and current parental depressive symptoms served as independent variables and poor monitoring/supervision served as the dependent variable.

Standardized poor monitoring/supervision (dependent variable)				
Blocks	B	SE	<i>t</i>	p\leq
1. Parent age	0.01	0.09	0.79	ns
Parent cohabitation	-0.44	0.27	-1.61	ns
Child age	0.31	0.06	5.11	.01
2. Current parent depressive symptoms	0.02	0.01	1.69	ns

Table 12: Linear Mixed Models Analysis where demographic variables and current parental depressive symptoms served as independent variables and inconsistent discipline served as the dependent variable.

Standardized inconsistent discipline (dependent variable)				
Blocks	B	SE	<i>t</i>	p\leq
1. Parent cohabitation	-0.56	0.30	-1.83	ns
Child age	0.16	0.05	3.07	.05
2. Current parent depressive symptoms	0.03	0.01	2.39	.05

Table 13: Regression analysis where past depressive symptom severity served as the independent variables and mindfulness served as the dependent variable.

Mindfulness (dependent variable)				
Block	B	SE	<i>t</i>	p\leq
1. Past parental depressive symptom severity	0.68	0.66	1.03	ns

Table 14: Regression analysis where current parental depressive symptoms served as the independent variables and mindfulness served as the dependent variable.

Mindfulness (dependent variable)				
Block	B	SE	<i>t</i>	p\leq
1. Parental depressive symptoms	-0.36	0.11	-3.15	.01

Table 15: Linear Mixed Models Analysis where demographic variables and mindfulness served as independent variables and low levels of positive parenting served as the dependent variable.

Standardized low levels of positive parenting (dependent variable)				
Blocks	B	SE	<i>t</i>	p\leq
1. Parent gender	-0.51	0.33	-1.59	ns
Parent ethnicity	0.02	0.01	3.81	.01
2. Mindfulness	-0.02	0.01	-2.83	.01

Table 16: Linear Mixed Models Analysis where demographic variables and mindfulness served as independent variables and inconsistent discipline served as the dependent variable.

Standardized inconsistent discipline (dependent variable)				
Blocks	B	SE	<i>t</i>	p\leq
1. Parent cohabitation	-0.66	0.30	-2.21	.05
Child age	0.16	0.05	3.12	.01
2. Mindfulness	-0.03	0.01	-2.59	.01

Table 17: Linear Mixed Models Analysis where demographic variables, mindfulness and current parental depressive symptoms served as independent variables and low levels of positive parenting served as the dependent variable.

Standardized low levels of positive parenting (dependent variable)				
Blocks	B	SE	<i>t</i>	p\leq
1. Parent gender	-0.47	0.32	-1.49	ns
Parent ethnicity	0.02	0.01	3.89	.01
2. Mindfulness	-0.02	0.01	-2.34	.05
3. Parental depressive symptoms	0.01	0.10	1.40	ns

Table 18: Linear Mixed Models Analysis where demographic variables, mindfulness and current parental depressive symptoms served as independent variables and inconsistent discipline served as the dependent variable.

Standardized inconsistent discipline (dependent variable)				
Blocks	B	SE	<i>t</i>	p\leq
1. Parent cohabitation	-0.57	0.30	-1.89	ns
Child age	0.16	0.05	3.12	.01
2. Mindfulness	-0.02	0.01	-2.02	.05
3. Parental depressive symptoms	0.02	0.01	1.73	ns

Discussion

Depression is a widespread mental illness whose symptoms likely recur over time and can have lasting effects on individuals and their family members (Langrock et al., 2002). In particular, parent depression, as well as parental depressive symptoms, potentially can interfere with numerous aspects of parents' lives, including parenting behaviors. The overall findings of this study indicate that parents' current depressive symptoms, but not severity of past depression, increase the risk of low levels of positive parenting and parenting with greater inconsistent discipline, and these associations are partially mediated by a parent's level of mindfulness.

More specifically, the current study was designed to extend past parenting research by examining mindfulness as an explanatory mechanism for the relationship between two independent variables, past parental depression severity and current parental depressive symptoms, and four dependent variables that reflect negative parenting: withdrawn/disengaged parenting, low levels of positive parenting, poor monitoring/supervision, and inconsistent discipline. Mindfulness, operationalized primarily as attention and awareness (Brown & Ryan, 2003), has been identified in the developmental (e.g., Goldsmith & Rogoff, 1997) and psychological (Dumas, 2005; Singh et al., 2006) literatures as potentially important for increasing and maintaining effective parenting behaviors that are associated with positive child outcomes.

In order to examine mindfulness as a mediator in the context of parental depression and negative parenting, this study relied on previous research and theory to guide its four research questions:

- 1) Is past parental depression severity associated with negative parenting behaviors?;
- 2) Are current parental depressive symptoms associated with negative parenting behaviors?;
- 3) Does mindfulness mediate the relationship between past parental depression severity and negative parenting behaviors?; and
- 4) Does mindfulness mediate the relationship between current parental depressive symptoms and negative parenting behaviors?

As discussed in further detail below, past parental depressive severity was not associated with negative parenting behaviors (hypothesis one) which precluded the exploration of mindfulness as a mediator in this relationship (hypothesis three). Current depressive symptoms were, however, associated with several of the negative parenting behaviors (hypothesis two) and mindfulness did mediate the relationship between two of the four specified parenting behaviors: low levels of positive parenting and inconsistent discipline (hypothesis four).

A discussion of the results begins with hypothesis one, followed by hypothesis two. Within the context of hypothesis two, hypothesis four is then discussed as it provides one explanation for the findings for low levels of positive parenting and inconsistent discipline in hypothesis two. The discussion turns back to describing several explanations for why in hypothesis two, current depressive symptoms were not significantly associated with withdrawn/disengaged parenting and poor monitoring/supervision. As already noted, it was not possible to test hypothesis three

(that mindfulness would mediate the relationship between past depression severity and negative parenting) because there was no evidence for hypothesis one (past depression severity was not associated with negative parenting behaviors).

In the first research hypothesis, it was predicted that past depression severity would be associated with three parenting variables: withdrawn/disengaged parenting, low levels of positive parenting, and poor monitoring/supervision. Results did not support this hypothesis and are inconsistent with findings in prior studies that parental past depression predicts deficits in parenting behaviors (i.e., Chilcoat et al., 1996; Gordon et al., 1989; Jaser, 2005; Lovejoy et al., 2000; Tarullo et al., 1994).

