The Dissertation Committee for Jennifer Dawn Ragan certifies that this is the approved version of the following dissertation:

Excessive Reassurance-Seeking, Interpersonal Rejection, Rejection Sensitivity and Depressive Symptoms: An Intervention Focusing on Mediating Mechanisms

Committee:

Charles J. Holahan, Co-Supervisor

Michael J. Telch, Co-Supervisor

William B. Swann

James W. Pennebaker

Stephanie S. Rude

Excessive Reassurance-Seeking, Interpersonal Rejection, Rejection Sensitivity and Depressive Symptoms: An Intervention Focusing on Mediating Mechanisms

by

Jennifer Dawn Ragan, B.S.

Dissertation

Presented to the Faculty of the Graduate School of

The University of Texas at Austin

in Partial Fulfillment

of the Requirements

for the Degree of

Doctor of Philosophy

The University of Texas at Austin

August, 2005

Acknowledgements

I wish to give thanks to my advisors, Josh Holahan and Michael Telch. They supported me in taking on this ambitious project and never doubted my ability to see it to completion, even when I doubted myself. I have learned an immense amount from them, and they have helped to shape the researcher and clinician I am today. Throughout my graduate career, Josh often spoke of the elegance of a carefully crafted study and challenged me to carefully define the psychological constructs and theories I was attempting to research. He balanced his guidance with a respect for my own ideas and gave me the freedom to shape a graduate career for myself that has fulfilled my goals in every way imaginable. I will forever be grateful for his sharp intellect, his trust in my abilities, and his support. Mike introduced me to the treatment of anxiety and mood disorders and to clinical trial research, which became my passions. Through teaching and clinical supervision, he imparted on me new knowledge and skills that enabled me to facilitate the growth of my clients and dissertation participants. These clinical and research experiences have brought me tremendous joy and satisfaction. Because of his guidance, I feel prepared to embark on the next step in my career at Massachusetts General Hospital.

I would also like to express my appreciation to my committee members for their contributions to this project: Bill Swann, Jamie Pennebaker, and Stephanie Rude. And of course, I would like to acknowledge my family and friends, including my parents, my sister, Mark Powers, Kristin Alyea, Marie Moerkbak, David Ing, Kate Wolitzky, Martita

Lopez, and Jasper Smits, my statistics consultant. They tolerated engaging with me in countless conversations about this project and convinced me that I could be successful, even when I felt like quitting.

Finally, I would like to thank the participants in my study. Through telling me their stories, they taught me the true nature of depression and helped me understand what the world looks like through their eyes. They have made me a better clinician and a better researcher and I hope to disseminate the knowledge I gained from them, so that other clients with similar problems can benefit from knowing of their experiences.

Excessive Reassurance-Seeking, Interpersonal Rejection, Rejection Sensitivity and Depressive Symptoms: An Intervention Focusing on Mediating Mechanisms

Publication No. _____

Jennifer Dawn Ragan, Ph.D.

The University of Texas at Austin, 2005

Supervisors: Charles J. Holahan and Michael J. Telch

Abstract: The current study sought to experimentally test an established interpersonal theory of depression and a new cognitive-behavioral theory of depression. Coyne's interpersonal theory suggests that dysphoric individuals engage in excessive reassurance-seeking to assuage fears of being abandoned (Coyne, 1976), which then elicits interpersonal rejection, further exacerbating depressive symptoms (Joiner et. al., 1992). A new cognitive-behavioral theory postulates that excessive reassurance-seeking temporarily reduces rejection sensitivity (anxious expectations of rejection) in depressed individuals (Schmidt, et. al., 1999), but in the long-run reinforces rejection sensitivity, which exacerbates depressive symptoms (Ayduk et. al., 2001).

The current study tested these models by experimentally manipulating excessive reassurance-seeking within the context of employing a psychosocial intervention with individuals experiencing depressive symptoms. Eighty-three participants were randomly assigned to one of three conditions: 1) ERS-Fading (N=33), 2) Expressive Writing (N=34), or 3) Wait-list (N=16). Participants in the ERS-Fading (ERS) condition were asked to reduce their reassurance-seeking and to talk about their rejection sensitivity. To control for expectations for improvement and non-specific treatment factors, participants in the Expressive Writing (EW) intervention were asked to write about their rejection sensitivity, but were not told to reduce their reassurance-seeking. The wait-list was included to control for the effect of time. Treatment outcome was evaluated for depressive symptoms and quality of life. Five treatment mediators were evaluated: excessive reassurance-seeking, interpersonal rejection, rejection sensitivity, health quality, and sleep quality.

Results revealed significant decreases in depressive symptoms for both treatment conditions in comparison to wait-list control. No differences were detected between the two treatment groups on any outcome variables, except that ERS-fading participants demonstrated greater response and clinically significant change rates than EW participants.

Both treatment groups demonstrated similar expectations for improvement and all three groups demonstrated significant decreases in excessive reassurance-seeking, with the ERS-fading and the Expressive Writing conditions demonstrating equally robust decreases that differed significantly from smaller decreases reported by the Wait-list

control. Mediation analyses revealed that decreases in excessive reassurance-seeking mediated the effects of treatment on depressive symptoms in both treatment conditions. Implications of these findings are discussed.

Table of Contents

CHAPTER 1: INTRODUCTION

1.1 Manifestations of Depression

Depression is a mental illness easily recognized by most. Symptoms of depression include sadness and loss of pleasure, a sense of hopelessness and worthlessness, changes in sleeping and eating patterns, and suicidal ideation. These symptoms often wreak havoc on a depressed person's intrapsychic life as well as his/her interpersonal life. Significant others often come to the aid of their depressed loved ones, reassuring them over and over again, "I *do* like you. *You* don't like you" (Klerman et.al., IPT manual, 1984). When the depression is not resolved as a result of these encouraging words, the response from significant others can shift from support and encouragement to irritation and frustration. At this point the patient might be accused of not really trying to get better or of wanting to make everybody unhappy. These insights are usually expressed in a judgmental tone, reflecting the frustration of those around the depressed person rather than any true understanding of the multidimensional causes of depression.

1.1.1 Prevalence and Cost of Disorder

Because the complexities of Unipolar Depression are very misunderstood by significant others, the general public, and clinicians alike, over the last few decades there has been great emphasis placed on determining the risk factors and maintaining factors of this disorder, within different theoretical orientations, and on developing potent psychological treatments. The fact that it is the most common mood disorder, is associated with substantial disability, and accounts for a large percentage of health care

costs also lends support to attempts by researchers to understand this disorder in more depth. More specifically, Unipolar Depression is the most prevalent of mood disorders, has a documented lifetime prevalence rate of 20% and a 12-month incidence rate of 11% (Kessler et al, 1994), is associated with substantial disability, such as days lost from work and impairment in overall functioning (Klerman, 1989; Wells, et. al., 1989; Broadhead, et. al., 1990), and accounts for 22% of the total annual mental health care costs (Rice & Miller, 1993).

1.2 Etiology of Depression

1.2.1 Biological Theories of Depression

Although psychosocial theories of depression will be the main focus of this study, it is clear that understanding the biological basis of depression is of the utmost importance in fully understanding the development and maintenance of depressive symptoms. Benazon and Coyne (1999) note that depression tends to be a recurrent, episodic disorder with few first episodes, and that many times when symptoms of depression are controlled for, the effects of psychological variables disappear. Therefore, in order to avoid inflating the importance of psychological variables in the maintenance of depressive symptoms, current depressive symptoms will be controlled for in all final analyses.

1.2.2 Cognitive Theories of Depression

In the early 1970s, when cognitive psychology was becoming more mainstream, many clinical theorists shifted from a motivational-affective perspective to a cognitive approach to the study of psychopathology (Alloy, Clements, & Kolden, 1985). More

specifically, much theorizing about psychopathological individuals' dysfunctional cognitive processes occurred within the area of depression. Two leading cognitive etiological theories of depression emerged during this time and continue to have great influence today. These were the reformulated learned helplessness theory of depression (Abramson, Seligman, & Teasdale, 1978; Abramson, Metalsky, & Alloy, 1989) and Beck's cognitive model of depression (Beck, 1967; Beck, 1976; Beck, Rush, Shaw, & Emery, 1979). Both models could be described as cognitive diathesis-stress models of depression in which individuals with particular cognitive styles are hypothesized to be vulnerable to depression when faced with negative events.

Abramson's revised version of Seligman's original hopelessness model stated that an individual's expectation that highly desired outcomes are not likely to occur or that highly aversive outcomes are probable and that one has no power to change the probability of these outcomes- the expectation of hopelessness- is a proximal sufficient, but not a necessary, cause of depression (Abramson, Metalsky, & Alloy, 1985). The theory also specifies a causal chain of events that results in the expectation of hopelessness. The causal sequence begins with the occurrence of negative life events and ends with the onset of depressive symptoms. In between, Abramson argued that the expectation of hopelessness, and thus, depressive symptoms are more likely to occur when negative life events are attributed to internal, stable, and global factors than when they are attributed to external, unstable, and specific factors. Furthermore, the onset of depression is more likely to occur when negative life events are viewed as important than when they are perceived as unimportant.

Abramson hypothesized that some individuals possess a depressogenic attributional style, which consists of an overall tendency to attribute negative events to internal, stable, and global factors and to view negative events as very important. Hence, people who exhibit the hypothesized depressive attributional style should have a higher probability than people who do not have this style of forming an expectation of hopelessness, and thus, depressive symptoms. However, according to this model, in the absence of stress, people exhibiting the depressive attributional style should be no more likely than people not exhibiting this style to feel hopeless and develop depressive symptoms. In this context, this cognitive style serves as a cognitive diathesis to depression.

There has been much support in the adult depression literature for this model. For instance, an association has been found between depressive symptoms and depressive attributional style (Peterson & Seligman, 1984; Sweeney, Anderson, & Bailey, 1986). Evidence for the hopelessness theory of depression has also been reported (Metalsky & Joiner, 1992; Metalsky, Joiner, Hardin, & Abramson, 1993).

Similarly, Beck's cognitive model is also a cognitive-diathesis model in which three cognitive constructs are postulated to account for the development of depression when negative life events occur (Beck, 1967; Beck, 1976). These three constructs are schemata, cognitive errors, and the cognitive triad. Schemata represent relatively enduring, cognitive organizing structures that direct the processing of situational information. Schemata are hypothesized to develop through interactions with the environment and to be initially formed during childhood, reinforced by ongoing

experience, and relatively trait-like. According to Beck, depressogenic schemata are negative in content and consist of immature and rigid attitudes concerning the self and its relation to the world. Dysfunctional schematic information processing is posited to constitute a vulnerability factor in the development of depression. More specifically, when activated by negative life events, depressogenic schemata lead to automatic systematic cognitive errors in the logic of depressives' thinking. In addition, the content of depressives' thinking is dominated by a negative view of the self, the world, and the future- the negative cognitive triad.

There has been much support for this model as well. It has been generally supported by empirical work with adults with depression (Olinger, Kuiper, & Shaw, 1987; Wise & Barnes, 1986) and with depressed children (Kendall, Stark, & Adam, 1990).

In 1990, Young challenged these cognitive-diathesis models (Young, 1990). He illuminated the differences between Beck's diathesis-stress model of depression and his hypervalent schematic conceptualization and ways in which the two models could lead to different predictions regarding the consequences of negative life events. The cognitive-diathesis models predict distress only when an individual is faced with an objectively negative life event. According to Young's schematic model, the presence of negative life events should have less influence on individuals with hypervalent maladaptive schemas because these individuals chronically experience high levels of distress, due to the constant activation of their maladaptive schemas. In other words, individuals with depressogenic schemas should show attentional biases toward environmental stimuli that

are relevant to the schema and should interpret the stressor in an exaggerated and negative manner relative to those without the cognitive bias. Therefore, not only do depressed individuals experience objectively negative events and then respond to them in maladaptive ways, but they also perceive more events in their environment as negative and attend to these events more than nondepressed individuals. In this way, depressed individuals both act upon and are acted upon by their environment.

Young also expounded on schematic conceptualizations. First, he listed a variety of specific maladaptive self-schemas that fell into three main categories, those being Disconnection, Overconnection, and Exaggerated Standards. Second, he described schemas as being unconditional, whereas Beck's underlying assumptions are conditional. Third, he stated that any reassurance seeking behavior the depressed individual engages in should match the content of their activated schema. For example, whereas an individual with a defectiveness schema should show greater reassurance seeking for evidence that they are not defective, those with a dependency schema should show more reassurance seeking for evidence that they are not being abandoned. Unfortunately, these individuals may not understand the effect they have on others when they engage in excessive reassurance seeking and may not know how to effectively seek reassurance. In addition, although the feedback they receive from others after asking for reassurance may be positive, it is also perceived and interpreted through the lens of the maladaptive schema and is more likely to be perceived as potentially negative, even when it is not.

1.2.3 Interpersonal Theories of Depression

The cognitive theories of depression have been challenged by those who argue for an interpersonal approach that takes into account aspects of an individual's social functioning and environment. These people include researchers such as Weissman and Paykel who, in 1974, published an innovative study on the interpersonal and personal lives of depressed women. The empirically validated interpersonal psychotherapy (IPT) was developed from their findings. However, their theory remained largely based on the broad idea that understanding and renegotiating interpersonal relationships is essential in the treatment of depression. Specific maintaining factors were not identified or tested through research.

At the same time, Brown and Harris (1978) were developing a more precise model of the role of interpersonal factors of depression. They showed that severe life events, often involving loss and disappointments in close relationships, played a key role in the onset of depression. Furthermore, it was found that the lack of a close, confiding relationship made one more vulnerable to the development of depressive symptoms. However, Brown and Harris did not focus on how interpersonal relationships might specifically contribute to and maintain depressive symptoms once they occurred.

In 1974, Lewinsohn proposed a behavioral and interpersonal model of depression. According to Lewinsohn, depressed individuals do not receive enough positive support from significant others because they lack the social skills necessary for eliciting positive responses. Furthermore, depressed people are seen as less able of giving back to others, also thereby decreasing their chances for receiving support. The theory also hypothesizes

that the maintenance of depression is influenced by the depressed individuals' tendency to withdraw from social activities and therefore experience less pleasure.

In 1976, Coyne introduced his Interpersonal Theory of Depression which proposed that initially nondepressed but mildly dysphoric individuals seek constant excessive reassurance from others to alleviate their doubts as to their own worth and others' love for them (Coyne, 1976b). Significant others often respond with reassurance, but with little success, because the potentially depressed person doubts and rejects the reassurance. As the pattern continues, the depressed person's significant others become increasingly frustrated and irritated and more likely to reject the depressed individual, which is the individual's greatest fear. This rejection, in turn, exacerbates or maintains the depressed person's symptoms (Coyne, 1976a; Hammen & Peters, 1978).

1.3 Advances in Interpersonal Theories of Depression

Since Coyne first proposed his interpersonal theory of depression, others in the field have attempted to more fully explore the interpersonal nature of depression. Hammen and colleagues have conducted studies whose findings suggest that unipolar women generate stressful conditions, primarily interpersonal, that have the potential for maintaining or exacerbating symptoms of chronic or intermittent depression (Hammen, 1991).

Also, under the influence of Coyne's work, Joiner and colleagues have purported that depression needs to be understood in its interpersonal context (Joiner, 1999). They state that regardless of what other factors may be involved, the interpersonal context affects whether a person becomes depressed, the person's subjective experience while

depressed, and how the depressive symptoms are expressed. A failure to take into account depressed individuals' interpersonal context and the way in which they create and respond to this context can greatly limit treatment effectiveness.

Joiner and colleagues' recent focus on excessive reassurance-seeking has developed into two lines of research, one having to do with the development and cause of depressive symptoms and the other with depression's consequences. Within both lines of research, Joiner and colleagues have been careful to define the term excessive reassurance-seeking so as to be able to distinguish between this concept and the appropriate solicitation of social support, which has been shown to be protective in the development of health problems (Collins, Dunkel-Schetter, Lobel, & Scrimshaw, 1993). They suggest there is a substantial difference between the adaptive solicitation of social support and reassurance for various reasons versus the repeated and persistent seeking of reassurance, even when reassurance has been provided. Examples of items on the Excessive Reassurance-Seeking Scale include "In general, do you find yourself often asking the people you feel close to how they truly feel about you?" and "In general, do the people you feel close to sometimes become irritated with you for seeking reassurance from them about whether they really care about you?"

1.3.1 Excessive Reassurance-Seeking and Depressive Symptoms

In an attempt to determine whether excessive reassurance-seeking is a vulnerability factor for depression, researchers have examined the correlation between excessive reassurance-seeking and depressive symptoms, the temporal antecedence of excessive reassurance-seeking in relation to depressive symptoms, and possible

alternative explanations for the relation between excessive reassurance-seeking and depressive symptoms.

1.3.1.1 Correlational Studies

Correlational studies have documented a significant correlation between excessive reassurance-seeking and depression (Joiner et al., 1992; Potthoff et al., 1995). This finding has been replicated across many samples, including college students, Air Force cadets, and women in heterosexual dating relationships. Although the correlations are not particularly strong, they are significant and suggest that excessive reassurance-seeking is one pathway through which depressive symptoms develop.

1.3.1.2 Prospective Studies

Prospective studies have found that baseline levels of reassurance-seeking were significantly predictive of increases from baseline to follow-up in depressive symptoms (Joiner & Schmidt, 1998). In addition, prospective studies have demonstrated that the way in which baseline levels of excessive reassurance-seeking interact with stressful situations predict whether or not an individual will become depressed. Joiner and Metalsky (1998) found that high reassurance-seeking students, when paired with a roommate who viewed them negatively, experienced increased depressive symptoms, but low reassurance-seeking students did not. Katz, et al. (1998) obtained a very similar finding: High reassurance-seeking women, when in a dating relationship with a man who viewed them negatively, reported increases in depressive symptoms, but low reassurance-seeking women, even if in a devaluing relationship, did not experience depression increases.

1.3.1.3 Hidden Third Variables

Because prospective studies do not rule out the possibility that hidden third variables account for the findings, researchers have conducted additional studies in an attempt to rule out alternative factors that explain the relation between excessive reassurance-seeking and depressive symptoms. One main competing alternative hypothesis was that excessive reassurance-seeking and depressive symptoms were both related to and caused by anxiety. In order to test this hypothesis, studies (Joiner and Metalsky, 1998; Joiner and Schmidt, 1998) were conducted with undergraduate students, Veterans Administration psychiatric inpatients, and Air Force Cadets in basic training. Participants in each study were diagnosed based on a structured clinical interview, and it was found that depressed participants obtained significantly higher reassurance-seeking scores than participants with other diagnoses, including anxiety disorders, and those with no diagnosis. In addition, consistent with both the criteria of temporal antecedence and nonspuriousness, excessive reassurance-seeking served as a risk factor for future depressive symptoms but not for future anxious symptoms. These studies indicate that diagnostic specificity characterizes the relation between excessive reassurance-seeking and depression.