One possible explanation for the current findings is that previous research typically has examined presence versus absence of a past diagnosis of depression (e.g., Gordon et al., 1989; Lovejoy et al., 2000). In contrast, the current study used the severity of the caregiver's worst past depressive episode as Brennan and colleagues (2000) have proposed that this dimension of depression is important for parenting. The focus in the current study on the severity of past depression, rather than presence or absence of a depressive episode, occurred because only parents with previous or current depression were included in this study. The discrepancy between prior use of presence versus absence of past depression and this study's use of past depression severity may account for the inconsistency between the findings of this study and previous research.

A second explanation is that there may not have been sufficient variability in the past depression severity variable to predict the three negative parenting variables. The standard deviation for past depression severity was approximately one-fifth the size of the

standard deviation for current depressive symptoms (2.27 versus 11.51, see Table 2), which did predict some measures of negative parenting. Finally, as suggested by the findings, it may be that current depressive symptoms rather than the severity of past depression are a more salient risk factor for these negative parenting behaviors.

After parents are no longer in a major depressive episode, negative parenting behavior continues (Hammen & Brennan, 2002; Langrock et al., 2002; Lovejoy et al., 2000), indicating that parenting difficulties persist even when previously depressed parents are in remission (Lovejoy et al., 2000; Seifer et al., 2001). This research, which provides a rationale for examining the second research hypothesis, suggests that lingering sub-threshold depressive symptoms may play an important role in negative parenting behaviors.

There was partial support for the second hypothesis (i.e., current depressive symptoms will be significantly associated with four parenting variables) as associations emerged between current depressive symptoms and lower levels of positive parenting and higher levels of inconsistent discipline. The results from two mediation analyses testing hypothesis four provide one explanation for these findings: mindfulness is a variable that partially explains the relationship between current depressive symptoms and each of these two types of negative parenting behaviors (low levels of positive parenting and inconsistent discipline). More specifically, higher levels of current depressive symptoms are associated with lower levels of mindfulness, which, in turn, is associated with less positive parenting and more inconsistent discipline.

To explain how mindfulness serves as a mediator, each link in the chain of current depressive symptoms—mindfulness—negative parenting behaviors needs to be examined. The first link in this chain of relationships (i.e., current depressive symptoms are significantly correlated with mindfulness) is consistent with previous research that has identified a significant relationship between depression and mindfulness (Brown & Ryan, 2003). This relationship may be explained by the ruminative aspects of depressive thinking that preclude a parent’s ability to focus attention and awareness on the present, which are key components of mindfulness. The second link in the chain (i.e., mindfulness predicts low levels of positive parenting and inconsistent discipline) is consistent with Dumas’ (2005) conceptualization that lower levels of mindfulness are associated with negative parenting. Dumas proposed that automatic or mindless patterns become problematic when they serve to maintain negative parenting behaviors whose “scripted quality” is highly resistant to change (Dumas, 2005, p. 781). Thus, the automatic quality of mindlessness facilitates negative parenting behaviors that have become well-entrenched patterns of responding over time. In particular, attentional deficits or mindlessness may be critical factors that interfere with parents’ abilities to express positive parenting behaviors (e.g., warmth) because depressed parents can not decenter from negative thoughts or feelings long enough to praise or respond lovingly to their child’s bid for attention. Parental attentional deficits may also increase parents’ levels of emotional reactivity that inhibit their abilities to make decisions about appropriate discipline and confront their children around misbehavior, resulting in the use of inconsistent disciplinary practices (Hill & Herman-Stahl, 2002).

Although mindfulness does appear to be one mechanism that explains the relationship between current depressive symptoms and low levels of positive parenting and inconsistent discipline, it is important to note that the magnitude of the relationship between current depressive symptoms and these negative parenting behaviors *and* the magnitude of the reduction in this relationship when mindfulness is taken into account is modest at best. This finding suggests two conclusions. First, current depressive symptoms, although significant, are only one of the many potential contributors to parenting. Previous research has identified a number of predictors of parenting including the following: chronic stress (Gordon et al., 1989); parental negative cognitions (Christensen, Phillips, Glasgow, & Johnson, 1983); parental negative appraisals of their children (Griest et al., 1979); parental physical health (Goodman & Gotlib, 1999; Teti et al., 1990); parents' use of substances (Dishion, Reid, & Patterson, 1988); marital conflict (Emery, Weintraub & Neale, 1982); familial isolation (Pellegrini et al., 1986); living in impoverished communities (e.g., Birtchnell, Masters & Deahl, 1988); and having contacts with mentally and emotionally disturbed friends and neighbors (Zahn-Waxler, Denham, Ianotti, & Cummings; 1992; Zahn-Waxler, Ianotti, Cummings, & Denham, 1990). Consideration of current depressive symptoms in the context of these other variables could inform the literature about the relative role of current depressive symptoms for parenting. The second conclusion is that mindfulness is one of numerous possible explanatory variables for the relationship between parental depressive symptoms and negative parenting. Mediational variables other than mindfulness should be considered, including parents' self-esteem and sense of effectiveness (Cumming &

Davies, 1994), parental tolerance, and negative judgments parents make about their children (Gordon et al., 1989).

Returning to hypothesis two (i.e., current depressive symptoms would predict four negative parenting behaviors), results indicated that while current depressive symptoms were associated with lower levels of positive parenting and higher levels of inconsistent discipline, they were not associated with either withdrawn/disengaged parenting or poor monitoring/supervision. The discrepancy between these findings and prior research is likely due to two factors: parenting behaviors that are important for different age children and different measurement methods utilized. For example, the hypothesis that current depressive symptoms would relate to withdrawn/disengaged parenting was based primarily on a literature generated with mothers and infants and toddlers (e.g., Cox et al., 1987; Field et al., 1990; Goodman & Brumley, 1990). In addition, withdrawn/disengaged parenting has been operationalized and measured in a substantially different way in that literature: much of that literature has used observational coding systems to capture withdrawn/disengaged parenting behaviors. Specifically, Field and colleagues (1990) defined disengaged parenting as when a mother was not interacting with her infant and was neutral in affect. Disengagement also included the various ways a mother was uninvolved with her infant, including leaning back, looking away and passively watching her infant (Field et al., 1990). In the one investigation that has studied older children and adolescents, Jaser (2005) found that maternal depressive symptoms were not significantly associated with observed withdrawn/disengaged behaviors but were associated with mother and child report of

these parenting behaviors. One possible explanation for the discrepancy between the findings of the current study and Jaser (2005) (i.e., different results emerged across the two studies for questionnaire reported withdrawn/disengaged parenting), is that parenting assessed by questionnaires in Jaser's study relied on parent and child reported levels of stress related to maternal intrusive and withdrawn behaviors rather than using a specific parenting measure, like the Alabama Parenting Questionnaire, that captures withdrawn/disengaged parenting behaviors more directly.

Based on the existing literature, the hypothesis that current depressive symptoms would relate to poor monitoring/supervision had the weakest support in the literature of the four associations proposed between depressive symptoms and negative parenting behaviors in hypothesis two. Only two studies have examined this relationship (Chilcoat et al., 1996; Forehand et al., 1986) and the focus of these studies was monitoring and supervision of 3 to 9 year olds (Forehand et al., 1986) and 8-11 year olds (Chilcoat et al., 1996). Although supervision of young children and monitoring of older children and teens have some similar characteristics in that the monitoring/supervision function serves to stimulate parents' awareness of and concern about their children's activities (e.g., see Dishion & McMahon, 1998 for a review), there may be important differences that impact parenting because of the different parenting responsibilities at different ages. The difference in the skills (specifically regarding tracking and structuring) required for effective parenting with the two ages of children (3-9 year olds versus 9-15 year olds) may account for the discrepancy between the earlier Forehand and colleagues' (1986) study and the current study. In addition to differences in child age, Chilcoat and

colleagues (1996) relied on maternal report only of parental monitoring and supervision whereas this study relied on both parent and child report of parental supervision and monitoring. This incongruity also may account for the difference in findings between Chilcoat and colleagues (1996) and this study.

There are a number of limitations of this study that warrant discussion. The results of this cross-sectional research do not allow for the temporal ordering of variables and therefore preclude causal conclusions. The sample also primarily consisted of Caucasian mothers and their children, which limits the generalizability of the findings to a sample that more accurately represents the diversity in American society. In addition, there were limitations with regard to how missing data were handled. In order to account for missing data for the primary variables of interest (i.e., past depression severity, current depressive symptoms, mindfulness, and the negative parenting variables), prorated scores were calculated for participants who filled out at least 75% of the items on each measure. Accounting for missing data in this way could have reduced power and biased the results as participants who completed all measures could have differed from those who did not. Future analyses would benefit from using other methods for treating missing data such as multiple imputation and the Full Information Maximum Likelihood procedures.

Another limitation is that the current study did not include the measurement of a negative parenting behavior that has been found to be associated with parent depression or depressive symptoms in multiple studies: critical/hostile parenting behaviors (Jaser, 2005; Lovejoy et al., 2000). For example, Gordon and colleagues (1989) found that

mothers with unipolar depression were significantly more likely to be critical and hostile towards their children (ages 8-16 years) than “control” mothers. In addition, mother’s current mood significantly predicted maternal hostile and critical remarks. These findings suggest that it is important to include critical/hostile parenting, as well as the other negative parenting behaviors that were examined in the current study.

There were important changes to two primary variables that necessitate discussion. In the original study conception, it was proposed to examine the total duration of the depressive episodes a parent experienced during the lifetime of his/her oldest participating child. Such information was hypothesized to provide a measure of the amount of exposure to negative parenting a child had experienced. Due to a limited number of participants who reported on the duration of their depressive episodes (n=59), as well as the questionable accuracy of that information, the maximum number of depressive symptoms during the parent’s worst depressive episode (that occurred during the lifetime of his or her oldest child) was instead used as an indicator of past depression severity. Duration of depressive episodes may have been a more sensitive measure and yielded significant findings, which failed to emerge using severity of symptoms in the worst depressive episode.

In addition to the measurement change for assessing past depression severity, the Alabama Parenting Questionnaire (APQ) was used in lieu of observational codes to measure negative parenting. The initial analytic plan was to examine negative parenting behaviors coded during a parent-child interaction, which was a component of the initial assessment in the Raising Healthy Children project. Due to the time and labor intensive

nature of coding, only 58 out of 167 videotaped parent-child interactions were coded at the time analyses were conducted. As a result of limited coded data, the four APQ parenting scales were used to measure negative parenting. Previous research has examined the relationship of the APQ with direct observations of parenting behaviors in parent-child interactions and found that the parent's report on the APQ was significantly correlated with concurrent observations of harsh/aversive parenting behavior and parents' use of praise (Hawes & Dadds, 2006). Additionally, in the current study, there was preliminary evidence for significant correlations between the observational parenting codes and the self-reported APQ subscales (see Appendix D, page 134). These results provide evidence for the convergent validity of the APQ as well as other studies that have assessed the psychometric properties of the APQ (Dadds et al., 2003; Shelton, et al., 1996) and provide the rationale for using the APQ to assess parenting in this study. Nevertheless, different findings may have emerged with the use of observationally coded parenting behaviors.

Beyond limitations with the independent variable (past depression severity) and dependent variables (the change in how negative parenting was measured), the mindfulness construct is also limited by the fact that it is unidimensional and relies on self-report. While any measure is limited because it can only sample a part of the specific construct of interest (Kazdin, 1995), researchers have argued that the MAAS, as a global measure with a unidimensional factor structure, only samples one aspect of mindfulness (Baer et al., 2006). Investigators have argued that factors such as "observation, undivided attention, a non-judgmental stance and perhaps others" are

important components of mindfulness not captured by the MAAS (Baer, Smith, & Allen, 2004, p.202). Conceptualizing mindfulness in multi-dimensional ways would enable a more complex understanding of how all the relevant factors of mindfulness relate to other variables of interest (Baer et al., 2006). Additionally, the MAAS relied on parents' self-report. As mentioned earlier, mindfulness may have qualities that are automatic and beyond conscious awareness (Dumas, 2005); therefore, participants would have difficulties reporting on these aspects of mindfulness (Zvolensky et al., 2005).