1.3.2 Excessive Reassurance-Seeking and Negative Interpersonal Outcomes

Researchers have proposed that excessive reassurance-seeking contributes to the development of depression through interpersonal stressors. Studies have been conducted to determine how excessive-reassurance seeking might explain why some studies find that depressive symptoms predict interpersonal rejection and others do not, and how

induced interpersonal stressors might then exacerbate depressive symptoms. In this context, Joiner and colleagues suggest that depression is associated with interpersonal problems but only when the depressed person is excessive in reassurance-seeking. The main idea is that the aversive properties of depression are not aversive to significant others unless clearly and consistently signaled to others. They believe that signals must be sent in such a way that others are implicitly implicated in the development of the problem (e.g., "you don't really love me any more, do you?"), and solution of the problem. In their view, excessive reassurance-seeking is this signal.

In response to this signal, Joiner and colleagues propose that two types of negative interpersonal consequences could occur, interpersonal rejection and contagious depression. Several studies have found that people who report depressive symptoms are negatively evaluated by significant others but only if they are also excessive in reassurance-seeking (Katz & Beach, 1997). These findings were replicated across many samples, including women in heterosexual relationships, college roommates, and married couples. In addition, it was found that excessive reassurance-seeking may be implicated in depression contagion. Specifically, in a study of college roommates, it was found that even controlling for negative events that may affect both members of a roommate pair, one roommate's depression level prospectively predicted the other's, particularly if reassurance-seeking was high (Joiner, 1994).

Not only has research found links between excessive reassurance-seeking and negative interpersonal consequences, but research has also found links between these interpersonal outcomes and the exacerbation of depressive symptoms. Specifically,

Potthoff, Holahan, and Joiner (1995), found that excessive reassurance-seeking, and generated negative interpersonal consequences (e.g., disagreements with friends), were both contributors to subsequent depressive symptoms. Hooley and Teasdale (1989) found that a strong predictor of depression relapse is perceived criticism by family members. More generally, it has been found that the negative aspects of relationships are as important as social support in predicting psychological adjustment (Helgeson, 1993; Lepore, 1992; Holahan, Moos, Holahan, & Brennan, 1997; Vinokur & Van Ryn, 1993).

In summary, Joiner and colleagues conclude that excessive reassurance-seeking predisposes people to the development of depressive symptoms. Their research demonstrates that as depressive symptoms emerge, they may interact with continued excessive reassurance-seeking to induce negative interpersonal consequences, which in turn, further encourage symptom expression.

1.3.3 Criticisms

Researchers who follow Joiner's line of work: 1) have questioned the causal role of excessive reassurance-seeking in the development and maintenance of depression, 2) have questioned the extent to which excessive reassurance-seeking can explain the development of depressive symptoms in all depressed individuals, and 3) have criticized his use of non-depressed samples to test his interpersonal model of depression.

1.3.3.1 Causality

Although Joiner has evidence from correlational and prospective studies that support his theory, neither correlational nor prospective studies have the ability to rule

out hidden third variables. Hence, researchers have strongly challenged the assertion that excessive reassurance-seeking is a causal risk factor of depression.

Benazon and Coyne (1999) argue that the relations between reassurance-seeking and supporter distress should not prematurely close the issue of what additional variables might be influencing both reassurance-seeking and supporter distress. They note that although there is evidence that depressed patients seek reassurance in the context of their marital relationships and this behavior is correlated with spouse distress, there may be other more important factors contributing to the distress of those living with the depressed person and the exacerbation of depressive symptoms in the depressed person that results from this.

Greenberg (1999) similarly argues that excessive reassurance-seeking may predict, but does not play a causal role, in the development of depression. He believes an insecure sense of self and interpersonal dependency make individuals experiencing negative life outcomes vulnerable both to excessive reassurance-seeking and to the downward spiral of excessive self-focus, negative affect, failures, self-blame, and negative self-image.

Furthermore, Greenberg argues that excessive reassurance-seeking may be the least of the reasons why depressed people elicit negative reactions and distancing from others. He proposes that it is more reasonable that depressed individuals are first rejected for alternative reasons and subsequently engage in excessive reassurance-seeking in response to the rejection they experience. These reasons could include expressions of negative emotion, a general negative attitude toward self and life, pessimism about the

future and gloominess about the present, a focus on death and other negative aspects of reality, excessive self-absorption, a lack of energy, a lot of complaining, and a lack of interest in pleasurable activities. To this list, Sacco and Nicholson (1999) add social skills deficits, speech fluency and eye contact deficits, negative and poorly timed disclosures, and docile-dependency.

1.3.3.2 Explanatory Power

Only a percentage of individuals who are depressed engage in excessive reassurance-seeking. Therefore, researchers question the explanatory power of excessive reassurance-seeking in the development of all depressive episodes (Benazon & Coyne, 1999). Researchers believe it is more likely that there exists a subset of depressed individuals for whom excessive reassurance-seeking is a potent causal risk factor in the development of their depressive episodes.

Young, amongst others, has theorized that individuals who are sensitive to and anxious about interpersonal rejection are likely to engage in excessive reassurance-seeking (Young, 1990; Sacco and Nicholson, 1999; Brennan and Carnelley, 1999). He hypothesized these individuals engage in ERS in an attempt to seek evidence that they are not being abandoned. Paradoxically, they do not accept this evidence and are prone to become depressed when rejection, which they in part elicit, occurs.

Similarly, Beck and Blatt (Beck, 1983; Blatt, 1974) theorized that individuals with a sociotropic or dependent depressive style are likely to engage in excessive reassurance-seeking and become depressed in the face of negative interpersonal events.

Research has confirmed that individuals sensitive to rejection have low self-esteem, need others to provide a sense of self-worth and approval, harbor deep fears of rejection, and seek reassurance continually to protect against rejection (Arieti & Bemporad, 1980; Beck, 1983; Blatt, 1974; Davila, 1999). Research has also confirmed that sensitivity to rejection is related to the development of depressive symptoms in the face of rejection. Zuroff and Mongain demonstrated that individuals with the sociotropic or dependent depressive style experience more anaclitic depression in the face of rejection than individuals with the autonomous or self-critical depressive style (Zuroff and Mongain, 1987). Similarly, it has been found that women with High Rejection Sensitivity are more likely to experience rejection and have relationships that end than women with Low Rejection Sensitivity (Ayduk, Downey, & Kim, 2001; Downey, Freitas, Michaelis, and Khouri; 1998), in part due to highly rejection sensitive women's greater negativity during discussions with partners, and to become more depressed when they experience a partner-initiated breakup.

1.3.3.3 Sample Composition

Researchers believe that by simply focusing on the short-term relations between reassurance-seeking and distress, Joiner has limited his ability to deem excessive reassurance-seeking an etiological factor of clinical depression (Benazon & Coyne, 1999). They call for studies that subject Joiner's interpersonal theory to a more rigorous and relevant test by using depressed samples.

CHAPTER 2: CURRENT STUDY

2.1 Study Aims

In reviewing the depression literature, two main issues emerge. The first issue concerns the lack of experimental evidence with clinically depressed populations demonstrating that excessive reassurance-seeking is a causal risk/maintaining factor of depression. The second issue concerns the considerable amount of overlap between symptoms of anxiety and symptoms of depression and the possibility that reassurance-seeking may exacerbate depressive symptoms both by eliciting interpersonal rejection and by reinforcing anxious expectations of rejection. This chapter addresses both issues. It reviews and adapts concepts from the anxiety disorders literature in developing a comprehensive model of how sub-threshold depressive symptoms and excessive reassurance-seeking operate both through rejection sensitivity (anxious expectations of rejection) and interpersonal rejection to produce increases in levels of depression. It concludes with specific hypotheses and a therapeutic experimental paradigm through which to test them.

2.2 Integration of Theories of Depression and Anxiety

The current study proposes that excessive reassurance-seeking serves as a compensatory strategy that reduces anxiety in depressed individuals hypervigilant for signs of possible rejection, sensitive to rejection, and concerned about preventing interpersonal rejection. As suggested by Joiner's work, it is hypothesized that this excessive reassurance-seeking then elicits interpersonal rejection, which further exacerbates depressive symptoms. As suggested by research on anxiety disorders, it is

also hypothesized that excessive reassurance-seeking reinforces and interferes with reductions in rejection sensitivity by directing an individual's attention towards potential signs of rejection, therefore exacerbating depressive symptoms.

The notion that anxiety about and sensitivity to rejection may potentially play a role in the exacerbation of depressive symptoms is in line with current thinking about the high comorbidity rate between anxiety and mood disorders. Interestingly, it has been suggested that anxious symptoms often precede the development of depressive symptoms and that they may represent a harbinger of excessive reassurance-seeking (Joiner, et. al., 1999). This suggests that clinicians working with patients with anxiety disorders should attend to reassurance-seeking and its possible ability to transform an initially anxious presentation into a depressive one.

Furthermore, Joiner and colleagues have stated that it seems logical and feasible to develop a psychoeducational module on reassurance-seeking that can be integrated into broader, empirically validated treatments for depression, such as cognitive-behavioral therapy, interpersonal therapy, and marital therapy. More specifically, Swann and Bosson (1999) have suggested that 1) depressed individuals be brought to understand that their continued attempts to solicit reassurance from their partner are threatening to the partner's self-perceived honesty and trustworthiness and that they come to see how their quest for reassurance could be self-defeating, and that 2) underlying cognitive distortions be addressed and altered. Additionally, Sacco and Nicholson (1999) have recommended that treatment include: assessment and treatment of the underlying social-

cognitive diatheses in the depressed or depression-prone person that possibly biases social perceptions and heightens sensitivity to negative appraisals and rejection.

2.3 Theories of Anxiety Disorders

Within the field of anxiety disorders, Beck and Emery (1985) developed a cognitive model of anxiety and phobias. The schema serves as the core concept in their cognitive model. Schemas are sets of "rules" that classify, prioritize, and interpret incoming information to the person as well as facilitate the retrieval of relevant information from memory. Anxiety-disordered individuals, according to Beck and Emery, typically function in the vulnerability mode. That is, they see the world as a dangerous place in which they must constantly be vigilant to potential threat. As a result, neutral or mildly positive cues are misinterpreted negatively, while positive or safety cues are discounted or ignored. Memories of past successes or available coping resources are also underestimated or overlooked.

The cues to which the hypothesized hypervigilance is "tuned" differ from one anxiety disorder to another. Snake phobics, for example, are hypervigilant to cues that denote the presence of snakes, including long, thin objects or rustling in tall grass. Panic patients are hypervigilant to internal bodily cues that denote the possibility of impending death or insanity. Social phobics are hypervigilant to cues that denote the possibility of negative evaluation by others.

Phobic clients appear to devote excessive attentional resources to the detection of potential threat cues (Hope, Rapee, Heimberg, & Dombeck, 1990; Mattia, Heimberg, & Hope, 1993; Smith, Ingram, & Brehm, 1983). In essence, anxiety disorder clients

excessively attend to and often times negatively misinterpret potential threat cues, overestimate the likelihood of negative outcomes occurring, and overestimate the costs of such negative outcomes happening.

Applying these concepts to the rejection sensitivity domain, it has been found that in interpersonal situations in which the possibility of rejection is both applicable and personally salient (Higgins, 1996), people high in rejection sensitivity automatically experience a sense of threat and foreboding (Magios, Downey, & Shoda, 2000). This highly aroused negative emotional state elicited by threat narrows highly rejection sensitive people's attentional focus and leads them to scan the environment in search of possible rejection cues (Compas, 1987; Krohne & Fuchs, 1991; Magios, et. al., 2000). Vigilance for rejection cues makes highly rejection sensitive individuals especially susceptible to perceiving and magnifying intentional rejection in significant others' ambiguous or negative behavior. Indeed, people high in rejection sensitivity have been found to perceive rejection in ambiguous cues more readily than those low in rejection sensitivity (Downey & Feldman, 1996; Downey, Lebolt, et. al., 1998).

2.4 Behavioral Maintaining Factors of Anxiety

In an attempt to manage their anxiety, phobic clients often avoid situations that are anxiety-producing and/or engage in "safety behaviors" when in these situations. In the case of panic disorder clients, safety behaviors could include carrying Xanex on their person in the event that they experience uncontrollable anxiety, or only traveling outside the home if accompanied by a trusted companion. Studies have shown that although these behaviors reduce anxiety temporarily, ultimately they interfere with long-term fear

reduction (Williams, Dooseman, & Kleifield, 1984; Wells, Clark, Salkovskis, Ludgate, Hackman, and Gelder, 1995; Sloan & Telch, in press; Salkovskis, Clark, Hackman, Wells, & Gelder, 1999). Treatment studies have confirmed this finding and have found that fading out 'safety behaviors' enhances the effectiveness of therapy through greater reductions in anxiety sensitivity. Treatment techniques used to decrease 'safety behaviors' have included response-prevention, in the case of OCD treatment, and 'safety behavior' fading, in the case of panic disorder and specific phobia treatments.

2.5 Exposure-Response Prevention

Exposure-response prevention consists of exposing the client to the stimulus they fear and preventing them from avoiding the stimuli or engaging in rituals while being exposed to the stimuli. By using this technique, therapists put clients in a situation that forces them to confront a feared stimulus and take in evidence that disconfirms their worst fears. This results in long-term fear reduction.

The relative effects of exposure and response-prevention procedures, used with clients suffering from obsessive-compulsive disorder, were examined by Foa and her colleagues (Foa, et. al., 1984). Obsessive-compulsive patients were treated with exposure only, response prevention only, or with a combination of the two techniques. At both post-treatment and follow-up, the combination treatment produced greater treatment gains than did the two individual components employed separately, which produced greater treatment gains than Placebo.

2.6 Safety-Behavior Fading

'Safety behavior' fading consists of exposing the client, suffering from panic disorder, to the internal bodily cue that they fear and preventing them from avoiding the stimulus by placing their attention elsewhere, and preventing them from engaging in safety behaviors. In the case of someone who fears having a heart attack, a safety behavior might take the form of carrying a defibulator in the car with them at all times.

Williams et al (1984) found 'safety behavior' fading and guided mastery treatment in 32 intractable height and driving phobics resulted in significantly greater between trial fear reduction than the exposure only and control conditions. Similarly, Wells (1995) treated 8 socially phobic patients and found that exposure combined with the fading of safety behaviors resulted in significantly more fear reduction than exposure alone. Salkovskis (1999) also found significantly greater improvement in PDA patients who were encouraged to fade safety behaviors during exposure compared to those who continued to use them. In a laboratory study, Sloan and Telch (2002) found that safety behavior utilization during exposure interfered with fear reduction compared to exposure only and focusing on their perceived core threat.

There are a few theories that attempt to explain this finding within the fear reduction theory proposed by Foa and Kozak (1986). This theory incorporates Rachman's emotional processing theory (Rachman, 1980) and Lang's bioinformational theory (Lang, 1970) and includes two necessary conditions for long-term fear reduction to occur. First, the phobics' fear structure must be activated during exposure. It is thought that once activated, physiological responses (increased heart rate, sweating, etc.)

automatically begin to decline with time due to parasympathetic nervous system activation (Porges, 1995). This causes a within-trial habituation as the association with the stimuli and physiological arousal weakens. Second, disconfirming evidence must be available and cognitively processed by the patient. This results in between-trial habituation. It is thought that safety behaviors interfere with the second condition being met. Three theories have been suggested that may explain why safety behaviors interfere with fear reduction: 1) distraction during exposure to the feared stimulus (Rodriguez & Craske, 1995), 2) misattribution of safety to the safety behavior (Salkovskis, 1991), and 3) threat transmission model (Sloan & Telch, 2002).

In summary, the anxiety disorder literature has demonstrated that "safety behaviors"/ "rituals"/ "compensatory strategies" exacerbate and maintain anxious symptoms by reinforcing and interfering with reductions in anxiety sensitivities. Treatment studies have been employed to demonstrate this fact. They experimentally manipulate these behaviors by reducing them, within the context of therapy, in an attempt to determine whether this facilitates drops in anxiety sensitivities and anxious symptoms.

2.7 Current Study Design and Aims

In the current study, it was hypothesized that individuals who have high rejection sensitivity engage in excessive reassurance-seeking in an attempt to reduce their anxious expectations about rejection. Based on the anxiety disorder literature, it was hypothesized that excessive reassurance-seeking exacerbates and maintains depressive symptoms by reinforcing and interfering with reductions in rejection sensitivity. Based on Coyne's and Joiner's work, it is also hypothesized that excessive reassurance-seeking

exacerbates and maintains depressive symptoms through eliciting interpersonal rejection. The current study aimed to test these models by experimentally manipulating excessive reassurance-seeking (ERS) within the context of providing treatment to clinically depressed individuals. The current study also aimed to test the effectiveness of a newly developed treatment for depression which could easily be incorporated into existing empirically-supported treatments for depression.

Specifically, the current study employed a 3-arm between-subjects design that randomly assigned participants to: 1) ERS-fading condition (N=30), 2) Expressive Writing (N=30), or 3) Wait list control (N=15). The study had the following aims: (a) Compare the differential effects of ERS-Fading Treatment vs. Alternative Treatment (Expressive Writing Task) to control for the effect of expectations for improvement, non-specific factors, and time spent reflecting on relationships; (b) Compare both Active Treatment groups to Wait-list to control for the effect of time on depressive symptoms and quality of life; (c) Examine these effects in terms of meaningful gains (i.e., reliable change, high end-state functioning, etc.); (d) Assess the role of several variables as mediators of treatment outcome, including excessive reassurance-seeking, rejection sensitivity, interpersonal rejection, health quality, and sleep quality; and (e) Assess the role of several variables as moderators of treatment outcome (i.e., gender, mood disorder diagnostic status, personality pathology, co-morbid disorder diagnostic status, reasons for depression).

In order to ensure that the manipulations worked properly, treatment credibility, expectations for improvement, and excessive reassurance-seeking were measured in both treatment conditions.