Despite the stated limitations, there are several strengths of this study that merit discussion. First, the focus on 9-15 year-old children contributes to the literature since much of the existing research on parental depression and parenting behaviors has been conducted with younger children, including infants. Second, this study employed multiple reporters (both child and parent report) of the negative parenting behaviors, which decreased the possibility of common "reporter" variance as would have occurred if only parents reported on their parenting. Third, the sample drew from two geographically diverse locations, Burlington, Vermont and Nashville, Tennessee, and was sufficient in size to provide power for the proposed models. Fourth, this study examined the relationship between current depressive symptoms and two specific parenting behaviors, poor monitoring/supervision and inconsistent discipline, which have not been extensively studied in the context of parental depressive symptoms. Last, this study was unique in that it identified mindfulness as a mechanism underlying the relationship between current depressive symptoms and two parenting behaviors, low levels of positive parenting and inconsistent discipline.

Implications

In terms of implications for research and clinical applications, future research in the area of parental depression and parenting behaviors should include more fathers as well as children in middle and late childhood/early adolescence as the majority of the depression and parenting literatures have focused on mothers and their infants and toddlers. In order to capture the extent of negative parenting to which a child has been potentially exposed in his or her lifetime, future research could examine the total duration of a parent's past depressive episodes. Critical/hostile parenting could be also examined in the context of parental depressive symptoms and mindfulness as this parenting behavior has been identified as an important correlate of negative parenting. Future studies could also use observational codes to measure negative parenting behaviors as this more objective method could yield differing results than those found in this study.

In order for the field to progress scientifically in the area of mindfulness, future research would benefit from developing a theoretically and empirically sound operational definition of the construct with the aim of creating instruments for measurement (Bishop et al., 2004). The field also needs to develop other measures, beyond those of self-report, to capture the multi-dimensional facets of mindfulness. In addition, identifying possible mechanisms of mindfulness would further clarify its active or essential ingredients. With this basic foundation, the field will continue to build upon the important applied work of Kabat-Zinn (1982), Segal and colleagues (2002) and others.

Although the results from this study should be used with caution when making recommendations for practical applications, the finding that mindfulness partially

mediates the relationship between current depressive symptoms and negative parenting behaviors has some potential implications for psychological interventions. As noted earlier in the discussion section, even though there were significant results that provided evidence for mindfulness as a mediator in the relationship between current depressive symptoms and two of the four parenting variables (low levels of positive parenting and inconsistent discipline), the effect sizes for these analyses were small in magnitude. However, mindfulness-based practices have been linked with reductions in subsequent depressive episodes in individuals with three or more depressive episodes (Ma & Teasdale, 2004; Teasdale et al., 2000). In addition, mindfulness has been proposed as a link to reductions in negative parenting and coercive parent-child interactions (Dumas, 2005). Therefore adding a mindfulness-based component to parent training programs that are conducted with parents who have a chronic history of depression could be a potentially potent intervention for both reducing depressive relapse rates and negative parenting behaviors.

Specifically, mindfulness-based interventions could be useful for targeting parental depression and negative parenting. Such an approach may be particularly useful for parents with a history of depression who over time may be vulnerable to depressive relapse when experiencing dysphoric moods. Depression has been conceptualized, in part, as a “disorder of affect regulation and control” (Cummings & Davies, 1994, p.77). Greater emotion regulation may be one beneficial outcome of mindfulness-based practices whereby individuals are exposed to their own internal experiences of unwanted emotions, thoughts and physical sensations that arise into awareness during mindfulness

practices. When previously depressed parents learn the skill of decentering from negative experiences that are activated by sad moods, they may be effective in observing their thoughts, feelings and bodily sensations non-judgmentally. Such an approach is believed to mitigate the escalation of negative thoughts into patterns of rumination (Baer, 2003), which could prevent a recurrent, depressive episode. Thus, mindfulness-based interventions serve to expose and extinguish avoidance to fearful or intolerable feelings and interrupt the internal, autonomous, ruminative depressogenic thinking patterns that accompany dysphoric moods during vulnerable periods of potential relapse.

The expression of emotion, for the most part, is not a conscious choice (Damasio, 1994; Wegner & Bargh, 1998). For parents with depression, the automatic communication of depressive mood may have detrimental effects on family interactions broadly, and parenting behaviors specifically. Once these well-established parenting behaviors and parent-child interactions become entrenched, they may be difficult to change. Mindfulness, with its qualities of attention and awareness, may be a novel and useful way to help parents who may be resistant to changing their negative parenting behaviors and ways of relating with their children (Dumas, 2005).

Specifically, if parents were taught to become more aware of their negative feelings and thoughts during vulnerable times (e.g., while in dysphoric moods), they could potentially shift their attention away from their internal distress. This shift in attention affords parents a way of responding and coping more compassionately to their own needs (Rocheleau, 2002). In turn, relating to internal experiences non-judgmentally would potentially help parents parent more effectively and respond to the needs of their

children by providing greater responsiveness, consistency, empathy, warmth and acceptance. Such parenting strategies could prevent the development of child psychopathology.

As with any intervention, it is important to be mindful of the science necessary to demonstrate for whom a mindfulness intervention will be effective. For example, empirical evidence suggests that mindfulness-based cognitive therapy for depressive relapse is effective for preventing depressive relapse in individuals with three or more depressive episodes. It has been proposed that individuals with two or fewer depressive episodes have not suffered from depression long enough to have the necessary motivation required to develop and sustain a mindfulness practice (Z. Segal, personal communication, August 3, 2007). While the findings from this study present a compelling theoretical and empirical rationale for developing a mindfulness-based parenting program for parents with a history of depression, new clinical applications should proceed with scientific caution and mindful attention to clinical experience combined with empirical evidence.

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Appendices

Appendix A: Validity studies of the SCID

There have been relatively few concurrent validity studies of the SCID, most likely because of the SCID's close association with the DSM-III-R and DSM-IV (First, Spitzer, Gibbon, & Williams, 2001). Studies examining concurrent validity have used Spitzer's (1983) Longitudinal Expert Evaluation using All Data (LEAD) model, which combines clinically relevant data to determine composite diagnoses. Concurrent validity studies reveal that there is a high level of agreement ($\kappa = .83$) between SCID mood and schizophrenic disorder diagnoses and LEAD composite diagnoses made by psychiatrists (Maziade et al., 1992). Additionally, SCID diagnoses of major depression appear to be in close accord with LEAD diagnoses of depression and have moderate agreement with CIDI diagnoses (Booth, Kirchner, Hamilton, Harrell, & Smith, 1998). Other studies have looked at the concurrent validity of newer diagnostic measures while using the SCID. For example, a study that compared the computerized DIS (C-DIS) to the SCID in a sample of substance abusers found moderate levels of agreement for substance abuse disorders (mean $\kappa = .56$). For mood and anxiety disorders, however, there was poor agreement (mean $\kappa = .22$; Ross, Swinson, Larkin, & Doumani, 1994). Sheehan and colleagues (1997) obtained moderate kappas between the MINI and SCID for 15 current disorders (median = $.67$) and 7 lifetime disorders (median = $.73$).

Convergent validity studies of the SCID, specifically for depression disorders, have used the receiver operating characteristics (ROC) analysis (Stuckenberg, Dura, &

Kiecolt-Glaser, 1990). Results from Stuckenberg and colleagues (1990) reveal that the Hamilton Depression Rating Scale (HDRS; Hamilton, 1960) and the Beck Depression Inventory (BDI; Beck et al., 1961) can identify SCID depression and dysthymia diagnoses. Additionally, for substance abuse disorders, Kranzler, Kadden, Babor, Tennen and Rounsaville (1996) found solid evidence for four SCID substance abuse diagnoses and several scales on the Addiction Severity Index (ASI; McLellan et al., 1992).

Appendix B: Mindfulness Attention and Awareness Scale (MAAS)

Day-to-Day Experiences

(MAAS)

Instructions: Below is a collection of statements about your everyday experience. Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be. Please treat each item separately from every other item.

- 1= Almost Always
- 2= Very frequently
- 3= Somewhat Frequently
- 4= Somewhat Infrequently
- 5= Very Infrequently
- 6= Almost Never

I could be experiencing some emotion and not be conscious of it until some time later.	1	2	3	4	5	6
I break or spill things because of carelessness, not paying attention, or thinking of something else.	1	2	3	4	5	6
I find it difficult to stay focused on what's happening in the present.	1	2	3	4	5	6
I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.	1	2	3	4	5	6
I tend not to notice feelings of physical tension or discomfort until they really grab my attention.	1	2	3	4	5	6
I forget a person's name almost as soon as I've been told it for the first time.	1	2	3	4	5	6
It seems I am "running on automatic," without much awareness of what I am doing.	1	2	3	4	5	6
I rush through activities without being really attentive to them.	1	2	3	4	5	6
I get so focused on the goal I want to achieve that I lose touch						

with what I'm doing right now to get there.	1	2	3	4	5	6
I do jobs or tasks automatically, without being aware of what I'm doing.	1	2	3	4	5	6
I find myself listening to someone with one ear, doing something else at the same time.	1	2	3	4	5	6
I drive places on "automatic pilot" and then wonder why I went there.	1	2	3	4	5	6
I find myself preoccupied with the future or the past.	1	2	3	4	5	6
I find myself doing things without paying attention.	1	2	3	4	5	6
I snack without being aware that I'm eating.	1	2	3	4	5	6

Appendix C: Psychometric properties of the MAAS

In their seminal article on the theoretical background and empirical research on mindfulness and its role in psychological well-being, Brown and Ryan (2003) discuss the creation of the MAAS, a dispositional measure of mindfulness, and its psychometric properties. In addition, Brown and Ryan (2003) present five studies involving laboratory, quasi-experimental and correlational research. The following discussion describes each of the five studies and provides scientific legitimacy for the MAAS.

Internal consistency of the MAAS based on a student sample of 327 undergraduates revealed an alpha of .82. The sample alpha was .87 in a community sample (n = 239) of adults, ages 18 to 77 years. Another sample of 60 undergraduate students in an introduction to psychology course was used to assess the test-retest reliability and agreement of the MAAS. A variance components analysis procedure using SAS PROC MIXED revealed an intraclass correlation of .81. Additionally, MAAS scores from Time 1 assessment were compared to MAAS scores from Time 2 assessment and the mean scale scores were not significantly different (Brown & Ryan, 2003).

Brown and Ryan: Study 1

In Study 1 of the MAAS, Brown and Ryan (2003) proposed three goals. The first aimed to determine the convergent and discriminant validity of the MAAS. Brown and Ryan (2003) hypothesized that the MAAS would positively relate to constructs like emotional intelligence that tap into openness of experience and clear awareness. They anticipated moderate convergence with the only other mindfulness measure that had been developed at the time, Bodner and Langer's (2001) mindfulness-mindlessness scale.

They also predicted null findings with scales that tap into reflexive consciousness (e.g., the inclination to self-reflect, self-examine and introspect), like public self-consciousness and self-monitoring, as well as absorption.

Their second goal proposed to examine how the MAAS related to a variety of measures of well-being in the cognitive, emotional, motivational and physical areas of functioning. In addition, they evaluated the incremental validity of the MAAS. Brown and Ryan (2003) predicted that the MAAS would be related to a variety of well-being indicators, but that it would also maintain its distinctness as a construct after controlling for the effects of related constructs.

In their third aim, Brown and Ryan (2003) proposed to “test the differential utility of the MAAS” in order to justify the MAAS’ indirect-item approach (p. 827). More specifically, during the original scale construction of the MAAS, item raters noted that it was easy, if incorrect, to state that one is aware and attentive. Therefore, items that indirectly reflect mindfulness may be more “diagnostic” than direct endorsements of mindfulness (Brown & Ryan, 2003, p. 826). In order to determine whether the MAAS, as measured with an indirect approach is equivalent to an alternative, direct measurement approach, the authors examined the magnitude of the correlations between these two approaches. They additionally looked at the convergent, discriminant and criterion validity of the indirect and alternative scales.