2.8 Additional Mediators

It was suggested that the Expressive Writing condition might demonstrate significant decreases in depressive symptoms that could not be accounted for by decreases in excessive reassurance-seeking, rejection sensitivity, or interpersonal rejection. Therefore, measures of sleep quality and health quality were also included in order to test whether these might mediate the effect of the EW condition on depressive symptoms.

A growing body of empirical data suggests that expressing stress-related thoughts and feelings can improve physical and mental health (Lepore & Smyth, 2002; J. W. Pennebaker, 1993; Smyth, 1998). For example, studies have shown that writing about stressors has been related to better role and physical functioning (J. W. Pennebaker, Colder, & Sharp, 1990; Smyth, Stone, Hurewitz, & Kaell, 1999), fewer reports of illness and physician visits (J. W. Pennebaker & Beall, 1986), decreased distress (Lepore, 1997), increased positive affect (Mendolia & Kleck, 1993), and better sleep quality (Harvey & Farrell, 2003).

Both poor physical health and poor sleep quality have been shown to be predictors of depression symptoms (Wool, 1990; Taylor et. al., 2003). Given that writing interventions have been shown to positively impact health and sleep quality, it is

plausible that improvements in health and sleep quality could mediate the effects of expressive writing on depressive symptoms.

2.9 Hypotheses

Hypotheses addressed treatment outcome and potential mediators and moderators of treatment outcome.

2.9.1 Outcome Hypotheses

1. It was hypothesized that ERS-fading participants would demonstrate greater reductions in depressive symptoms across time, as measured by the Beck Depression Inventory and the Hamilton Measure of Depression, and greater increases in quality of life across time, as measured by the Sheehan Disability Scale, than 1) Expressive Writing (EW) participants, and 2) Wait-list (WL) control participants. Similarly, it was hypothesized that Expressive Writing participants would demonstrate greater reductions in depressive symptoms across time and greater increases in quality of life across time than 1) Wait-list (WL) control participants.
2. It was hypothesized that more ERS-fading participants would demonstrate reliable change in depressive symptoms and clinically significant improvement across time than 1) Expressive Writing participants and, 2) Wait-list Control participants. Similarly, it was hypothesized that more Expressive Writing participants would demonstrate reliable change in depressive symptoms and clinically significant improvement across time than 1) Wait-list control participants.

2.9.2 Mediation Hypotheses

2.9.2.1 ERS-Fading Hypotheses

1. It was hypothesized that the effects of the ERS-fading treatment on depressive symptoms would be mediated by excessive reassurance-seeking, as measured by the Depressive Interpersonal Relationships Inventory.
2. It was hypothesized that the effects of the ERS-fading treatment on depressive symptoms would be mediated by rejection sensitivity, as measured by the Rejection Sensitivity Questionnaire, the Sociotropy-Autonomy Scale, and the Depressive Experiences Questionnaire.
3. It was hypothesized that the effects of ERS-fading treatment on depressive symptoms would be mediated by Interpersonal Rejection, as measured by the Personal Attitudes Scale, the Social Support Behaviors Scale, and the Test of Negative Social Exchange.

2.9.2.2 Expressive Writing Hypotheses

1. It was hypothesized that the effects of the Expressive Writing treatment on depressive symptoms would be mediated by sleep quality, as measured by the Pittsburgh Sleep Quality Index.
2. It was hypothesized that the effects of the Expressive Writing treatment on depressive symptoms would be mediated by health quality, as measured by the Rand General Health Survey.

2.9.3 Moderation Hypotheses

1. It was hypothesized that Degree of Comorbidity and Level of Personality Pathology would moderate the effects of Treatment. More specifically, it was hypothesized that participants with lower levels of comorbidity and personality pathology would show a greater reduction in depressive symptoms and a greater increase in quality of life over time in comparison to those participants who had higher levels of comorbidity and personality pathology.
2. It was hypothesized that Reasons for Depression would moderate the effects of Treatment. More specifically, it was hypothesized that participants who indicated that intimacy issues played a large role in the maintenance of their depressive symptoms would demonstrate a greater reduction in depressive symptoms and a greater increase in quality of life over time than those participants who indicated that intimacy issues did not play a large role in the maintenance of their depressive symptoms.
3. Although no hypotheses were advanced for the moderating effects of depression diagnostic status, gender, and ethnicity on treatment outcome, these variables were tested in moderation analyses.

CHAPTER 3: METHOD

3.1 Design

This study examined the differential effects of ERS-Fading (ERS) group treatment, Expressive Writing (EW) treatment, and no treatment (WL) on depressive symptoms and quality of life in a sample of depressed individuals. A 3 X 2 mixed model design was utilized to test for pre- to post- differences, with treatment group (ERS, EW, and WL) serving as the between-subjects factor, and assessment occasion (baseline, post-treatment) serving as the within-subjects factor. A 2 X 3 mixed model design was utilized to test for post- to follow-up differences, with treatment group (ERS, EW) serving as the between-subjects factor, and assessment occasion (post-treatment, 6-week follow-up, 3-month follow-up) serving as the within subjects factor.

3.2 Participation

Seventy-five participants displaying clinically significant levels of depressive symptoms were projected for randomization to either ERS(N=30), EW(N=30), or the WL(N=15) group. This number of participants was chosen in order to allow for sufficient power (0.70) to detect a medium effect size (D = 0.50) between treatment groups and a large effect size (D = 0.80) between either treatment group and wait-list, at an alpha level of 0.05.

Participants who completed the study received 3.5 hours of credit, $10 for sessions 3 and 4, $10 for the 6-week follow-up, and $10 for the 3-month follow-up. Significant others received $5 for every assessment packet they completed.

3.3 Recruitment

Individuals from the UT Psychology 301 subject pool completed 2 web-based screening questionnaires and those who potentially qualified and who expressed interest in the study were then contacted by email to set up an initial interview.

3.4 Entry Criteria

In order to qualify for the study, participants satisfied the following inclusion/exclusion criteria:

Inclusion Criteria

1. Participants diagnosed with a Principal Axis I diagnosis of Major Depression, Dysthymia, Depressive Disorder NOS, or Adjustment Disorder with Depressed Mood and/or receiving a score of greater than 10 on the Beck Depression Inventory.
2. Participants currently engaged in an excessive amount of reassurance-seeking, as evidenced by a score of 5 or greater on item 21 of the Depressive Interpersonal Relationships Inventory.
3. Participants between the ages of 18 and 65 and who are English-speaking.
4. Participants had a significant other willing to complete questionnaires for the study.

Exclusion Criteria

1. Participants concurrently receiving cognitive-behavioral treatment.
2. Participants on non-stabilized medications and participants who expected to change their medication regimen or therapy during the course of treatment.

Participants were asked to inform the principal investigator if they made changes to their medication or began another type of therapy.

3. Participants meeting for Bipolar I or II disorder, a psychotic disorder, or alcohol or substance abuse or dependence.
4. Participants who reported a previous suicide attempt or who were at high risk for suicide (Item 9 of the Beck Depression Inventory > 1).
5. Participants meeting criteria for Borderline Personality Disorder, which was assessed for by following up on items that participants endorsed from the Borderline Personality Disorder scale of the Personality Diagnostic Inventory (PDQ-4).

3.5 Assessments

Assessments and treatment were conducted at the Seay Building / Clinical Psychology Training Clinic.

3.5.1 Diagnostic Assessment

Assessment of DSM-IV Axis I diagnoses was conducted using the Composite International Diagnostic Interview. The goal of this interview was to assess for a principal Axis I mood disorder, meaning the participant indicated that depressed mood was a major concern and was not solely a bi-product of another Axis I disorder, and to assess for co-morbid Axis I psychological disorders. The CIDI is a structured diagnostic interview developed for administration by trained laypersons (World Health Organization, 1997; Robins et al, 1988). It is designed to assess symptoms that are then mapped onto DSM-IV and ICD-9 diagnostic criteria. All components were administered

(somatic disorders, anxiety disorders, mood disorders, psychotic disorders, alcohol and substance use, and eating disorders) with the exception of tobacco use. The duration of the interview is approximately one hour. The CIDI has demonstrated excellent inter-rater reliability, good test-retest reliability, and good validity (see Andrews & Peters for a review, 1998).

3.5.2 Pre-screening assessments

3.5.2.1 Beck Suicide Inventory

The BSI (Beck and Steer, 1991) is a 19-item self-report instrument which assesses for current suicidal ideation and past suicide attempts. Items are rated on a 3-point scale ranging from 0 to 2. A total score is computed by summing all items and can range from 0 to 38. Steer et al. (1993) found that the BSI was a reliable and valid measure of self-reported suicidal ideation in adolescent psychiatric inpatients, and had a coefficient alpha of .95.

3.5.2.2 Personality Diagnostic Questionnaire

The PDQ-4 (Hyler, 1998) is an 85-item self-report inventory that is mapped on to DSM-IV personality disorder criteria. Respondents answer "true" or "false" to each test item, indicating that the statement reflects that person's "usual self." The PDQ-4 yields a subscale score for 10 personality disorders based on the decision criteria in the DSM-IV. While extensive research established good validity for the PDQ-III-R (based on DSM-III-R criteria), few PDQ-IV validity studies had been conducted. However, limited research suggests good sensitivity (Davison, Leese, & Taylor, 2001) and adequate specificity. Given its propensity to yield some false positives but rare false negatives, it has been

recommended for use as a screening measure for overall personality pathology, but not as a diagnostic tool. The number of personality disorders met for will be used in moderator analyses.

3.5.3 Outcome measures

3.5.3.1 Beck Depression Inventory

The BDI-II is a 21-item self report scale assessing severity of recent symptoms of depression (Beck, Steer, & Brown, 1996; Beck, Rush, Shaw, & Emery, 1979; Beck and Steer, 1987). Each item includes four response options ranging from 0 to 3, the sum of which is calculated to produce a total score. It is widely used as a measure of depressive symptomatology, has yielded adequate reliability estimates (mean coefficient alpha of .81 in nonpsychiatric populations), has been well validated (for a review, see Beck, Steer, & Garbin, 1988), has shown high internal consistency among psychiatric outpatients (α = .92) and good construct validity (Steer, Ball, Ranieri, & Beck, 1997). It has also demonstrated stronger factor structure than the previous version (Dozois, Dobson, & Ahnberg, 1998). Cutoff ranges are as follows: Normal/Borderline (0-13), Mild Depression (14-19), Moderate (20-29), Severe (30+).

3.5.3.2 Hamilton Depression Rating Scale

The 17-item Hamilton Rating Scale for Depression is a widely used structured interview of current depressive symptoms. In the current study, a 23-item self-report version will be used. Kobak et al. (1990) created a computer-administered self-report form of the Hamilton Depression Rating Scale designed to provide scores with a high degree of correspondence with the clinician-administered 17-item version of the scale.

They found that both the computer- and clinician-administered interviews demonstrated high internal consistency reliability of .91 and .90, respectively. A correlation of .96 was found between the two versions, and the mean score difference between the two forms was non-significant for the total sample. Both forms also demonstrated clinical sensitivity and specificity in differentiating between Major and Minor Depression and Control group subjects. Overall results support the clinical and research use of the self-report version of the Hamilton scale.

3.5.3.3 Sheehan Disability Questionnaire

The SDS is a 4-item self report scale assessing for mental health-related functional impairment in work, social, and home life domains. Three of the four items have ten response options ranging from 0 (not at all impaired) to 10 (cannot perform functions). A total score will be computed by summing across these three items. The fourth item is a global rating of work/social impairment that is rated from 1 (normal activity allowed) to 5 (normal activity totally prevented). It is widely used as a measure of impairment, has shown high internal consistency among psychiatric and primary care patients (α = .89; Leon, Olfson, Portera, Farber, and Sheehan, 1997), and good construct validity.

3.5.4 Manipulation Check

3.5.4.1 Credibility/Expectancy Questionnaire

The Credibility/Expectany Questionnaire developed by Devilly and Borkovec (2000) includes two scales: Cognitively Based Credibility and Affectively Based Expectancy. The scale demonstrates high internal consistency within each factor with a

standardized alpha of between .79 and .90 for the expectancy factor, and a standardized alpha of between .84and .85 for the whole scale. Test-retest reliability over a one-week period was also found to be good at .82 for expectancy and .75 for credibility. Subjects are asked to respond by indicating how logical they believe treatment to be and how confident they are in the treatment on a scale from 1 (not at all) to 9 (very). Subjects are also asked to respond by indicating to what extent they believe or feel they will improve as a result of the treatment on a scale from 0% to 100%. Scores for both scales will be computed by taking the average of the sum of subscale items.

3.5.5 Mediator Assessments

3.5.5.1 Depressive Interpersonal Relationships Inventory

The DIRI assesses an individual's tendency to habitually and excessively seek reassurance from others (DIRI; Joiner, 1994; Joiner et al., 1992, 1993). A Habitual Reassurance Seeking measure consists of two items (e.g., "Do you frequently seek reassurance from the people you feel close to as to whether they really care about you?") scored on a 7-point scale ranging from 1 (no, not at all) to 7 (yes, very much). An Excessive Reassurance Seeking measure also consists of two items (e.g., "Do the people you feel close to sometimes get 'fed up' with you for seeking reassurance from them about whether they really care about you?") scored on the same 7-point scale. A total score will be computed by taking the average of all 4 items.

The DIRI has demonstrated good validity and reliability. Specifically, a coefficient alpha of .88 has been reported for the composite Reassurance Seeking Style scale (Joiner et al., 1992, 1993).

3.5.5.2 Rejection Sensitivity Questionnaire

This is an adapted version of the Rejection Sensitivity Questionnaire by Downey and Feldman (1996). The original RSQ (Downey & Feldman, 1996) assesses the anxious expectations component of RS. The measure consists of 18 hypothetical situations in which rejection by a significant other is possible (e.g., "You ask your friend to do you a big favor"). For each situation, people are first asked to indicate their degree of concern or anxiety about the outcome of the situation (e.g., "How concerned or anxious would you be over whether or not your friend would want to help you out?") on a 6-point scale ranging from 1 (very unconcerned) to 6 (very concerned). They are then asked to indicate the likelihood that the other person(s) respond in an accepting fashion (e.g., "I would expect that he/she would willingly agree to help me out") on a 6-point scale ranging from 1 (very unlikely) to 6 (very likely). High likelihood of this outcome represents expectations of acceptance, and low likelihood represents expectations of rejection.

Reflecting the authors' adoption of an expectancy-value model (Bandura, 1986) of anxious expectations of rejection, RSQ scores are normally computed as follows: A score for each situation is obtained by weighting the expected likelihood of rejection by the degree of anxiety or concern about the outcome of the request. The score for acceptance expectancy is reversed to index rejection expectancy (expectancy of rejection = 7 – expectancy of acceptance). The reversed expectation score is then multiplied by anxiety or concern ratings. A total (cross-situational) RS score for each participant is

computed by summing the RS scores for each situation and dividing by the total number of situations.

Downey and Feldman (1996, Study 1) showed that the RSQ is a normally distributed measure that taps a relatively enduring and coherent information-processing disposition. The RSQ test-retest reliability was .83 over a 2 to 3-week period and .78 over a 4-month period. Downey and Feldman (Study 3) provided evidence that RS was not redundant, in terms of it predictive utility, with established personality constructs to which it is conceptually and empirically related, including introversion, neuroticism, adult attachment style, social anxiety, social avoidance, and self-esteem. In addition, in a different sample, Downey and Ayduk (2000) found that whereas the RSQ was significantly related with the Sociotropy scale, $r(115) = .39$, $p < .001$ (Beck et al., 1983), it was not redundant with the Sociotropy scale scores in terms of predicting BDI depressive symptoms (RSQ; $b = .49$, $t[105] = 2.19$, $P < .05$).

The adapted version used for the present study includes a total of 18 items. Six items ask the subject to indicate the likelihood that significant others will respond in a rejecting fashion (e.g., "In the last few weeks, to what extent were you expecting to find out that a significant other in your life had started caring less about you?") on a 6-point scale ranging from 1 (very unlikely) to 6 (very likely). High likelihood of an outcome represents expectations of rejection, and low likelihood represents expectations of acceptance. This measure taps 4 dimensions of rejection, including 1) not being cared for, 2) not being thought well of, 3) not being supported and 4) being treated negatively. This will be the first attempt to pilot this measure.

The remaining twelve questions tap perceived consequences of the 4 types of rejection. Subjects respond by indicating the degree to which they believe the possible consequences of rejection (i.e., "I would feel helpless"; "I would feel worthless and empty"; "I would feel afraid/anxious/concerned") would occur, on a scale from 1 (not at all) to 6 (very strongly).

The total score will be the average of 6 product scores (computed by multiplying the expectation scores by the average of their corresponding consequence scores).

3.5.5.3 Sociotropy Autonomy Scale

The SAS is a 60-item self-report inventory assessing two proposed personality dimensions of depression: Sociotropy (dependency) and Autonomy (self-criticism). The Sociotropy scale measures needs for approval and fear of disapproval by others. The Autonomy Scale assesses degree of achievement orientation, concern of personal failure and need for control over the environment. Sample items include: Sociotropic- "I feel I have to be nice to other people" and Autonomous- "It is important to me to be free and independent." Subjects rate each statement on the inventory as to the percentage of the time that the statement applies to them (0-100%). Scores for dependency and self-criticism are derived by summing the 30 items of each scale.

Beck et al. (1983) and Robins (1985) reported high levels of internal consistency, reliability (range from .80 to .90), and test-retest reliability for the SAS (range .69 to .75). Duran and Hammen (1987) in a sample of unipolar and bipolar patients, found coefficient alpha's of .93 for Sociotropy and .88 for Autonomy. Test-retest reliabilities over a 6-month period were .82 for Sociotropy and .66 for Autonomy.

Rude and colleagues (Rude & Burnham, 1995) subjected the SAS Dependency Scale to a factor analysis which yielded 2 separate factors. One was characterized by valuing of relationships and sensitivity to the effects of one's actions on others (Connectedness) and the other was characterized by anxious concerns regarding possible rejection (Neediness). Connectedness was associated with gender but not with depression. Neediness was associated with depression but not with gender.

Only items from the Neediness subscale that allude to possible negative consequences of being rejected will be included in the current study, so as to create a purer measure of rejection sensitivity. A total score will be derived by summing across all items and taking the average.