Findings from Convergent and Discriminant Scales

Study 1 of the MAAS used a total of six samples ($n = 1,253$) that included students in undergraduate psychology courses from two separate universities and adults

from a Northeastern community in the U.S. Among the findings, the MAAS was significantly correlated with the Trait Meta Mood Scale (TMMS; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995), a measure of emotional intelligence, in three samples (.46, .42, .37). The MAAS was positively correlated with the NEO Personality Inventory (NEO-PI) Openness to Experience in one sample (.18) and the NEO Five Factor Inventory (NEO-FFI; Costa & McCrae, 1992) Openness to Experience in two samples (.12, .19). As expected, the MAAS was significantly correlated with the mindfulness-mindlessness scale (MMS) in two samples (.31, .33). The MMS scale assesses four components of mindfulness: Cognitive flexibility, Novelty Seeking, Novelty Producing and Engagement. The MAAS was most strongly correlated with the Engagement Scale, and to a lesser degree, the Novelty Seeking and Producing Scales, but was uncorrelated with the Cognitive flexibility scale, which supports Brown and Ryan's (2003) theory that mindfulness is distinct from Langer's formulation which stresses mindfulness as "active cognitive operations on perceptual inputs from the external environment" (Brown & Ryan, 2003, p. 823).

As previously theorized, the MAAS was expected to show little or no correlation with measures that use cognitive processes for self-examination or self-reflection. As expected, the MAAS showed no correlation with Private Self-Consciousness in four samples (.03, .03, .05, -.05), no correlation with Self-Monitoring in one sample (-.03) and no correlation with the Rumination-Reflection Questionnaire (RRQ; Trapnell & Campell, 1999) in one sample (.06). There were significant negative correlations with the Public

Self-Consciousness scale in two samples (-.14, -.15) and Social Anxiety scales in four samples (-.36, -.19, -.33, -.29), as predicted.

Findings from the Well-being Scales

With respect to well-being scales, the MAAS was most strongly and inversely related to the NEO-PI Neuroticism scale in one sample (-.56) and the following related subscales of the NEO-PI Neuroticism measure: Depression (-.53), Angry Hostility (-.41), Self-Consciousness (-.45), Anxiety (-.34), Impulsiveness (-.29) and Vulnerability (-.47). The MAAS was also inversely related to depression as measured by the CES-D in one sample (-.37) and BDI (-.41, -.42) in two samples, the STAI Anxiety measure (-.40) in one sample and the POMS measures of anxiety in two samples (-.26, -.42). Participants who scored higher on the MAAS also reported higher levels of self-esteem, as measured by the Multi-dimensional Self-Esteem Inventory in one sample (.36) and Rosenberg scale in two samples (.39, .50). The MAAS was also associated with higher levels of subjective vitality in three samples (.40, .35, .46) and self-actualization in one sample (.43). The MAAS was also inversely related to self-reported physical symptoms in two samples (-.25, -.51), somatization (-.40, -.42) and medical visit frequency over the past 21 days in one sample (-.32). Furthermore, incremental validity of the MAAS was assessed and all correlations between the MAAS and the variables of well-being remained significant after controlling for each examined covariate (Brown & Ryan, 2003). Consistent with their predictions, the patterns of correlations previously discussed support the convergent and discriminatory validity of the MAAS. Furthermore, the incremental validity results indicate that the MAAS scale taps into a unique construct.

Direct and Indirect Measures of Mindfulness

In order to address aim 3 of Study 1, Brown and Ryan (2003) created a direct measure of mindfulness by rephrasing 13 of the 15 items of the MAAS. For example, question 3 on the MAAS, “I find it difficult to stay focused on what’s happening in the present,” changed to “I find it easy to stay focused on what’s happening in the present” (Brown & Ryan, 2003, p. 831). The internal consistency of the MAAS re-phrased was .81. The revised direct scale and original MAAS scale were significantly correlated (.70), providing evidence that both scales measure mindfulness. In order to determine comparative validity, correlations between the two scales and other measures were examined using 145 university undergraduates. All correlations demonstrated that the indirect measure of the MAAS as well as the direct measure had similar relationships to the measures used to determine convergent and discriminant validity (Brown & Ryan, 2003). On measures assessing criterion validity, both scales demonstrated the same direction of effect; however, the MAAS had stronger relations in the expected directions.

Brown and Ryan: Study 2

Study 2 of Brown and Ryan (2003) focused on assessing group differences in mindfulness. Researchers hypothesized that the MAAS would distinguish community adults from individuals engaged in mindfulness practices designed to increase awareness and attention. A sample of Rochester, New York Zen practitioners (n=50) were matched in gender and age to adults (n=50) in the Rochester community. All participants completed the MAAS. In addition, Zen practitioners answered questions about the amount of time spent meditating per day as well as the number of years practiced. Forty-

two of the 50 Zen practitioners had a current meditation practice. There was a significant difference between MAAS scale scores of the Zen group and community group, $t(98) = 2.45$, $p < .05$; Cohen's $d = .50$. In the Zen group, the amount of time spent in mindfulness practice was unrelated to MAAS scores; however, the number of years practiced was positively related to mindfulness scores, $r = .36$, $p < .05$. These findings suggest that the MAAS is a sensitive enough measure to detect individual differences in mindfulness and that higher scores on the MAAS reflect mindfulness training. Furthermore, these findings suggest that the MAAS is not only useful for measuring every day states of mindfulness, but can be used in clinical settings where mindfulness skills are taught (Brown & Ryan, 2003). Study 5 will discuss further the effects of mindfulness training on well-being in a clinical population of cancer patients.

Brown and Ryan: Study 3

The findings from Study 3 provide laboratory-based evidence for the MAAS' construct validity (Brown & Ryan, 2003). Self-awareness is a central component of mindfulness and more mindful people are thought to possess heightened awareness and attention to internal physical and psychological states than less mindful people (Brown & Ryan, 2003). Greater attention and awareness thus leads to the capacity for more effective self-regulation (Schwartz, 1984). In Study 3, Brown and Ryan (2003) examined whether the MAAS is correlated with increased self-awareness in relation to well-being using "awareness of implicit emotional states as a model" (p. 833). Implicit processes are automatic, unconscious and become activated without conscious volition (Bargh, 1997) versus explicit processes which are facilitated by conscious action. Wilson, Lindsey and

Schooler (2000) among others, have discussed how and whether it is possible for people to generate awareness around implicit processes. Assessing concordance between implicit and explicit measures would be one way of measuring such awareness (Brown & Ryan, 2003). Research on this topic has yielded variable associations; thus, individual and situational differences have been proposed to moderate the observation of concordance (Brown & Ryan, 2003). Brown and Ryan (2003) examined whether the MAAS predicted concordance between explicit and implicit affect, as affect is a core component of the relationship between mindfulness and subjective well-being. The investigators hypothesized that individuals with higher MAAS scores would demonstrate a closer relationship between implicit and explicit affect than those with lower MAAS scores. The Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998) was used to measure implicit associations between affective states and self (Brown & Ryan, 2003). Evidence for automatic associations would be determined if respondents created faster categorizations of self and pleasant affect words than self and unpleasant affect words. In order to investigate explicit associations, the MAAS and a self-report measure of affective states were used. Findings revealed that respondents created faster associations between self and pleasant affect words than self and negative affect words. On the explicit test, individuals rated their current affect as more pleasant than unpleasant. Across respondents, however, there was no relationship between implicit and explicit affect scores. When mindfulness was examined as a moderator in the relationship between implicit and explicit affect, respondents with higher levels of mindfulness demonstrated a stronger relationship between implicit and explicit affect

than those who were less mindful. These results provide further evidence for the construct validity of the MAAS and suggest that individuals with greater levels of mindfulness may be more in tune with their implicit emotions, which is reflected in their explicit descriptions of their self (Brown & Ryan, 2003). Furthermore, the cultivation of mindfulness, specifically attention and awareness, may facilitate psychological well-being (Brown & Ryan, 2003).

Brown and Ryan: Study 4

In order to examine if the MAAS captures day-to-day life experiences, rather than a one-time indicator of mindfulness, Brown and Ryan (2003) compared a state and trait measure of the MAAS. In Study 4, Brown and Ryan (2003) used an experience sampling method that enabled participants to record their responses several times per day over the course of several weeks. When participants were signaled by a pager at random times during the day, they recorded their emotional state and the extent to which their activity was self-regulated versus controlled. It was hypothesized that over time, the MAAS would predict higher levels of emotional well-being as well as more autonomous behavior (this was considered to be trait mindfulness; Brown & Ryan, 2003). As both emotional states and autonomous behaviors vary over time, Brown and Ryan (2003) also hypothesized that state mindfulness (i.e., momentary mindfulness) would be associated with emotional well-being and autonomous behavior at the same time. In addition, it was hypothesized that trait mindfulness would predict emotional well-being, autonomous behavior and state mindfulness. The original MAAS questionnaire served as the measure for trait mindfulness. A state mindfulness measure was created by scoring the following

five items from the original MAAS (3, 8, 10, 13 and 14; see Appendix B). In addition to the abbreviated version of the MAAS, participants completed two questions: “What were you MAINLY doing at the time of the [pager] signal?” and “To what degree were you having these experiences?” (Brown & Ryan, 2003, p. 837).

A community sample (n=74) and undergraduate sample (n=92) completed the MAAS before the experience sampling phase of the experiment. In addition to psychological measures, participants completed the experience sampling recordings three times a day on a quasi-random schedule for a series of consecutive days. When a participant received a signal from a pager, responses were recorded. Findings revealed that trait mindfulness predicted more autonomous activity in daily life and lower levels of negative affect. Trait mindfulness, however, did not predict pleasant affect. State mindfulness was associated with higher levels of autonomy, more frequent and intense pleasant affect and less frequent and less intense unpleasant affect. Brown and Ryan (2003) hypothesized that state mindfulness may have had a greater impact than trait mindfulness because of its “temporal proximity” to the studied variables (p. 839). In addition, the state and trait measures of mindfulness were related: “Being momentarily mindful was more likely among those who had the disposition, lending further support to the validity of the MAAS” (Brown & Ryan, 2003, p. 839).

Brown and Ryan: Study 5

In a sample of early-stage breast and prostate cancer patients, Brown and Ryan examined whether changes in MAAS scores, before and after a Mindfulness-Based Stress Reduction (MBSR) intervention, were associated with changes in mood disturbance,

stress and adjustment (Brown & Ryan, 2003). In order to assess whether the MAAS could validly predict well-being outcomes in a clinical sample, investigators hypothesized that changes in mindfulness (as measured by the MAAS) would predict changes in stress and emotional well-being.

A total of 41 cancer patients completed measures of psychological well-being in addition to the eight week MBSR course. Results revealed that both before and after the MBSR intervention, higher levels of mindfulness were related to lower levels of mood disturbance and less stress. Furthermore, changes in mindfulness (i.e., an increase) over the MBSR course predicted a decrease in mood disturbance and stress. These results provide evidence for the predictive validity of the MAAS.

Other Validity Studies

In a more recent study that examined the construct and criterion validity of the MAAS in a clinical population, Carlson and Brown (2005) used a sample of cancer patients (n=122) with matched community members as controls (n=122). Cancer patients who were enrolled in an MBSR course filled out the MAAS and other measures of stress and mood. Community members were matched to cancer patients on gender, level of education and age and completed the same set of measures.

First, Carlson and Brown (2005) compared the factor structure of the MAAS and its internal consistency among cancer patients with community controls to explore construct validity. In their second study on the criterion validity of the MAAS, they compared the ability of the MAAS to predict stress and negative moods among cancer patients and their matched controls. Across both clinical and non-clinical samples,

Carlson and Brown (2005) expected that an invariant factor structure would emerge, that there would be high internal consistency and that the MAAS would be related to higher well-being.

Across both samples, exploratory factor analysis (EFA) using the principle-factors method revealed that the MAAS has a single-factor structure. The internal consistency of the MAAS was .87 in both the clinical and non-clinical samples. In their tests of criterion validity of the MAAS, responses from clinical and non-clinical samples revealed that higher MAAS scores were correlated with lower mood states (as measured by the Profile of Mood States, POMS, questionnaire) and stress (as measured by the Symptoms of Stress Inventory, SOSI). These findings suggest that in both clinical as well as non-clinical populations, lower levels of mindfulness may partly account for lower levels of psychological health and wellness. Obviously, longitudinal research that examines the bi-directionality of mindfulness and well-being using other clinical samples is needed. These results, however, lend further support for the construct and criterion validity of the MAAS.