3.5.5.4 Depressive Experiences Questionnaire

The Depressive Experiences Questionnaire (Blatt et al., 1976) consists of 66 items reflecting feelings about self and interpersonal relations. Factor analysis of the DEQ has yielded three stable factors, two of which, Dependency and Self-Criticism, correspond to Blatt's anaclitic and introjective types, respectively. The third factor, Efficacy, has generally been ignored in research on the DEQ. Zuroff, Moskowitz, Wielgus, Powers, and Franko (1983) found test-retest correlations for Dependency of .89 and .81 at 5- and 13- week intervals, respectively. Example of items include, "I set my personal goals and standards as high as possible"(Self-criticism subscale), and "Without support from others who are close to me, I would be helpless" (Dependency subscale). Subjects rate the degree to which they agree with the statement on a scale from 1 (disagree) to 7 (agree). Scores are derived by summing across items for each subscale.

Rude and colleagues (Rude & Burnham, 1995) also subjected the DEQ Dependency Scale to a factor analysis which, similarly to the results for the SAS, yielded 2 separate factors of connectedness and neediness.

Only items from the Neediness subscale that allude to possible negative consequences of being rejected will be included in the current study, so as to create a purer measure of rejection sensitivity. A total score will be derived by summing across all items and taking the average.

3.5.5.5 Personal Attitudes Scale

This is a revised version of the Rosenberg Self-Esteem Questionnaire (R-SEQ). It was developed by Swann, Wenzlaff, and Tarafodi (1992). It includes 10 items of Rosenberg's original scale, reworded such that a significant other (the person with whom the target engages in the most reassurance-seeking behavior) completes it with regard to the esteem in which they hold the target (e.g., "I see him/her as a person of worth, at least on an equal basis with others.") It is therefore best viewed as a measure of that aspect of rejection involving negative evaluation of the targets' global worth as a person, and is used in all of Joiner's studies. In the current study, the target will complete this questionnaire in order to assess perceived negative evaluation. Each item is rated on a 1 to 5 scale; full scale scores range from 10 to 50. A total score will be computed by averaging across all items. For ease of interpretation, scoring will be reversed such that higher scores reflect a more negative view, both actual and perceived, of targets by significant others.

Joiner et al. (1992) and Swann, Wenzlaff, and Tarafodi (1992) have provided reliability and construct validity data for this measure. In the Joiner et al. (1992) study, the coefficient alpha was .86, which is similar to the .92 reported for the SEQ (Rosenberg, 1965). In a study of undergraduates and their roommates, Joiner (1994) found that roommates' R-SEQ scores were significantly correlated with observer-raters' impressions of target students' likeability, $r(38) = .39$, $p < .05$.

3.5.5.6 Social Support Behaviors Scale

The SS-B Scale consists of 45 items designed to tap five modes of support: emotional support, socializing, practical assistance, financial assistance, and advice/guidance. Respondents typically complete the SS-B with respect to family and friends separately. The SS-B focuses on available supportive behavior rather than the frequency of supportive behaviors, and asks subjects to indicate (on the basis of previous experience) how likely a significant other would be to perform the specific behavior. With slight changes in wording, the SS-B can be, and has been, used to tap behavior enacted in the face of some known stressor. In the current study, both available support and enacted support will be measured, and 14 of the highest loading items will be included. This measure is best viewed as a measure of that aspect of rejection involving the extent to which significant others are unlikely to and fail to support the target.

Vaux, Riedel, and Stewart (1987) computed Cronbach alphas for each of the five SS-B mode scales (both from family and from friends), for both black and white student samples. Of the 20 alphas resulting, the lowest was .82. Mean alphas for the family and friend support mode scales were .90 and .89, respectively for the black sample, and .86

and.83 for the white sample. In short, all SS-B mode scales showed excellent internal consistency. Factor loadings of SS-B items showed that with one exception, all items loaded significantly and very highly (most > .70) on the factor they were designed to measure, and none loaded highly (most < .40) on any other factor.

Examples of items are: "Comfort them when they are upset" (emotional support subscale), "Help them do something" (practical assistance subscale), "Tell them about the available choices and options for dealing with their problems" (advice/guidance subscale), "Paid for my lunch when I was broke" (financial assistance subscale), and "Chatted with me" (Socializing). Subjects are asked to respond by indicating the degree to which it is likely that a significant other (the person with whom they engage in the most reassurance-seeking behavior) would engage in these supportive behaviors if the need arose and by indicating to what extent the behavior did occur. In the current study, the significant other will also complete the questionnaire by indicating how likely they would be to support the target if the need arose and to what extent they did support the target. Items will be summed across all subscales and then averaged to compute a total score for enacted support as reported by significant others.

3.5.5.7 Test of Negative Social Exchange

The TENSE (TENSE, Ruehlman & Karoly; 1991) is an 18-item measure designed to tap four modes of negative interpersonal transactions: hostility/impatience, insensitivity, interference, and ridicule. Thirteen of the highest loading questions will be used. Ruehlman and Karoly found alpha coefficients for each of the four scales were .83 (Hostility/Impatience), .82 (Insensitivity), .75 (Interference), and .70 (Ridicule). The

test-retest reliability coefficients for each of the scales were Hostility/Impatience, $r(64) = .80$, $p<.001$; Insensitivity, $r(61) = .72$, $p<.001$; Interference, $r(64) = .65$, $p<.001$; Ridicule, $r(65) = .70$, $p<.001$. This measure is best viewed as a measure of that aspect of rejection involving the extent to which significant others are willing to behaviorally display their negative evaluation of the target.

Examples of items are: "Would lose your temper with them" (hostility/impatience subscale), "Would not try to see their point of view" (insensitivity subscale), "Would disagree with them" (interference subscale), "Would criticize them or make fun of them behind their back" (Ridicule subscale), and "Would try to avoid them". Subjects are asked to respond by indicating the degree to which it is likely that a significant other would engage in these behaviors and by indicating to what extent the behavior did occur. In the current study, significant others will also be asked to complete this questionnaire by indicating how likely they would be to act negatively towards the target if a problem arose and to what extent they did act negatively towards the target. Items will be summed across all subscales and then averaged to compute a total score for reported negative interactions by significant others.

3.5.5.8 RAND 36-Item General Health Survey 1.0 (GHS)

The GHS is the most commonly used measure of quality of life/health status in the world today (Staquet, Hays, & Fayers, 1998). It was developed with the goal of offering a brief, efficient alternative to existing measures, which are significantly longer and/or are interview-based (Ware & Sherbourne, 1992). This 36-item self-report measure includes questions in eight domains: physical functioning, role limitations due to physical

health, role limitations due to emotional problems, energy/fatigue, emotional well being, social functioning, pain, and general health. Responses are scored on several different Likert scales (ranging from 1 - 2 to 1 - 6), and these responses are transformed to a linear scale ranging from 0-100, with high scores representing better functioning. Items from individual scales are averaged together to produce scores for each of eight scales (Hays, Sherbourne, & Mazel, 1993). The GHS has demonstrated good reliability and validity in patient populations (Hays, Sherborne, & Mazel, 1995). The subscale that measures impairment caused by physical impairment/illness will be used in analyses.

3.5.5.9 Pittsburgh Sleep Quality Index

The PSQI is an effective instrument used to measure the quality and patterns of sleep in the older adult. It differentiates "poor" from "good" sleep by measuring seven areas: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbance, use of sleeping medication, and daytime dysfunction over the last month. The client self-rates each of these seven areas of sleep. Scoring of answers is based on a 0 to 3 scale, whereby 3 reflects the negative extreme on the Likert Scale. A global sum of "5" or greater indicates a "poor" sleeper. In a study by Backhaus, Junghanns, Broocks, Riemann, and Hohagen (2002), validity analyses were calculated for PSQI data and data from sleep diaries, as well as polysomnography. To evaluate the specificity of the PSQI, 80 insomnia patients (mean age 46.3 yrs) were compared with a control group of 45 healthy subjects (mean age 43.3 yrs). Results show that in primary insomnia patients, the overall PSQI global score correlation coefficient of test-retest reliability was .87. Validity analyses showed high correlations between PSQI and sleep

log data and lower correlations with polysomnography data. A PSQI global score >5 resulted in a sensitivity of 98.7 and specificity of 84.4 as a marker for sleep disturbances in insomnia patients versus controls. It was concluded that the PSQI has a high test-retest reliability and a good validity for patients with primary insomnia.

3.5.6 Moderator Assessments

3.5.6.1 Reasons for Depression

The Reasons for Depression Questionnaire (RFD; Addis et al., 1995) consists of 48 items tapping 8 reasons for depression, that are rated on a 4-point scale (1= definitely not a reason; 2 = probably not a reason; 3 = probably a reason; 4 = definitely a reason). Factor analysis of the RFD has yielded eight stable factors (alphas range from .78 to .86), including existential, characterological, interpersonal conflict, intimacy, achievement, childhood, relationship, physical, and biological. Factor analysis also revealed two higher-order factors, individual/autonomous oriented reasons and interpersonally oriented explanations. Scores are derived by summing across items for each subscale. The intimacy subscale was used in the moderator analyses. Individuals reporting a 3 or greater on the intimacy subscale (items included: “No one really cares about me”, “I don’t feel loved”) were assigned a score of 1, meaning they believed intimacy issues were significantly contributing to their depression, and individuals reporting a score of less than 3 were assigned a score of 0.

3.5.7 Treatment Response

Consistent with recommendations by Jacobson and Truax (1991), participants were classified as responders if they achieved a level of improvement that was

statistically reliable. The reliable change index (RCI; x_2-x_1/S_{diff}) was computed for both depression measures (*i.e,* Beck Depression Inventory-II and Hamilton Depression Inventory). Those participants with RCIs greater than 1.96 for both of the outcome measures were defined as responders. Based on a 0.86 test-retest reliability for the BDI-II, participants had to demonstrate a drop of 10 points to be considered a responder. Based on a 0.95 test-retest reliability for the HDRS, participants had to demonstrate a drop of 4.5 points to be considered a responder.

3.5.8 Clinically Significant Change

Based on the recommendations by Jacobson and Truax (1991), participants were classified as showing clinically significant change if they demonstrated reliable change and if their level of functioning at posttreatment, as measured by the two depression inventories, was closer to the mean of a normal population than to the mean of a clinical population (see Jacobson and Truax, 1991). Based on BDI-II norms for a clinically symptomatic population (M = 25.45, SD = 9.99) and for a normal population (M = 2.88, SD = 2.44), participants had to drop to a score of 7 to be considered in the normal population. Based on HDRS norms for a clinically symptomatic population (M = 30.93, SD = 7.13) and for a normal population (M = 7.29, SD = 5.64), participants had to drop to a score of 17.7 to be considered in the normal population.

3.5.9 Relapse

Relapse was defined as a statistically reliable increase in depressive symptoms from posttreatment to follow-up as defined by the RC index. Treatment responders with RCIs greater than 1.96 (for both outcome measures) were defined as showing relapse.

3.6 Procedure

3.6.1 Participant Recruitment and Screening

Individuals from the UT Psychology 301 subject pool completed 2 web-based screening questionnaires (BDI-II and DIRI) and those who were potentially qualified and who expressed interest in the study were then contacted by email to set up an initial interview.

Once prospective participants arrived at the lab and provided written informed consent, a 10-min. screening interview was administered to obtain demographic information and to assess eligibility for the study (see Initial Interview Screening Form). Participants then completed three self-report forms: the BDI-II, BSI, and PDQ-4. This was followed by administration of the CIDI to assess for Axis I disorders. The investigator conducted all screening visits.

Participants who did not qualify for the study were offered a referral list of community mental health providers. Participants who qualified for the study were provided detailed information about study procedures and expectations (e.g., general descriptions of treatment components, waiting list procedures, number of assessments, stipends, and rights of human subjects volunteers).

3.6.2 Randomization

Using urn randomization, participants were matched on mood disorder status (sub-threshold versus meeting criteria), depression severity (mild, moderate, or severe), significant other status (boyfriend/girlfriend, friend, or family member), and reassurance-seeking (somewhat, quite often, or very much), and randomly assigned to one of the three

conditions. A total of eighty-three participants were randomized (ERS=33, EW=34, WL=16). Of these, seventy-eight participants (ERS=31, EW=32, WL=15) completed treatment. A total of five subjects dropped out (N=1), met criteria for clinical deterioration (N=3), or began treatment elsewhere (N=1) and were referred out of the study.

3.6.3 Assessment Visits

3.6.3.1 Baseline Assessment

A week following the screening interview, participants returned to the lab to complete baseline assessment measures and to begin treatment. During the baseline visit, participants completed the BDI-II, Hamilton, SDS, DIRI, RSQ, SAS, DES, PAS, SSB, TENSE, RFD, PSQI, and GHS. Participants were asked to deliver the significant other versions of the PAS, SSB, and TENSE to a family member, significant other, or close friend so that they might complete and return them by mail. Participants then were given the rationale for the treatment they had been assigned to and began treatment.

3.6.3.2 Mid-treatment Assessment

At sessions 1, 2, 3, and 4, participants completed a BDI-II, a shortened version of the DIRI, and shortened measures of the PAS, SSB, and TENSE. At session 2, participants also completed a measure of treatment credibility. These measures were used as manipulation checks and as measures of clinical deterioration.

Participants were informed that they would be asked to leave the study if they: 1) violated protocol by missing more than one session or failed to complete more than one

homework assignment; 2) violated protocol by starting a new medication or starting therapy; or 3) exhibited signs of clinical deterioration (i.e., developed another serious mental disorder, exhibited significant increases in depressive symptoms or suicidal intent, etc…). For participants who violated protocol, it was determined whether they could remain in treatment or not, but their data were not included in the completer analyses. Participants who displayed signs of clinical deterioration were officially removed from the completer sample, referred to the community/counseling center for treatment, and had the option of unofficially attending study treatment sessions.

3.6.3.3 Post-treatment Assessment

The same pre-treatment self-report measures were scheduled for administration at the final treatment session. Finally, participants were asked to deliver the significant other versions of the PAS, SSB, and TENSE to a family member, significant other, or close friend so that they might complete and return them by mail.

3.6.3.4 6-week and 3-Month Follow-up Assessment

The same self-report measures were mailed to participants approximately six weeks and three months after the final treatment session. Similarly, measures were mailed to a family member, significant other, or close friend so that they might complete and return them by mail.

3.6.4 Treatment conditions

Four one-hour individual sessions were conducted by the principal investigator over a period of four weeks with each individual. Participants were strongly encouraged to attend all sessions and missed sessions required a make-up session.

3.6.4.1 Excessive Reassurance-Seeking Fading Treatment Group

Participants who received the ERS-Fading treatment came into the lab individually for four 60-minute sessions with a therapist over a 4-week period. They were told that they would be asked to reduce their excessive reassurance-seeking over the 4-week period. They were given the rationale for this request, which included: 1) education about how their excessive reassurance-seeking may actually reinforce maladaptive, depressogenic beliefs and rejection sensitivity, and 2) education about how their excessive reassurance-seeking may elicit negative reactions from significant others which could exacerbate current depressive symptoms. Throughout treatment, participants were asked to reflect on their relationships by identifying and re-evaluating internal (i.e., negative thoughts about oneself) and external triggers (i.e., the behaviors of significant others) for their reassurance-seeking. Participants' inaccurate perceptions of themselves and their significant others' actions were examined through cognitive restructuring and alternative, more accurate self and other perceptions were generated. Participants were also asked to identify all the ways in which they seek reassurance and were asked to reduce their excessive reassurance-seeking within their significant relationships. Participants were asked to verbally communicate to the therapist what effect this had on their rejection sensitivity and on the quality of their relationships.

3.6.4.2 Expressive Writing Treatment Group

An alternative treatment was included in order to control for expectancy effects, non-specific treatment effects, and time spent reflecting on how relationships impact self-concept and mood. Participants in the Alternative Treatment group came into the lab individually for four 60-minute sessions over a 4-week period. They were asked to engage in an expressive writing task that encouraged them to reflect on and write about the ways in which their relationships impact their self-concept and mood, but were not given instructions to reduce their reassurance-seeking. They were given the rationale that 1) prior research has shown that expressive writing has been shown to lead to enhancements in mood, and 2) expressive writing has been shown to lead to enhancements in relationship quality. Every week, participants were asked to verbally communicate to the therapist how the writing had affected their mood, thoughts, behaviors, and relationships over the past week.

At the end of the 4-week treatment, non-responders in the Alternative Treatment were offered the ERS-fading treatment or were referred to the appropriate places for treatment. At the end of the 3-month follow-up period, all other participants in the Alternative Treatment condition were offered the ERS-fading treatment or were referred to the appropriate places for treatment. No Expressive Writing participants expressed interest in receiving the ERS-fading treatment.

3.6.4.3 Wait-list Control

A wait-list condition was included to control for the effect of time on depressive symptoms. Participants who were put on the wait-list for the treatment were asked to

come to the lab to complete baseline questionnaires and then returned to the lab three weeks later to complete post-treatment questionnaires. After pre- and post- data were collected, participants were offered the ERS-Fading treatment or were referred to the appropriate places for treatment. Five Wait-list participants expressed interest in receiving the ERS-fading treatment. Of these, all five completed the treatment.

3.7 Treatment Adherence

A doctoral-level psychology student, trained to recognize individual treatment components, reviewed a sample of treatment audiotapes and a sample of writing samples to assess for adherence to treatment. Assessment forms were comprised of 7 to 11 questions, depending on the number of treatment components relevant to session number. In every form, some items were devoted to therapist behaviors that were unique to the treatment modality being rated (prescribed), and some items were devoted to behaviors that would be considered protocol violations (proscribed) (Waltz, Addis, Koerner, & Jacobson, 1993). For example, a prescribed item for ERS-fading Session 2 was, "Were the triggers for the participant's excessive reassurance-seeking delineated?", while a proscribed item for this same session was, "Were family of origin issues/childhood issues discussed?" Similarly, a prescribed item for Expressive Writing Session 2 was, "Did the participant write about how people have acted towards them in the past week and how this affected their self-concept?", while a proscribed item for the same session was "Were other content areas contributing to depressed mood explored in depth?" Each item on the adherence measure was rated dichotomously based on whether the treatment component was or was not present.

3.8 Treatment Competence

A graduate level psychologist experienced in cognitive-behavioral therapies reviewed a sample of treatment audiotapes to assess for skill of therapy delivery in the ERS-Fading condition. Assessment forms were composed of 3 to 4 questions, depending on the number of treatment components relevant to session number. Only prescribed therapist behaviors that were included on each measure. Responses were provided on a Likert scale ranging from 1 to 5 (1 = outstanding, 5 = very poor). The mean of responses was calculated for each session reviewed, and an overall treatment competence average was obtained.

CHAPTER 4: RESULTS

4.1 Characteristics of Participants

Of 83 participants, 61% met criteria for an Axis I mood disorder. 89.2% percent of the sample was female, ages ranged from 18 to 24 (M = 18.9; SD = 1.11), and all participants were university students. The ethnic breakdown of the sample was 65% Caucasians, 12% Asian-American, 21% Latino, 1% African-American, and 1% other.

4.2 Attrition

Every session was attended by the 78 completers. Of the 5 non-completers, one EW participant dropped out after session 2, and one WL participant dropped out after baseline measurements were taken. Two ERS participants and one EW participant met criteria for clinical deterioration and were withdrawn from the completer sample and referred for non-study treatment. Of these three, one ERS participant completed one additional treatment session and the remaining two attended all 4 sessions.

Sixteen of sixty-seven participants (24%) failed to return their 6-week follow-up assessments (7 ERS, 9 EW). Nineteen of sixty-seven participants (28%) failed to return their 3-month follow-up assessments (9 ERS, 10 EW). Attrition analyses revealed that participants who failed to return follow-up questionnaires did not differ from participants who did by condition, gender, baseline depressive symptoms (BDI, HDI) mood disorder diagnostic status, ethnicity, medication status, or therapy status. However, they did score significantly higher on the BDI at posttreatment ($F(1,67)=4.83$, $p<0.05$, 6-week follow-up; $F(1,67)=11.59$, $p<0.05$, 3-month follow-up) than those who returned questionnaires. Therefore, follow-up analyses should be interpreted with caution.

4.3 Treatment Integrity

4.3.1 Treatment Adherence

A random sample of sessions was obtained so that at least 6 samples of every session number (1 through 4) were reviewed for adherence for both the ERS-Fading and Expressive Writing conditions. A total of 48 sessions (25%) across both conditions were reviewed. Analysis of adherence showed 100% adherence to prescribed behaviors and 98% adherence to proscribed behaviors in the ERS-fading condition. Analysis of adherence showed 98% adherence to prescribed behaviors and 98% adherence to proscribed behaviors in the EW-fading condition.

4.3.2 Treatment Competence

A total of 24 ERS-Fading sessions were reviewed. Evaluation showed a mean of 1.37 (*SD* = 0.09). These reflected good skill level of treatment delivery.

4.4 Treatment Credibility and Expected Level of Improvement

Table 1 presents the means and standard deviations of the treatment credibility baseline measures by condition. An ANCOVA confirmed that mean credibility and expected level of improvement, as measured by the RTQ (Borkovec & Nau, 1972), were comparable across the two treatment conditions in both completer and intent-to-treat analyses, after controlling for medication status.

Table 1. Treatment Credibility

	ERS			EW		
	N	*M*	*SD*	*N*	*M*	*SD*
Credibility	33	5.81	1.57	34	5.69	1.35
Expected % Improvement	33	46.88	19.12	34	48.64	18.72

4.5 Baseline Differences

To examine whether the randomization procedure had resulted in equivalent groups, baseline scores on clinical outcome measures and continuous demographic variables were subjected to a univariate analysis of variance (ANOVA). Categorical variables were subjected to Chi-square analyses.

4.5.1 Demographic Variables

Table 2 presents the percentages, means, and standard deviations of the primary demographic variables by condition. Analyses revealed that the groups did not differ in age, gender, ethnicity, significant other status, or employment status.

Table 2. Demographic characteristics by Condition

Demographic Characteristic	ERS (N=33)	EW (N=34)	WL (N=16)
Age (yrs)			
M	18.67	18.91	19.13
SD	0.82	1.26	1.26
Gender (%)			
Female	94	91	75
Ethnicity (%)			
African-American	0	2	0
Asian-American	12	12	13
Caucasian	70	56	75
Latin-American	15	30	12
Other	3	0	0
Significant Other (%)			
Boyfriend/Girlfriend	48	47	69
Friend	52	44	31
Family Member	0	9	0
Employment (%)			
Full-time Student	70	59	81
Student + Part-time	30	41	19

4.5.2 Clinical Variables

Table 3 presents the percentages, means, and standard deviations of the primary clinical variables by condition. Analyses revealed that the groups did not differ on any of the outcome measures at pre-treatment. The groups did not differ on mood disorder diagnostic status, co-morbid disorder diagnostic status, or therapy status. However, groups did differ on medication status (χ^2=8.08, p<0.05).

Table 3. Clinical Characteristics at Baseline by Condition

Clinical Characteristic	ERS (N=33)	EW (N=34)	WL (N=16)
Diagnostic Status (%)			
Major Depression, Rec., mod.	9	9	13
Major Depression, Rec., mild	6	12	18
Major Depression, Rec., in p.r.	31	12	25
Major Depression, Single, mod.	3	0	0
Major Depression, Single, mild	3	6	6
Major Depression, Single, in p.r.	0	17	0
Dysthymia	3	3	0
Adjustment Dis. w/ Dep. Mood	3	6	0
Sub-threshold	42	35	38
Co-morbid Diagnoses (%)			
One or more	33	35	19
None	67	65	81
Current Psychotherapy (%)			
Yes	15	3	6
Current Medications (%)			
Yes	27	3	13
Outcome Measures (M,SD)			
Beck Depression Inventory	21.42(8.90)	21.91(8.62)	22.75 (8.86)
Hamilton Depression Rating Scale	20.33(9.00)	19.76(9.01)	21.43(10.03)
Sheehan Disability Scale	13.30(5.46)	13.44(6.01)	11.94 (6.41)

4.5.3 Excessive Reassurance-Seeking

Table 4 presents the means and standard deviations of baseline, posttreatment,

and liberal follow-up ERS scores by condition. ANOVAs were conducted with baseline scores as DVs and treatment condition as the IV to determine whether randomization was successful. Within-group effects were computed for each separate condition using paired sample t-tests. Differential treatment effects were tested using ANCOVAs with ERS residualized change scores as the DV, the treatment condition as the IV, and medication status as a covariate. LSD post-hoc analyses were then conducted to evaluate treatment group differences between ERS-Fading and Expressive Writing, between ERS-Fading and Wait-list, and between Expressive Writing and Wait-list. Treatment effects (time and time X condition) at 6-week and 3-month follow-ups were tested using repeated-measures ANOVAs with post-treatment, 6-week follow-up, and 3-month follow-up scores as DVs, treatment condition as the between-subject IV factor, and medication status and baseline scores as covariates.

Table 4. Excessive Reassurance-Seeking

	ERS			EW			WL		
	N	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
Depressive Interpersonal Relationships Inventory									
Pre	33	5.09	1.30	34	4.73	0.92	16	5.30	1.39
Post	33	2.70	1.19	34	3.02	1.59	16	4.30	1.65
FU1	33	2.52	1.07	34	2.76	1.48			
FU2	33	2.58	1.22	34	2.78	1.71			

Analyses revealed the groups did not differ on level of excessive reassurance-seeking at baseline. As shown in Table 4 and Figure 1, within-group completer and intent-to-treat analyses revealed significant drops in excessive reassurance-seeking in the ERS-fading treatment condition (p<0.01), the Expressive Writing treatment condition

(p<0.01), and the Wait-list condition (p<0.05). Intent-to-treat and completer analyses at follow-up assessments for the two active treatment groups (Wait-list participants were lost to follow-up) revealed that both the ERS-fading treatment and the Expressive Writing treatment maintained their gains at the 6-week and 3-month follow-ups, but showed no significant additional improvement at the two follow-up assessments (all ps>0.05).

Between-group analyses controlling for medication status revealed a differential treatment effect at posttreatment (F(2,78)=6.75, p <0.01, Completer; F(2,83)=6.49, p<0.01, Intent-to-treat), but not at either follow-up (all ps>0.05). Both treatment groups demonstrated equal reductions in ERS at posttreatment (p>0.05, ERS vs. EW) that were significantly greater than reductions demonstrated by the wait-list condition (p<0.01, ERS vs. WL; p<0.05, EW vs. WL).

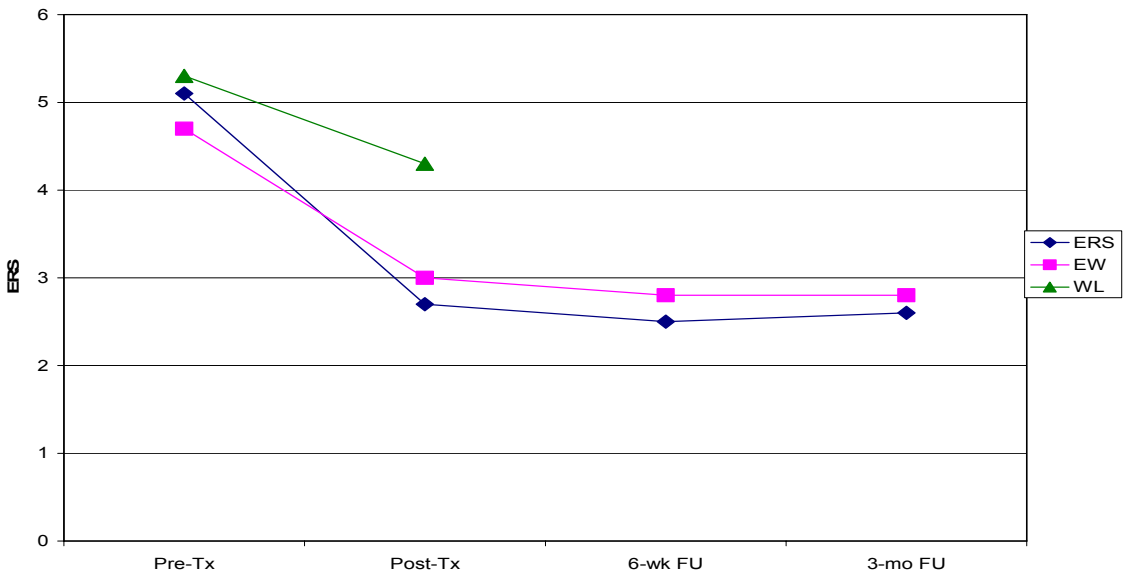

Figure 1. Excessive Reassurance-Seeking

Logistic regression analyses controlling for medication status revealed a differential treatment effect in ERS response rates at posttreatment (X^2 (2) = 6.65, p<0.05; adjusted relative odds ratio = 0.44; CI = 0.22-0.87). Response rates were 71%, 52%, and 31% for ERS-Fading, Expressive Writing, and Wait list, respectively. Although no differences were detected between ERS-Fading and Expressive Writing (X^2 (1) = 3.28, p=0.24; adjusted relative odds ratio = 1.93; CI = 0.64-5.83), differences were detected between ERS-Fading and Wait list (X^2 (1) = 6.14, p<0.05; adjusted relative odds ratio = 5.50; CI = 1.32-22.88), but were not detected between Expressive Writing and Wait List (X^2 (1) = 1.64, p=0.21; adjusted relative odds ratio = 2.40; CI = 0.61-9.46).

4.6 Outcome Analyses

Both completer and intent-to-treat outcome analyses at posttreatment were performed. The intent-to-treat analyses at posttreatment were performed using the Last Observation Carried Forward method (Mazumdar, Liu, Houck, & Reynolds, 1999). Both liberal and conservative intent-to-follow-up analyses were performed. In liberal intent-to-follow-up analyses that assumed maintenance of treatment gains, post-treatment scores were carried forward to 6-week and 3-month follow-ups for non-returners. In conservative analyses that assumed relapse, baseline scores were carried forward.

Pre- to post and pre- to follow-up within-group changes were computed for each separate condition using paired sample t-tests. Between-subject differential treatment effects at posttreatment were tested using MANCOVAs with residualized change scores of outcome measures as the DVs, the treatment condition as the IV, and medication status as a covariate. Separate analyses were performed for Depressive Symptoms, as measured

by the Beck Depression Inventory and the Hamilton Depression Rating Scale, and Quality of Life, as measured by the Sheehan Disability Scale. LSD post-hoc analyses were then conducted to evaluate treatment group differences between ERS-Fading and Expressive Writing, between ERS-Fading and Wait-list, and between Expressive Writing and Wait-list. Treatment effects (time and time X condition) at 6-week and 3-month follow-ups were tested using repeated-measures ANOVAs with post-treatment, 6-week follow-up, and 3-month follow-up scores as DVs, treatment condition as the between-subject IV factor, and medication status and baseline scores as covariates. Relapse rates and clinically significant change rates at posttreatment and 6-week and 3-month follow-up assessments were examined using logistic regression.

To assess the magnitude of treatment effects for each active treatment, controlled effect sizes were computed using the formula: Cohen's D *controlled* effect size = (post-treatment covariance adjusted mean of condition X – post-treatment covariance adjusted mean of condition Y) ÷ pooled SD of the adjusted means. Cohen (1988) proposes the following classification of effect sizes: small (0.20 – 0.49), medium (0.50- 0.79), and large (0.80 and above). These effect sizes are presented in the following sections.

4.6.1 Depressive Symptoms

Means and standard deviations for baseline, posttreatment, and liberal follow-up scores of the Beck Depression Inventory and the Hamilton Depression Rating Scale are presented in Table 5. Within-group analyses revealed that the ERS-Fading and Expressive Writing conditions showed significant pre to posttreatment reductions on both the BDI and HDRS (all *ps* <0.05), whereas Wait-list participants showed significant

reductions only on the HDRS (See Figure 2). Analyses at follow-up assessments for the two active treatment groups (Wait-list participants were lost to follow-up) revealed that the ERS-fading and the Expressive Writing treatments maintained their gains both follow-ups, but showed no significant additional improvement (all *ps*>0.05).

Between-group analyses controlling for medication status revealed significant differential treatment effects at posttreatment ($F(4,78)=3.39$, $p<0.05$, Completer; $F(4,83)=3.12$, $p<0.05$, Intent-to-treat), but not at either follow-up (all *ps*>0.05). Univariate follow-up tests at posttreatment revealed that the groups differed on the Beck Depression Inventory ($F(2,78)=6.15$, $p<0.01$, Completer; $F(2,83)=5.66$, $p<0.01$, Intent-to-treat), but not on the Hamilton Depression Rating Scale ($F(2,78)=1.08$, $p>0.05$, Completer; $F(2,83)=1.02$, $p>0.05$, Intent-to-treat). Univariate multiple comparison tests revealed that participants in both active treatment groups demonstrated significantly greater reductions in BDI scores relative to wait-list controls ($p<0.01$). However, the two active treatments did not differ significantly from one another.

Table 5. Depression Outcome Measures

	ERS			EW			WL		
	N	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
Beck Depression Inventory									
Pre	33	21.42	8.90	34	21.91	8.62	16	22.75	8.86
Post	33	12.30	9.56	34	14.15	10.50	16	20.56	10.80
FU1	33	13.64	11.26	34	13.65	10.44			
FU2	33	11.58	9.75	34	12.21	11.18			
Hamilton Depression Rating Scale									
Pre	33	20.33	9.00	34	19.76	9.01	16	21.43	10.03
Post	33	14.62	10.07	34	15.44	9.55	16	18.08	10.36
FU1	33	15.85	9.25	34	14.84	9.99			
FU2	33	13.97	9.27	34	13.47	10.37			

Controlled posttreatment effect sizes (BDI), for completer and intent-to-treat samples respectively, were .25 and .20 for ERS vs. EW, were 1.09 and 1.02 for ERS vs. WL, and were .85 and .81 for EW vs. WL. Controlled posttreatment effect sizes (HDI), for completer and intent-to-treat samples respectively, were.26 and .23 for ERS vs. EW .45 and .43 for ERS vs. WL, and were .20 and .20 for EW vs. WL.

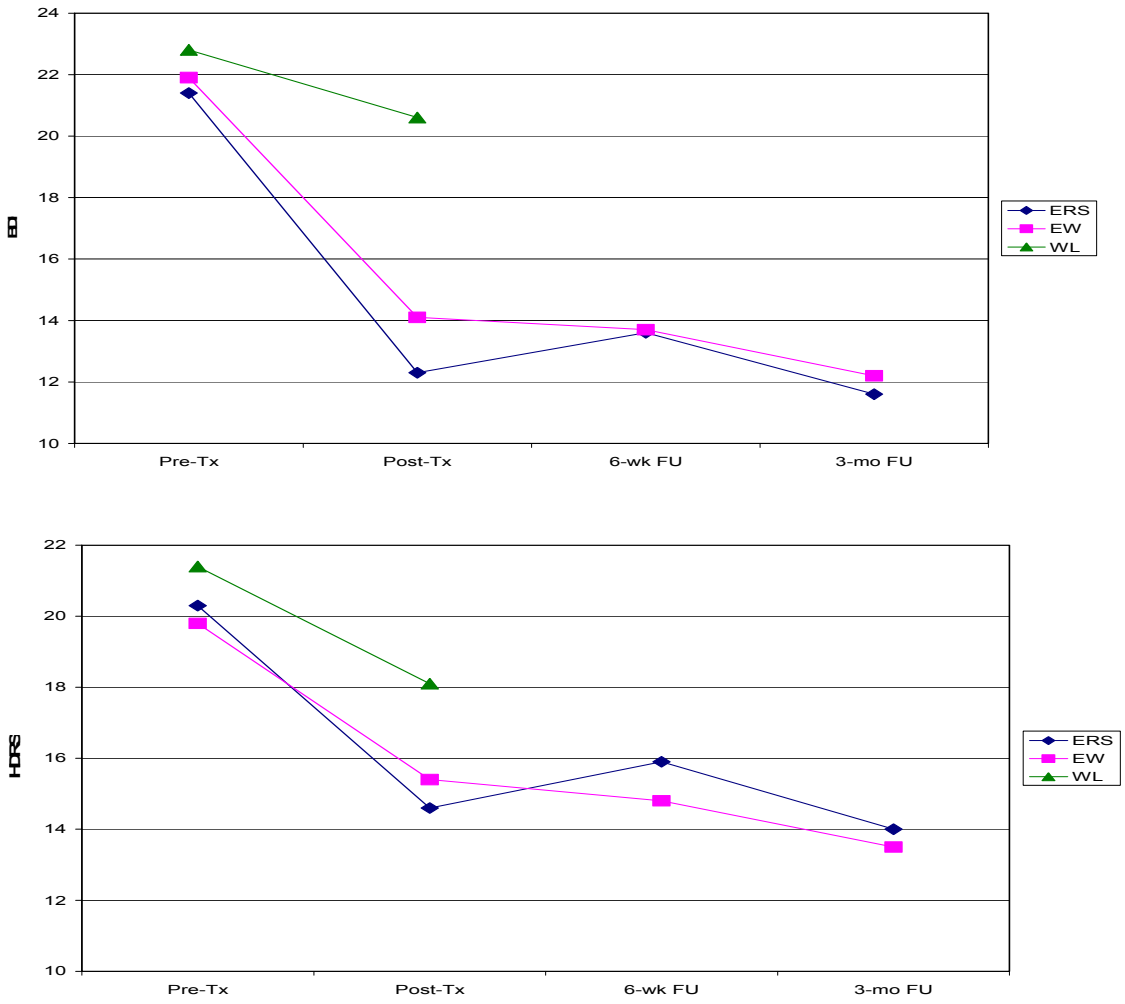

Figure 2. Beck Depression Inventory and Hamilton Depression Rating Scale

4.6.2 Quality of Life

Means and standard deviations for baseline, posttreatment, and liberal follow-up scores for the Sheehan Disability Scale are presented in Table 6. As shown in Figure 3, completer and intent-to-treat within-group analyses revealed significant increases in quality of life (or decreases in disability) in both the ERS-fading treatment condition ($p<0.01$) and the Expressive Writing treatment condition ($p<0.01$), but not in the Wait-list control condition ($p>0.05$). Analyses at follow-up assessments for the two active treatment groups revealed that both the ERS-fading treatment and Expressive Writing treatment maintained their gains at the 6-week and 3-month follow-ups, but showed no significant additional improvement at the two follow-up assessments (all *ps*>0.05).