Baer and colleagues (2006) more recently examined the internal consistency and convergent and discriminant validity of the MAAS in a sample of 613 undergraduate students. Consistent with Brown and Ryan's (2003) research, the MAAS had good internal consistency ($\alpha = .86$). In terms of convergent and discriminant correlations between the MAAS and other variables, all relationships were in the predicted directions. The MAAS was significantly positively correlated with the NEO-PI Openness to experience scale (.23), Emotional intelligence as measured by the Trait Meta-Mood Scale

(Salovey et al., 1995) (.22) and Self-compassion (Self Compassion Scale; Neff, 2003a) (.36). The MAAS was significantly negatively correlated with psychological symptoms on the Brief Symptom Inventory (Derogatis, 1992) (-.41), the NEO-PI Neuroticism scale (Costa & McCrae, 1992) (-.41), Thought suppression as measured by the White Bear Suppression Inventory (Wegner & Zanakos, 1994) (-.32), the Difficulties in Emotion Regulation Scale (Gratz & Roemer, 2004) (-.34), the Toronto Alexithymia Scale (Bagby, Taylor, & Parker, 1993) (-.24), the Scale of Dissociative Activities (Mayer & Farmer, 2003) (-.53), Experiential avoidance as measured by the Acceptance and Action Questionnaire (Hayes et al., in press) (-.32) and Absent-mindedness as measured by the Cognitive Failures Questionnaire (Broadbent, Cooper, Fitzgerald, & Parks, 1982) (-.54). In terms of discriminant validity, the MAAS was expectedly unrelated to the NEO-PI Extraversion scale (-.08, $p > .05$).

Appendix D: Alabama Parenting Questionnaire (APQ)

In its inception, the APQ was designed to reflect the parenting practices most related to child disruptive behavior problems (Shelton et al., 1996). It was also created to assess these parenting practices from both the parent's and child's perspective. The APQ captures: parental involvement (e.g., "You have a friendly talk with your child"), positive parenting (e.g., You let your child know when he/she is doing a good job with something"), poor monitoring/supervision (e.g., "Your child is out with friends you do not know"), inconsistent discipline (e.g., You threaten to punish your child and then do not actually punish him/her"), and corporeal discipline (e.g., You spank your child with your hand when he/she has done something wrong") (Shelton et al., 1996). Both parents and children complete the 42 item questionnaire. Items reflect the typical occurrence of parenting behaviors in the home and parents and children rate each item on a 5 point frequency scale ranging from 1 (never) to 5 (always).

In a clinic referred sample of families with children ages 6-13 (n=124) and a community sample of families with children (n=36) comparable to the clinic group on age and gender of child, parental marital status and family ethnicity, reliability studies of the APQ revealed that the corporeal punishment subscale had poor internal consistency across both parent and child reports. In the parent sample, internal consistencies of the Involvement and Positive parenting subscales were .80. For the Poor Monitoring/Supervision and Inconsistent Discipline subscale the internal consistencies were .67. For the child report, the internal consistencies were as follows: Involvement (mother) ($\alpha = .72$); Positive parenting ($\alpha = .74$); Poor Monitoring/Supervision ($\alpha = .69$);

and Inconsistent Discipline ($\alpha = .56$). When examining the temporal stability of the parenting measure across time (using the interview version of the APQ versus the self-report version), the APQ demonstrated moderate to high consistencies with both parent (range of .66 to .89) and child reports (range of .70 to .87).

In a test of convergent validity across informants, the Involvement, $r = .23$, $p < .01$, and Positive Parenting, $r = .25$, $p < .01$, subscales yielded significant correlations; however, the Poor Monitoring/Supervision, $r = .08$, $p > .05$, and Inconsistent Discipline, $r = .10$, $p > .05$, subscales did not. In a test of divergent validity, results revealed good divergent validity for the Poor Monitoring/Supervision, Inconsistent Discipline and Corporal Punishment subscale, but not the two positive parenting subscales for both the parent and child reports.

In order to determine if parents and children were responding in a socially desirable way, the APQ scales were correlated with the K-Scale of the Minnesota Multiphasic Personality Inventory-Second Edition (MMPI-2; Hathaway & McKinley, 1989) for parents and the Lie Scale of the Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1985). For most scales, results suggest that parents and children were not responding in socially desirable ways with the exception of the Inconsistent Discipline report by parents and the Involvement report by children. Last, parent report on the APQ, but not child, differentiated families of children with Disruptive Behavior Problems from families of children from normal controls, providing further evidence for the validity of the APQ.

In another study assessing the psychometric properties of the APQ, Dadds and colleagues (2003) found moderate to strong internal reliabilities for the APQ subscales, with Poor Monitoring/Supervision and Inconsistent Discipline yielding the lowest alphas ($\alpha = .59, .73$) respectively. Similarly to Shelton and colleagues (1996), investigators determined that the APQ demonstrated good test-retest reliability across a two week time period as well as good convergent and divergent validity. Dadds and colleagues (2003) found evidence for the external validity of the APQ by examining the correlations between the APQ subscales and the Conduct Problems subscale of the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997) and the Behavioral Inhibition Scale (Frick, 2001), which were significant. Furthermore, parents' responses spanned the full range of scores, indicating that parents' were not responding in a socially desirable way (Dadds et al., 2003).

Building on previous research that assessed the psychometric properties of the APQ, Hawes and Dadds (2006) examined the external validity of the APQ against direct observations of parenting behaviors in parent-child interactions. The study sample consisted of parents and boys with conduct problems who were participating in a parent training intervention. The internal reliability for the Inconsistent Discipline subscale (parent report) was .80. As predicted, the parent's report on the APQ was significantly correlated with concurrent observations of harsh/aversive parenting behavior and parents' use of praise, providing evidence for the convergent validity of the APQ. In addition, there was a change in pre and post intervention APQ scores that was associated with clinical child outcomes (Hawes & Dadds, 2006).

Finally, in preliminary analyses in the current study, correlations between 58 parent-child interactions and the combined parent and child completed APQ subscales were examined. Parent-child videotaped interactions occurred during the initial assessment of the Raising Healthy Children study. Parents and children completed two 15 minute interactions. In the first interaction, parents and their child discussed a pleasant activity they had done together recently. Then, they discussed a recent stressful time in their family when mom or dad was feeling depressed, down, irritable or grouchy and it made it hard for the family. The current project only used data from the second interaction task.

The correlations between the four APQ subscales (parent and child reports combined) and the four parenting codes were as follows: 1) the APQ involvement subscale and the involvement code was 0.46 ($p < .05$); 2) the APQ positive parenting subscale and the positive parenting code was 0.45 ($p < .05$); 3) the APQ poor monitoring/supervision subscale and poor monitoring/supervision code was 0.50 ($p < .05$); and 4) the APQ inconsistent discipline subscale and inconsistent discipline was 0.53 ($p < .05$).