Between-group analyses controlling for medication status revealed no significant differential treatment effects at posttreatment ($F(2,78)=1.98$, $p=0.15$, Completer; $F(2,83)=2.16$, $p=0.12$, Intent-to-treat), or at either follow-up (all *ps*>0.05).

Table 6. Quality of Life/Disability Measure

	ERS			EW			WL		
	N	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
Sheehan Disability Scale									
Pre	33	13.30	5.46	34	13.44	6.01	16	11.94	6.04
Post	33	7.70	5.65	34	8.56	5.55	16	10.38	6.96
FU1	33	8.41	6.44	34	8.35	6.42			
FU2	33	7.59	6.34	34	7.50	5.70			

Controlled posttreatment effect sizes, for completer and intent-to-treat samples respectively, were .23 and .15 for ERS vs. EW, were .66 and .64 for ERS vs. WL, and were .43 and .49 for EW vs. WL.

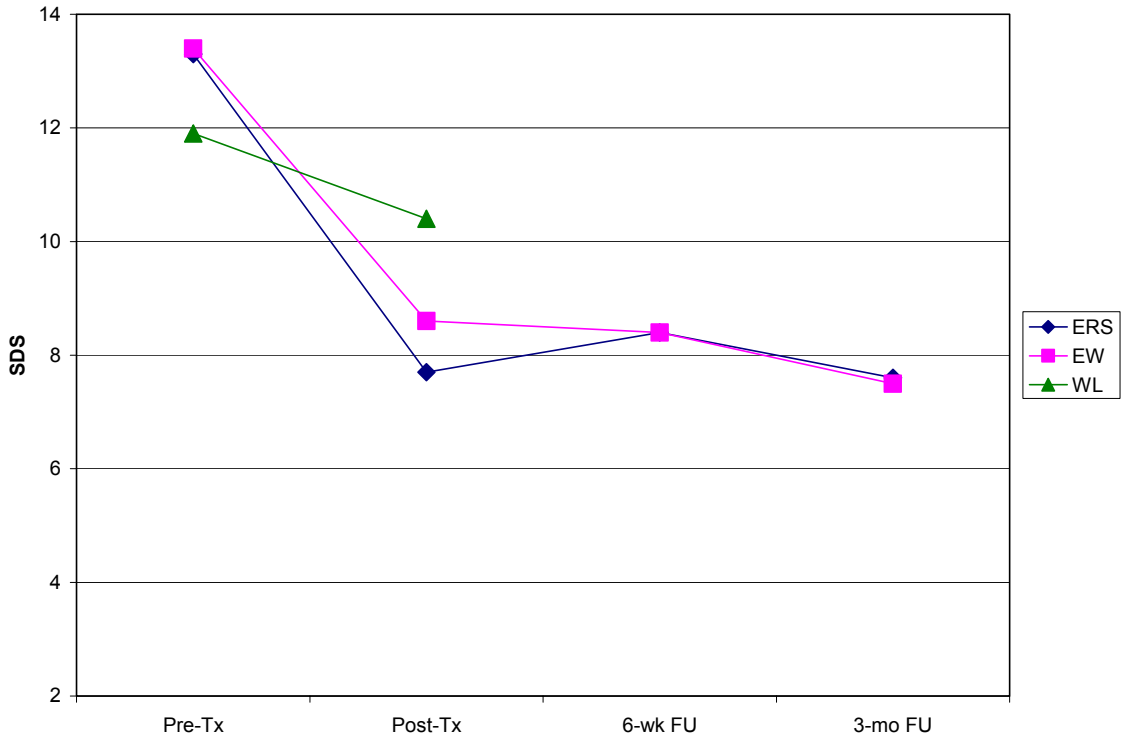

Figure 3. Quality of Life/Disability

4.7 Categorical Analyses of Clinical Response, Clinically Meaningful Change, and Relapse

Between-group differences in clinical response, clinically meaningful change, and relapse were examined using logistic regression, controlling for medication status. Adjusted odds ratios and 95% confidence intervals are reported as estimates of between-group differences in these categorical outcomes.

4.7.1 Analyses of Clinical Response

As can be seen in Figure 4, response rates at posttreatment were 48%, 28%, and 20% (Completers) and 46%, 27%, and 19% (Intent-to-treat) for the ERS-fading, Expressive Writing, and Wait-list control conditions, respectively. Analyses revealed marginally significant differences in responses rates between the ERS-Fading treatment condition and the Expressive Writing treatment condition (X^2 (1) = 2.63, p=0.11; adjusted relative odds ratio = 2.43; CI = 0.82-7.19). Analyses revealed marginally significant differences between ERS-Fading treatment and wait-list control (X^2 (1) = 3.64, p=0.07; adjusted relative odds ratio = 3.75; CI = 0.88-15.99). Analyses revealed no significant difference between Expressive Writing treatment and wait-list control (X^2 (1) = 0.18, p=0.68; adjusted relative odds ratio = 1.38; CI = 0.31-6.09).

4.7.2 Analyses of Clinically Significant Change

As can be seen in Figure 4, clinically significant change rates at posttreatment were 26%, 9%, and 7% (Completers) and 24%, 9%, and 6% (Intent-to-treat) for the ERS-fading, Expressive Writing, and Wait-list control conditions, respectively. Analyses revealed significant differences in clinically significant change rates between the ERS-Fading treatment condition and the Expressive Writing treatment condition (X^2 (1) = 5.26, p<0.05; adjusted relative odds ratio = 5.00; CI = 1.16-21.51). Marginally significant differences were detected between the ERS-Fading treatment and wait-list control (X^2 (1) = 3.85, p=0.10; adjusted relative odds ratio = 6.50; CI = 0.72-58.89). No differences were detected between the Expressive Writing treatment and wait-list control (X^2 (1) = 0.05, p=0.83; adjusted relative odds ratio = 1.30; CI = 0.12-13.70).

At the 6-week follow-up, clinically significant change rates were 24% and 12% for the ERS-Fading and Expressive Writing conditions, respectively. Analyses revealed no significant differences between the two treatments (X^2 (1) = 2.25, p>0.05; adjusted relative odds ratio = 0.39; CI = 0.11-1.37).

At the 3-month follow-up, clinically significant change rates were 30% and 21% for the ERS-Fading and Expressive Writing conditions, respectively. Analyses revealed no significant differences between the two treatments (X^2 (1) = 1.53, p>0.05; adjusted relative odds ratio = 0.53; CI = 0.19-1.51).

4.7.3 Analyses of Clinical Relapse

At the 6-week follow-up, relapse rates were 6% and 0% (Liberal) and 15% and 3% (Conservative) for the ERS-Fading and Expressive Writing conditions, respectively. Analyses revealed no significant differences in relapse rates between the two treatments (X^2 (1) = 3.34, p>0.05; adjusted relative odds ratio = 0.17; CI = 0.02-1.46, conservative).

At the 3-month follow-up, relapse rates were 0% and 3% (Liberal) and 9% and 3% (Conservative) for the ERS-Fading and Expressive Writing conditions, respectively. Analyses revealed no significant differences in relapse rates between the two treatments (X^2 (1) = 1.29, p>0.05; adjusted relative odds ratio = 0.29; CI = 0.03-2.80, conservative).

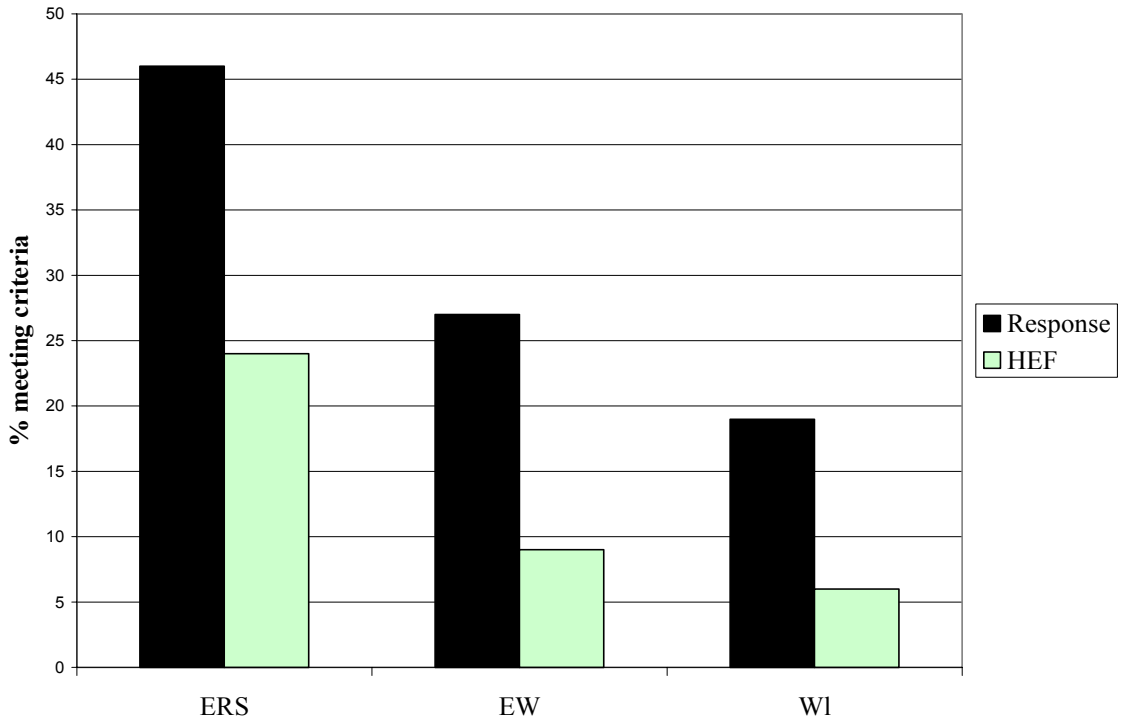

Figure 4. Percentage of Participants Achieving Clinically Significant Change and High End-State Functioning at Posttreatment (%)

4.8 Mediator analyses

We computed residualized change scores for both depressive symptom measures and each of the possible mediators. This was done by regressing the posttreatment scores on the pretreatment scores for all study participants.

The hypothesis that the effect of ERS-fading treatment on depressive symptoms would be mediated by excessive reassurance-seeking, rejection sensitivity, and interpersonal rejection, and the hypothesis that the effect of Expressive Writing treatment on depressive symptoms would be mediated by sleep quality and health quality, were tested in accordance with the analytic steps outlined by Baron and Kenny (1986).

In Step 1, we tested for the presence of a treatment effect by performing a multivariate analysis of variance (MANOVA) with treatment group (ERS vs. WL; EW vs. WL) as the grouping factor, residualized change scores of the two major clinical status measures (i.e., Beck Depression Inventory, Hamilton Depression Rating Scale) as the dependent variables, and medication status as a covariate. The MANOVA was followed up by univariate tests for both clinical status measures. One-tailed tests were used, based on unidirectional a priori hypotheses.

In Step 2, we tested the effects of each treatment on the proposed mediators by performing multiple ANOVAs with treatment group (ERS vs. WL; EW vs. WL) as the grouping factor, residualized change scores of the proposed mediators as the dependent variables, and medication status as a covariate.

In Step 3, the relationship between the proposed mediators and the two major clinical status measures were examined. Specifically, this step was tested by performing a MANCOVA with treatment group (ERS vs. WL; EW vs. WL) as the grouping factor, residualized change scores of clinical status measures as the dependent variables, and the residualized change scores of the mediators and medication status as the covariates. Significant multivariate effects of the covariates were followed up by univariate tests for both clinical status measures separately.

The final step tested the relationship between treatment and outcome after controlling for the effects of the proposed mediators. According to Baron and Kenny (1986), evidence for full mediation exists when the relationship between treatment and outcome is no longer significant after controlling for the effects of the mediator; whereas

evidence for partial mediation exists when the relationship between treatment and outcome is significantly attenuated (but still significant) after controlling for mediator effects. This step was tested by comparing the effect of treatment in the third step to the effect of treatment in the second step.

4.8.1 Mediation – Step 1: Effects of Treatment on Clinical Outcome

Significantly greater improvement was observed among ERS-Fading participants relative to controls and among EW participants relative to controls on clinical status measures (ERS vs. WL: $F(2,49)=5.75$, $p<0.01$; EW vs. WL: $F(2,50)=4.06$, $p<0.05$). Follow-up univariate tests revealed significant treatment effects for the BDI (ERS vs. WL, $F(1,49)=11.41$, $p<0.001$; EW vs. WL, $F(1,50)=5.45$, $p<0.05$), but not for the HDRS (ERS vs. WL: $F(1,49)=1.95$, $p=0.17$; EW vs. WL: $F(1,50)=0.30$, $p=0.59$). These data confirm that the first condition for mediation was met for the BDI.

Furthermore, analyses revealed marginally significant differences in response rates between the ERS-Fading and Expressive Writing (X^2 (1) = 2.63, $p=0.06$; adjusted relative odds ratio = 2.43; CI = 0.82-7.19; one-tailed), and between ERS-Fading and wait-list (X^2 (1) = 3.64, $p=0.04$; adjusted relative odds ratio = 3.75; CI = 0.88-15.99; one-tailed). Analyses also revealed significant differences in clinically significant change rates between ERS-Fading and Expressive Writing (X^2 (1) = 5.26, $p<0.05$; adjusted relative odds ratio = 5.00; CI = 1.16-21.51; one-tailed), and significant differences between ERS-Fading and wait-list (X^2 (1) = 3.85, $p<0.05$; adjusted relative odds ratio = 6.50; CI = 0.72-58.89; one-tailed).

4.8.2 Mediation – Step 2: Effects of Treatment on the Proposed Mediator – Excessive Reassurance-Seeking

Table 4 presents means and standard deviations for ERS at baseline and posttreatment. ERS-Fading participants and EW participants displayed significantly greater reductions in excessive reassurance-seeking relative to the Waitlist control group (ERS vs. WL:$F(1,49)=13.22$, $p<0.001$; EW vs. WL: $F(1,50)=4.52$, $p<0.05$). These data confirm that the second condition for mediation was met.

ERS-Fading participants did not demonstrate greater reductions in ERS or ERS response rates in comparison to Expressive Writing participants.

4.8.2.1 Mediation – Step 3: Relationship between Change in ERS and Treatment Outcome

Results revealed significant to marginally significant covariation between ERS and depressive (BDI) symptoms (ERS vs. WL: $F(1,49)=4.74$, $p<0.05$; EW vs. WL: $F(1,50)=5.25$, $p<0.05$), response rates (ERS vs. WL: X^2 (1) = 7.07, $p=0.07$; adjusted relative odds ratio = 0.52; CI = 0.26-1.06), and clinically significant change rates (ERS vs. WL: X^2 (1) = 16.51, $p<0.05$; adjusted relative odds ratio = 0.26; CI = 0.09-0.78).

These data confirm that the third necessary condition for mediation was met.

4.8.2.2 Mediation – Step 4: Effects of Treatment on Depressive Symptoms after Controlling for the Effects of ERS

Consistent with a mediational hypothesis, the effects of treatment on depressive symptom reduction became less significant after controlling for changes in excessive reassurance-seeking. Analyses revealed that changes in ERS partially mediated the

effects of ERS-fading treatment on BDI depressive symptoms ($F(1,49)=4.27$, $p=0.05$), and reduced the variance accounted for by treatment by 68%. ERS fully mediated the effect of ERS-fading treatment on response rates (X^2 (1) = 7.07, $p=0.17$; adjusted relative odds ratio = 0.68; CI = 0.31-1.51; one-tailed), and on clinically significant change rates (X^2 (1) = 16.51, $p=0.17$; adjusted relative odds ratio = 0.53; CI = 0.15-1.87; one-tailed). ERS fully mediated the effects of the Expressive-Writing treatment on BDI depressive symptoms ($F(1,50)=2.69$, $p=0.11$), and reduced the variance accounted for by treatment by 58%. These findings indicate that the fourth condition for mediation was also met.

In an attempt to establish temporal precedence by ruling out the possibility that changes in depressive symptoms led to changes in ERS, an ANCOVA was conducted with residualized change scores of excessive reassurance-seeking as the DV, the treatment condition as the IV, and medication status and residualized changes scores of depressive symptoms as covariates. Analyses revealed that the ERS-Fading condition exerted an effect on excessive reassurance-seeking, even after controlling for medication status and changes in depressive symptoms ($F(1,83)=6.42$, $p<0.05$, intent-to-treat). However, the Expressive Writing condition failed to exert an effect on excessive reassurance-seeking after controlling for medication status and changes in depressive symptoms ($F(1,83)=2.05$, $p>0.05$, intent-to-treat). This suggests that the treatments may have worked in different ways. Specifically, the ERS-Fading treatment may have made an impact on ERS which then led to changes in depressive symptoms, whereas the Expressive Writing treatment may have made an impact on depressive symptoms which then had an impact on ERS.

4.8.3 Mediation – Step 2: Effects of Treatment on the Proposed Mediator – Rejection Sensitivity

Table 7 presents means and standard deviations for all three rejection sensitivity measures at baseline and posttreatment. Analyses revealed no significant effect of treatment on rejection sensitivity, as measured by the Rejection Sensitivity Questionnaire, the Sociotropy-Autonomy Scale, and the Depressive Experiences Scale (ERS vs. WL: $F(3,49)=0.89$, $p=0.45$; EW vs. WL: $F(3,50)=0.28$, $p=0.84$). Follow-up univariate tests revealed similar findings for each individual measure (ps>0.10). Because this condition for mediation was not met, it was concluded that rejection sensitivity did not mediate the effect of either treatment on depressive symptoms.

Table 7. Rejection Sensitivity Measures

	ERS			EW			WL		
	N	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
Rejection Sensitivity Questionnaire									
Pre	33	13.01	7.16	34	13.78	7.00	16	12.84	7.22
Post	33	8.41	5.32	34	9.15	6.57	16	10.07	5.92
Sociotropy-Autonomy Scale									
Pre	33	56.76	19.26	34	51.96	17.91	16	50.52	13.23
Post	33	39.65	20.32	34	39.22	22.32	16	41.41	20.59
Depressive Experience Scale									
Pre	33	4.53	0.72	34	4.26	0.74	16	4.26	1.09
Post	33	3.83	0.87	34	3.87	0.89	16	4.05	0.81

4.8.4 Mediation – Step 2: Effects of Treatment on the Proposed Mediator – Interpersonal Rejection

Table 8 presents means and standard deviations for all three interpersonal rejection measures at baseline and posttreatment. Analyses revealed no significant effect

of treatment on interpersonal rejection, as measured by the Personal Attitudes Scale, the Social Support Behaviors Scale, and the Test of Negative Social Exchange (ERS vs. WL: $F(3,49)=0.70$, $p=.56$; EW vs. WL: $F(3,50)=0.52$, $p=.67$). Follow-up univariate tests revealed similar findings for each individual measure (ps > .16). Because this condition for mediation was not met, it was concluded that interpersonal rejection did not mediate the effect of either treatment on depressive symptoms.

Table 8. Interpersonal Rejection Measures

	ERS			EW			WL		
	N	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
Personal Attitudes Scale									
Pre	28	1.21	0.24	32	1.47	0.63	13	1.62	0.69
Post	22	1.23	0.27	26	1.31	0.40	10	1.57	0.43
Social Support Behaviors Scale									
Pre	28	3.17	0.72	32	3.17	0.59	13	3.31	0.58
Post	22	3.11	0.72	26	3.01	0.74	10	3.22	0.60
Test of Negative Social Exchange									
Pre	28	1.85	0.64	32	1.88	0.61	13	2.05	0.51
Post	22	1.82	0.79	26	1.80	0.67	10	2.07	0.62

Attrition analyses showed that at baseline, 8 out of 83 significant others did not complete questionnaires. Significant others who completed baseline packets differed from significant others who did not, in that their corresponding study participants displayed a lower mean baseline BDI score ($F(1,83)=7.34$, $p<0.05$) and a marginally lower mean baseline ERS score ($F(1,83)=3.51$, $p=0.06$). They did not differ on any of the participants' demographic variables or by condition.

At posttreatment, 25 of 83 significant others did not complete questionnaires. Significant others who completed posttreatment questionnaires differed from significant

others who did not, in that their corresponding study participants displayed a lower mean posttreatment BDI score ($F(1,83)=4.96$, $p<0.05$), a lower mean posttreatment HDI score ($F(1,83)=5.58$, $p<0.05$), a higher mean posttreatment quality of life score ($F(1,83)=7.24$, $p<0.01$), a lower mean posttreatment ERS score ($F(1,83)=6.07$, $p<0.05$), and a lower mean posttreatment SAS score ($F(1,83)=5.42$, $p<0.05$). Significant others who completed posttreatment questionnaires also differed from significant others who did not, in that their corresponding study participants displayed a marginally greater mean decrease in HDRS scores ($F(1,83)=3.00$, $p=0.09$) and a marginally greater mean decrease in ERS scores ($F(1,83)=3.72$, $p=0.06$) from baseline to posttreatment. They did not differ on any of the participants' demographic variables or by condition.

4.8.5 Mediation – Step 2: Effects of Treatment on the Proposed Mediators – Health Quality and Sleep Quality

Table 9 presents means and standard deviations for health quality and sleep quality at baseline and posttreatment. Analyses revealed no significant effect of treatment on health quality, as measured by the Rand General Health Survey (ERS vs. WL: $F(1,41)=0.15$, $p=.70$; EW vs. WL: $F(1,46)=0.04$, $p=0.85$). Analyses also revealed no significant effect of treatment on sleep quality, as measured by the Pittsburgh Sleep Quality Index (ERS vs. WL: $F(1,30)=0.72$, $p=0.41$; EW vs. WL: $F(1,32)=0.60$, $p=0.44$). Because this condition for mediation was not met, it was concluded that neither health quality nor sleep quality mediated the effect of either treatment on depressive symptoms.

Table 9. Health and Sleep Measures

	ERS			EW			WL		
	N	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
Rand General Health Survey									
Pre	28	87.50	34.36	30	65.15	35.87	16	73.08	27.88
Post	28	83.93	27.40	30	71.21	43.36	16	73.08	29.69
Pittsburgh Sleep Quality Index									
Pre	28	8.60	2.95	30	8.72	3.19	16	8.56	2.79
Post	28	7.71	3.24	30	8.19	3.81	16	8.50	3.21

4.9 Moderator Analyses

To examine whether the treatment effects were moderated by individual factors such as gender, mood disorder diagnostic status, ethnicity, co-morbid disorder diagnostic status, personality pathology, and reasons for depression, moderator analyses were conducted in accordance with the analytic steps outlined by Baron and Kenny (1986). In these analyses, gender (male vs. female), ethnicity (White vs. Non-White), mood disorder diagnostic status (diagnosed vs. sub-threshold), co-morbid disorder diagnostic status (Co-morbid diagnosis vs. no co-morbid diagnosis), personality pathology (low vs. high # of diagnoses met for), and reasons for depression (yes vs. no to "problems with intimacy have a significant influence on my depressive symptoms") were entered as categorical IVs along with the treatment variable, residualized change scores of outcome measures were entered as DVs, and medication status was entered as a covariate in MANCOVAs. Moderator status was assigned to those factors that yielded significant interactions with the treatment condition.

Analyses revealed no significant condition X moderator effects on depressive symptoms or quality of life for any of the potential moderators examined.

CHAPTER 5: DISCUSSION

5.1 Theories of Depression

The primary objective of the current treatment study was to experimentally test Coyne and Joiner's interpersonal theory of depression and a new cognitive-behavioral theory of depression with a population of depressed individuals demonstrating excessive reassurance-seeking and high rejection sensitivity. Given that these theories have in large part been tested within the context of correlational and prospective studies with non-depressed participants, the current study was a necessary next step in the exploration of these theories. The secondary objective was to determine whether a newly developed treatment, aimed at reducing reassurance-seeking, could serve as a viable treatment for depression.

Coyne's interpersonal theory of depression suggests that initially dysphoric individuals engage in excessive reassurance-seeking with significant others to assuage their feelings of worthlessness and fears of being abandoned (Coyne, 1976), which then elicits interpersonal rejection, further exacerbating depressive symptoms (Joiner, Alfano, & Metalksy, 1992). A new cognitive-behavioral theory of depression, developed by the authors, postulates that excessive reassurance-seeking serves as a compensatory strategy that temporarily reduces rejection sensitivity (anxious expectations of rejection), but in the long-run reinforces and interferes with reductions in rejection sensitivity (Salkovskis, Clark, Hackman, Wells, & Gelder, 1999), further exacerbating or maintaining depressive symptoms (Ayduk, Downey, & Kim, 2001).

The current study tested these proposed hypotheses by experimentally reducing excessive reassurance-seeking (ERS) within the context of employing a newly developed psychosocial intervention (ERS-Fading treatment) with individuals experiencing clinically significant depressive symptoms. Although the current study's design did not allow for conclusions to be made about the validity of Coyne and Joiner's theory as an etiological theory of depression, it did allow for conclusions to be made about its credibility as a maintenance theory of depression.

Eighty-three participants were randomly assigned to one of three treatment conditions: ERS-Fading, Expressive Writing (alternative treatment), or Wait-list control. The Expressive Writing paradigm was included to control for expectancy effects, non-specific treatment effects, and time spent reflecting on relationships. Given that a number of studies have failed to find consistent effects of writing on mood (Pennebaker, 2003), ERS-fading treatment was expected to outperform Expressive Writing both in terms of reductions in depressive symptoms and excessive reassurance-seeking. The wait-list control was included to control for passage of time effects.

5.2 Treatment Outcome

Results from the current study lend further support to the already established link between excessive reassurance-seeking and depressive symptoms. Analyses revealed that the ERS-fading treatment produced significant decreases in excessive reassurance-seeking, significant decreases in depressive symptoms, and significant increases in quality of life over time. Criteria for reliable change in depressive symptoms were met

by 46% of ERS-fading participants and 24% exhibited clinically significant change by the end of treatment.

The Expressive Writing treatment also produced significant decreases in excessive reassurance-seeking, significant decreases in depressive symptoms, and significant increases in quality of life over time. Criteria for reliable change in depressive symptoms were met by 27% of Expressive Writing participants and 9% exhibited clinically significant change by the end of treatment.

No differences were detected between the two treatment groups on credibility and expectancy for improvement ratings, or changes in excessive reassurance-seeking (ERS), depressive symptoms, and quality of life. However, differences were detected between treatment conditions for reliable and clinically significant change in that more ERS-fading participants demonstrated reliable and clinically significant change (i.e., participants moved into the normal range of functioning) at posttreatment than Expressive Writing participants. These findings provide partial support that the ERS-fading treatment was more effective than the Expressive Writing treatment.

Results revealed that Wait-list control produced non-significant decreases in depressive symptoms and non-significant increases in quality of life over time. Criteria for reliable change in depressive symptoms were only met for 19% of Wait-list participants and 6% demonstrated clinically significant change by the end of the waiting period. Surprisingly, wait-list controls also displayed significant decreases in excessive reassurance-seeking. However, these decreases were significantly smaller than decreases reported by either of the active treatment conditions.

Analyses revealed that both treatment groups produced decreases in depressive symptoms that were greater than and differed significantly from decreases demonstrated by Wait-list control, but only as measured by the Beck Depression Inventory. Analyses also revealed that both treatment groups demonstrated significant increases in quality of life, whereas wait-list did not; however, these differences were not statistically significant. Finally, ERS-Fading treatment produced greater response rates and greater rates of clinically significant change than Wait-list control, whereas Expressive Writing treatment did not.

These analyses indicate that the changes in depressive symptoms produced by both treatments and the reliable and clinically significant change rates produced by the ERS-fading treatment were not simply due to the passage of time. Specifically, both active treatments produced a mean pre to posttreatment change in excessive reassurance-seeking, which on average meant individuals moved from asking for reassurance "somewhat" to "not really" asking for reassurance. Both active treatments also produced a mean pre to posttreatment change on the Beck Depression Inventory, which on average meant individuals with moderate depression moved to the mild/borderline range. Similarly, both active treatments produced a mean pre to posttreatment change on the Sheehan Disability Scale, which on average meant individuals moved from feeling moderately disabled by their depressed mood to feeling mildly disabled by their depressed mood.

Analyses revealed that the treatment conditions equally maintained their gains at the 6-week and 3-month follow-ups in terms of levels of excessive reassurance-seeking,

depressive symptoms, and quality of life. In liberal and conservative analyses, the treatment groups did not differ in relapse rates or clinically significant change rates at the 6-week and 3-month follow-ups.

Participants who returned 3-month follow-up questionnaires differed from those who did not return questionnaires in that they demonstrated greater decreases in depressive symptoms as a result of active treatment. Therefore, although analyses seem to indicate that gains made by both treatment groups were maintained at follow-up, these analyses must be interpreted with caution given response bias.

5.3 Mechanisms of change

This pattern of results provides further evidence of the significant relationship between excessive reassurance-seeking and depressive symptoms that correlational and prospective studies have established thus far (Joiner et al., 1992; Potthoff et al., 1995; Joiner & Schmidt, 1998). Additionally, mediator analyses further revealed that excessive reassurance-seeking mediated the effect of treatment on depressive symptoms in both the ERS-fading treatment condition and the Expressive Writing treatment condition, when each treatment was compared to wait-list control.

These findings, although encouraging, do not rule out the possibility that reductions in depressive symptoms, as a result of treatment, in turn led to reductions in excessive reassurance-seeking. Although temporal precedence was not established, analyses suggested that the ERS-fading condition produced changes in excessive reassurance-seeking that were not solely a bi-product of changes in depressive symptoms. On the other hand, analyses suggested that the Expressive Writing condition produced

changes in excessive reassurance-seeking that were a bi-product of changes in depressive symptoms. These analyses provide evidence of mediational specificity, suggesting that the treatments worked through different pathways to impact depressive symptoms.

It is interesting to note that reductions in excessive reassurance-seeking and ERS response rates did not mediate the differential treatment effect on reliable and clinically significant change when the two active treatments were compared to one another. This begs the question of what did account for differences between the two treatment groups. One core difference between the two treatment groups was the amount of time spent with a therapist. In the ERS-fading condition, the therapist spent the entire session with participants processing how they had been able to change their excessive reassurance-seeking behavior and directing their attention towards exploring the ways in which this might have affected their mood, their attributional style, their self-concept, and their interpersonal interactions. In the Expressive Writing condition, the therapist spent a maximum of one minute per session with participants asking them how the writing had impacted their mood, their attributional style, their self-concept, and their interpersonal interactions. The type of attention given to ERS-fading participants may have helped those individuals, who would have otherwise ruminated on negative aspects of themselves and their relationships, maximize the benefits of reductions in their reassurance-seeking by taking in disconfirming evidence of their depressogenic thoughts. On the other hand, no therapist was present to help EW participants with similar ruminative tendencies break out of the cycle of negative thinking. Hence, some participants might have benefited minimally from the writing exercise whereas others

might have benefited immensely. These differences may have led to similar mean pre to posttreatment changes in continuous BDI scores but to differences in response rates and clinically significant change rates between the two treatments.

Contrary to what was hypothesized, mediator analyses revealed that interpersonal rejection, rejection sensitivity, sleep quality, and health quality did not mediate the effect of treatment on depressive symptoms for either treatment condition.

5.3.1 Interpersonal Rejection

The finding that interpersonal rejection was not a mediator of treatment effect is in direct contrast to Coyne and Joiner's interpersonal theory of depression (Joiner et al., 1999; Katz & Beach, 1997). There are many potential explanations for this finding. First, it is possible that their theory is incorrect and that excessive reassurance-seeking in and of itself does not cause increases in interpersonal rejection, which then are perceived by the depressed individual, further exacerbating depressive symptoms.

Second, it is possible that their theory is correct, but mainly in the context of superficial relationships. For example, Joiner's research has mostly been done within the context of freshman roommate relationships (Joiner, 1994). It is possible that within a less committed and less intimate relationship, excessive reassurance-seeking is less tolerable and is more likely to lead to rejection, in the form of negative appraisals, withdrawal of support, and criticism, that is perceived by the depressed individual which further exacerbates depressive symptoms. However, in the context of long-term, committed relationships, such as close friendships or romantic/family relationships where people have chosen to be with one another and have intimate knowledge of one another,

excessive reassurance-seeking may exert less of an effect on significant others' views of or outward behaviors towards the depressed individual.

For example, in Benazon's (2000) cross-sectional study of married couples with at least one depressed member, they found evidence for Joiner's theory in that excessive reassurance-seeking did make a significant contribution to partners' negative appraisals, even after controlling for spouse distress. However, excessive reassurance-seeking did not make a significant contribution to a more outward expression of rejection, Expressed Emotion, whereas spouse distress did. Given that Joiner's theory and the Expressed Emotion literature (Hooley & Teasdale, 1989) would suggest that rejection or criticism must be perceived by the depressed individual for exacerbation of symptoms or relapse to occur, this study's findings suggest that partner distress, rather than excessive reassurance-seeking, may be the active ingredient which produces recognizable interpersonal rejection, leading to increases in depressive symptoms or relapse. In partial defense of Joiner's theory, it would be interesting to test whether excessive reassurance-seeking is an active ingredient in producing more outward expressions of rejection, such as Expressed Emotion, in superficial relationships.

Third, it is possible that the theory applies to the onset or etiology of depression, but not its remission or maintenance. Specifically, it may be the case that as dysphoria sets in and excessive reassurance-seeking persists, significant others form a negative impression of the depressed person and reject the person, increasing the depressed individual's symptoms. It may be the case that this impression becomes ingrained in the minds of significant others and is somewhat impervious to modification even when the

depressed individual makes an effort to reduce reassurance-seeking. Or it could be the case that the only significant others left in the depressed person's life at that stage are more tolerant of reassurance-seeking. At that point, other reasons might account for why reducing reassurance-seeking leads to reductions in depressive symptoms.

Fourth, there was a ceiling effect on all measures of relationship quality at the beginning of treatment, making it difficult to detect improvements across time. Furthermore, the measures may not have been sensitive enough to pick up on minor, but meaningful, changes that were occurring within relationships. Additionally, there was a response bias in that significant others who did not return questionnaires were associated with participants who on average were more depressed and sought more reassurance at baseline and posttreatment. Perhaps these participants were more insecure and concerned about the status of their relationships and were therefore leery of asking their significant others to complete questionnaires about them. It is also possible that significant others who did not return questionnaires did so, because they felt and acted more negatively towards participants and might not have wanted to admit this openly. This response bias might have led to inflated positive scores at baseline.

Fifth, it is possible that the theory applies to some relationships and not others, causing wash-out effects, and at times is a true indicator of a bad relationship rather than a negative misconstrual of a good relationship. This notion mirrors Benazon and Coyne's (1999) insistence that reassurance-seeking not be ripped from its interactional context and reified as a trait of the reassurance seeker. They argue that the context of this kind of reassurance seeking, the target persons involved and what they do to perpetuate it, and a

sense of the larger context should be considered in this area of research. Verbal reports from study participants lend credence to Benazon and Coyne's (1999) concerns. For example, some study participants remarked that their significant others had noticed that they had been seeking less reassurance and responded positively by saying it made them feel like spending more time together and made them feel better about the relationship. Another scenario that evolved was one in which participants indicated that their significant other had not even noticed they had reduced their reassurance-seeking. A third scenario was one in which participants indicated that their significant others had noticed they had reduced their reassurance-seeking and became scared because they feared the depressed individuals might have stopped caring about their relationships and were cheating on them. A fourth scenario was one in which participants indicated that their significant others had noticed they had reduced their reassurance-seeking and felt insecure because they weren't necessarily the strongest partner any more or because they couldn't get away with being inconsiderate towards the participant any more. A final scenario was one in which participants indicated that their significant others had noticed they had reduced their reassurance-seeking and felt relieved, because it was a signal that both of them had stopped denying that the relationship was over and they could finally move on instead. Analyses demonstrated that in both treatment groups, roughly one third of significant others' opinions of study participants became more positive, one third remained constant, and one third became more negative. Similarly, analyses demonstrated that in both treatment groups, roughly one half of significant others reduced their support and/or increased in negativity and one half increased their support and/or

reduced their negativity. These differences in contexts and responses from significant others could have resulted in wash-out effects.

Sixth, many participants mentioned a host of interpersonal issues they were experiencing throughout the course of study that very likely had more of an impact on their relationship quality than changes in reassurance-seeking. For instance, participants spoke about money, school, and family issues that erupted, putting pressure on their relationships to supply support to offset the negative mood caused by these events. These interpersonal events, which most likely had huge effects on relationship quality, might have made the differences in relationship quality caused by reductions in reassurance-seeking more difficult to detect than if their relationships had been more stable.

5.3.2 Rejection Sensitivity

The finding that rejection sensitivity was not a mediator of treatment effect is not in line with current findings on the effects of safety behaviors and compensatory strategies on anxiety sensitivities. There are many potential explanations for this finding. First, it is possible that the theory is incorrect and that excessive reassurance-seeking itself does not reinforce rejection sensitivity, further exacerbating depressive symptoms.

Second, it is possible that only within the context of providing exposure therapy do reductions in compensatory strategies serve to further reduce rejection sensitivity. Most studies on this subject have shown that reductions in safety behaviors or compensatory strategies in conjunction with exposure to feared stimuli produce greater decreases in anxiety sensitivities than exposure alone (Wells, Clark, Salkovskis, Ludgate, Hackman, and Gelder, 1995; Sloan & Telch; Salkovskis, Clark, Hackman, Wells, &

Gelder, 1999). In the current study, participants were only asked to reduce their reassurance-seeking. They were not asked to expose themselves to potential rejection by self-disclosing about their depressed affect, which they feared would burden others, in conjunction with fading reassurance-seeking. It is possible that if participants had practiced self-disclosing without apologizing or seeking reassurance afterwards, reducing reassurance-seeking within this context would produce greater decreases in rejection sensitivity than self-disclosure alone.

Third, it is possible that reducing excessive reassurance-seeking may reduce rejection sensitivity, but only in the context of superficial relationships. Participants in the current study were involved in fairly intimate relationships with their significant others, and cared deeply about what their partners/friends thought about them, as is natural in more committed relationships. Therefore, they continued to look for signs of rejection and continued to care greatly about the opinion their significant others held of them.

5.3.3 Sleep Quality and Health Quality

Neither health quality nor sleep quality mediated the effect of either treatment on depressive symptoms. These findings are in contrast to the existing literature on expressive writing (Lepore & Smyth, 2002; Pennebaker, 1993; J Pennebaker, Colder, & Sharp, 1990; Smyth, Stone, Hurewitz, & Kaell, 1999; J. W. Pennebaker & Beall, 1986; J. W. Pennebaker et al., 1990, Mendolia & Kleck, 1993, Harvey & Farrell, 2003).

There are many potential explanations for this finding. First, it is possible that neither health quality nor sleep quality was affected by the interventions in the current

study. Second, it is possible that the measures were not sensitive to pick up on minor, but meaningful, changes that occurred. For example, on the health measure, participants were asked to indicate to what extent health problems limited them in their daily lives. Symptoms themselves were not assessed. It is possible that assessing impairment rather than symptoms resulted in null findings. Third, this population of individuals indicated they were in good health at the beginning of treatment. In fact, half of participants indicated they were not at all impaired by health problems. It is possible that there was a ceiling effect on this measure, making it difficult to capture improvements in health.

5.4 Moderator Analyses

Personality pathology did not moderate the effect of treatment on depressive symptoms or quality of life. Research has shown conflicting results as to the effect of co-morbid personality disorders on treatment outcome in depressed individuals (Mulder, 2002). Some studies have shown that that the presence of personality disorders is associated with worse outcome (Shea et al., 1990), and others have shown no difference in response (Hardy et al., 1995). The current study's finding lends support to research that has shown no differential treatment response for depressed individuals with co-morbid personality disorders. However, the current study's findings must be interpreted with caution, given that diagnoses were assigned based on participants' responses to a self-report personality questionnaire and were not further validated by a trained clinician.

The degree to which participants indicated that intimacy issues were a maintaining factor of their depressive symptoms did not moderate the effect of treatment on depressive symptoms or quality of life. This is in contrast to research that has

suggested that anaclitic patients, those with greater investment in interpersonal relatedness, show more improvement in brief IPT than introjective patients, those with greater investment in cognitive functioning (Blatt et al., 2002). It is possible that despite the weight participants assigned to interpersonal factors as a cause of their depression, the treatment was effective because it did address at least one issue that all participants said to some degree was contributing to their depressed mood. In order to test this theory more thoroughly, future studies should include depressed participants who indicate that alternative issues, such as achievement concerns, contribute in large part to their depression to test whether treatment response after receiving ERS-Fading is worse for these individuals.

Co-morbid disorder diagnostic status did not moderate the effect of treatment on depressive symptoms or quality of life. Again, there have been conflicting findings as to the effect of this variable on treatment outcome. In general the current study's findings appear to reflect findings in the literature that indicate that the presence of psychiatric comorbidity is generally not a contraindication for the use of CBT for depression (Rohde et al., 2001).

Ethnicity also did not moderate the effect of treatment on depressive symptoms or quality of life. Little research has been done that focuses on how empirically-supported treatments work or do not work with individuals of different cultural backgrounds (Iwamasa et al., 1996). Some studies have shown no cultural-specific differences in symptomatic recovery after receiving psychotherapy or pharmacotherapy (Brown et al., 1998), and others have (Zane et al., 1994). The current study supports the research that

shows no differences. However, all participants were university students, which means the level of acculturation in the minority samples was probably higher than it would have been had a community sample been included, therefore potentially limiting the impact ethnicity might have played in treatment outcome.

Finally, gender did not moderate the effect of treatment on depressive symptoms or quality of life, which is consistent with findings in the literature (Dobson, 1989).

5.5 Limitations and Future Directions

Several limitations deserve comment. First, the Expressive Writing alternative treatment condition was successful as a placebo treatment in that it produced expectations for improvement that were similar to what the ERS-fading treatment produced. However, it also produced changes in excessive reassurance-seeking, meaning it could not be used to rule out the possibility that expectations for improvement and non-specific factors alone drove treatment response in the ERS-fading condition. Future studies should include a true placebo condition. Future studies should also consider expressive writing as a treatment unto itself in helping to reduce excessive reassurance-seeking through self-reflection on the damaging effects of this behavior.

Second, it is possible that changes in excessive reassurance-seeking were a bi-product of changes in depressive symptoms rather than a driving force behind depressive symptom reduction. Analyses suggested this was not the case for the ERS-fading treatment, but was the case for the Expressive Writing treatment. However, given that temporal precedence was not formally established, this hypothesis must continue to be

entertained. Future studies should include more frequent measures in an attempt to establish temporal precedence.

Third, because the two proposed models of depression were disproved within the context of committed relationships, it is not fair to assume that these models would not have received support by testing them within the context of relationships of a more superficial nature. In an effort to further test these models, future studies should include participants in superficial and committed relationships in an effort to test within which context these models might apply. It is possible that superficial relationships are less tolerant of reassurance seeking than more committed relationships, perhaps because this behavior is more appropriate in that context.

Fourth, in an effort to further test the rejection sensitivity model, it might be beneficial to compare two conditions: 1) Self-Disclosure and, 2) Self-Disclosure plus Excessive Reassurance-Seeking Fading (ERS-Fading). Within this therapeutic context, self-disclosure plus ERS-Fading might demonstrate greater reductions in rejection sensitivity over exposure alone.

Fifth, the current study's measures were not always sufficient. For example, there was a ceiling effect at baseline on measures of interpersonal rejection, in that significant others reported low levels of rejection and high levels of support and respect. In future studies, it might be prudent to include more sensitive measures of rejection in future studies in an effort to capture small, but meaningful, changes in interpersonal rejection and to find ways to reduce social demands. Furthermore, the Hamilton Depression Rating Scale was not administered by a clinician to corroborate the self-report version

used in the current study. In future studies, it would be advisable to use the clinician-rated HDRS. In addition, the measure of excessive reassurance-seeking was also self-report in nature. Future studies should include more objective measures, in an attempt to capture how participants truly behave within their significant relationships.

Sixth, the treatment was brief in nature and was conducted by a graduate level therapist, which may have affected treatment effect sizes and response and clinically significant changes rates. Dobsons's (1989) meta-analysis on the efficacy of cognitive therapy for depression found effect sizes of 0.58 to 7.24, when cognitive therapy was compared to wait-list control, and effect sizes of -0.32 to 0.90, when cognitive therapy was compared to alternative treatments for depression that were not empirically supported. In addition, he found that treatments were generally administered by licensed clinicians and lasted an average of 14.9 weeks. Furthermore, Jacobson's study on cognitive-behavioral treatment for depression reported posttreatment (20 weeks) recovery rates of 46%, 51%, and 56% for behavior therapy, cognitive therapy, and cognitive-behavioral therapy, respectively. Based on these studies' findings, it is possible that had the current study's treatment been longer or had the therapist been more experienced, larger differential treatment effects and larger effect sizes would have emerged between active treatments and wait-list and between the two active treatments. Future studies should continue to use both depression measures and measures of quality of life within the context of longer-term treatment with experienced clinicians.

Seventh, the graduate level therapist conducted all therapy sessions, and therefore was not blind to condition. This may have biased the results of the study by creating an

allegiance effect. However, equal active treatment effects on continuous depressive symptom measures and treatment integrity analyses that demonstrated high adherence suggest this is not the case.

Eighth, although analyses revealed that participants maintained their gains at follow-up, the 3-month time period was relatively brief and thus did not provide sufficient evidence of long-term stability of changes in depressive symptoms and excessive reassurance-seeking. Additionally, there was an attrition bias at follow-up, making it difficult to know whether participants who did not complete questionnaires had similarly maintained their gains. Future studies should include longer-term follow-ups and assess for onset of future major depressive episodes.

Ninth, although significant others were not explicitly told what participants were being asked to do during the study, some participants informed significant others what changes they were attempting to make and others did not. This could have affected the results of the study. In future research, it would be interesting to get more feedback, both quantitative and qualitative, from significant others as to how changes in the study participant affected them and the relationship. It would also be interesting to do couples therapy and compare the effects of trying to change reassurance-seeking within that modality would be more successful than when done within the context of individual therapy.

Tenth, given that the majority of participants in this study had mild to moderate depression but were still well-functioning, the results of this study cannot be generalized to severely depressed, low functioning individuals. Furthermore, the study did not

include older individuals or married individuals, and a majority of the participants were women. Future research should include more dysfunctional, depressed, older, married individuals and more men.

Eleventh, given that the current study's design did not allow for conclusions to be made about the validity of Coyne and Joiner's theory as an etiological theory of depression, it would be interesting for future studies to instruct dysphoric individuals to engage in excessive reassurance-seeking to see if this would lead to greater increases in depression than would occur for individuals instructed not to engage in excessive reassurance-seeking.

Twelfth, given that excessive reassurance-seeking mediated the effects of both treatments on depressive symptoms but neither the interpersonal nor the cognitive-behavioral theory explained why this occurred, it will be important for future studies to tap other potential mediators in the relationship between ERS and depression. Following is a list of other potential mediating variables that were provided by participants from the ERS-fading condition.

First, some participants remarked that seeking less reassurance helped them focus less on, ruminate less about, and experience fewer intrusive thoughts about potential rejection. They also said it helped them ruminate less about the aspects of themselves that they disliked and that they believed others disliked, and enabled them to focus more on the aspects of themselves that they liked and felt others admired them for.

Second, some participants remarked that although they still looked for signs of rejection and cared about the opinion their significant others held of them, they tended to

interpret ambiguous cues from their significant others less negatively than they had before or they were able to talk themselves out of a negative interpretations more quickly.

Third, some participants remarked that breaking out of the cycle of reassurance-seeking allowed them to detach from harmful relationships and gave them the freedom to pursue and interact more with other people who had higher opinions of them and treated them better.

Fourth, some participants remarked that ending the cycle of reassurance-seeking allowed them to spend less time trying to build their self-esteem from receiving positive comments from others and more time in activities that gave them a sense of mastery and intrinsically increased their feelings of self-worth.

Fifth, some participants remarked that by reducing their reassurance-seeking they were able to engage in alternative behaviors that were more self-affirming. These behaviors included communicating in healthier ways with their significant others so that they were less apt to blame themselves for their significant others' bad moods and more likely to consider extenuating factors. Participants also said they were more able to accept social invitations from friends and believe that others really did want to spend time with them. Finally, participants said they were able to receive compliments more readily by saying "thank you" instead of discounting others' positive views of them.

Given these possible alternative mediators, it would be interesting for future studies to test them and the different pathways through which ERS-fading treatment and Expressive Writing treatment might affect depressive symptoms. For example, does ERS-fading treatment lead to reductions in excessive reassurance-seeking behavior which

frees the individual to engage in healthier interpersonal behaviors, coincides with and therefore reinforces the individual's positive self-schemas, and helps reduce the focus on thoughts about potential rejection, which then reduces depressive symptoms? On the other hand, does Expressive Writing help individuals face and make sense of their fears about rejection which then helps to reduce an individual's focus on thoughts about potential rejection and helps to reinforce positive self-schemas, which then leads to reductions in depressive symptoms, therefore removing the need for outside reassurance of one's worth? Verbal reports from Expressive Writing participants indicating that writing had helped them obsess less about rejection, interpret ambiguous social cues less negatively, and engage in different interpersonal behaviors suggest this might be the case.

Hence, in the case of the ERS-fading treatment, reductions in excessive reassurance-seeking might serve as an active ingredient in the effort to reduce depressive symptoms. In the case of the Expressive Writing treatment, reductions in excessive reassurance-seeking might serve as a marker that depressive symptoms have successfully been reduced.

5.6 Clinical Implications

What implications do these findings have for the treatment of depression? The response rates and level of improvement that occurred in just 3 weeks within the context of a very circumscribed intervention are encouraging. However, only 9% of participants in the Expressive Writing condition and only 27% of participants in the ERS-fading demonstrated clinically significant change by the end of the fourth treatment session. Given these rates of improvement, it seems more feasible to do what Joiner and

colleagues have suggested (Joiner et. al., 1999), which is to add a therapist-driven treatment component aimed at reducing excessive reassurance-seeking to an empirically validated treatment for depression, such as Cognitive Behavioral Therapy (Beck, Rush, Shaw, and Emery, 1979) or Interpersonal Therapy (Klerman, Weissman, Rounsaville, and Chevron, 1984) rather than to have it stand on its own.

In addition, although it appears as though the effects of Expressive Writing on depressive symptoms may not have been driven by reductions in excessive reassurance-seeking, it was of note that a number of participants in the Expressive Writing condition were able to reduce their depressive symptoms and reassurance-seeking on their own through writing about their rejection sensitivity and through completing questionnaires that enhanced awareness of their excessive reassurance-seeking. This finding suggests that it may be feasible to accomplish the goal of reducing depressive symptoms through writing exercises, coupled with awareness-enhancing questionnaires, rather than solely through therapist contact. However, lower response rates and clinically significant change rates at posttreatment in the Expressive Writing condition, in comparison to the ERS-Fading condition, suggest that therapist contact would be useful in identifying and intervening with those individuals who are not benefiting from the exercise.

Finally, some participants remarked that significant others responded poorly to their reductions in reassurance-seeking, because they made inaccurate assumptions about the motivating reasons for this change. Therefore, it might be prudent to either inform significant others of the treatment before instructing clients to make behavioral changes or to incorporate the treatment into couples therapy.

APPENDIX

UT DEPRESSION TREATMENT PROJECT
EXCESSIVE REASSURANCE SEEKING FADING MANUAL

SESSION 1

Administer baseline measures, weekly ratings form, and weekly DIRI. Check in to see how the participant is feeling and if there are any major events that the therapist needs to know about (i.e., suicidality).

I'd like to begin by discussing the purpose of the four sessions that you have volunteered to attend. You've been invited to be in this intervention because you have been experiencing feelings of sadness/depressed mood and because you tend to ask for a lot of reassurance from significant others to ensure that they still care about you and to ensure your own sense of worth. (Recap the specific ways they seek reassurance)

The main purpose of this intervention is to help you reduce your excessive reassurance-seeking behavior and examine the triggers/causes behind it in an effort to improve your mood.

The reason I believe this will be helpful is:

1) It has been found that when individuals engage in excessive reassurance-seeking, significant others usually respond with reassurance initially but then get irritated and begin to show this in interactions with you. As a result of getting negative reactions from others, you begin to feel worse and feel as though you were right! They really DON'T care about you! This can exacerbate depressed mood. By reducing your reassurance-seeking, I hope to see improvements in your relationship which should have a beneficial impact on your mood.
2) I also believe that another way ERS leads to more depression is through your thoughts. If you are constantly asking from reassurance from others, you are sending your brain the message that you could be rejected at any moment, that you probably are going to be rejected soon, that you are not a person worth being cared about, that you have to have everyone happy with you to be happy with yourself, and that you would fall apart if someone close to you didn't care about you or did not approve of you in some way. This thinking can exacerbate depression as well. By reducing ERS and engaging in other behaviors, you will no longer be sending yourself these detrimental messages and you should expect to see your mood improve.

Now that we've reviewed why ERS may be detrimental, I'd like to ask you, over the next four weeks, to try hard not to engage in reassurance-seeking. Instead, I'd like to help you learn how to evaluate the way you perceive and interpret interpersonal situations and the

ways you see yourself (that trigger you to engage in ERS). I expect this, in combination with curtailing your ERS, will help improve your mood.

SESSION 2

Administer the BDI, weekly ratings form, and weekly DIRI, to assess for clinical deterioration and suicidality. Also administer the RTQ. (10 minutes) Check in to see how the participant is feeling and if there are any major events that the therapist needs to know about.

Review Homework: Were you able to hold off somewhat on engaging in reassurance-seeking this week?

Triggers: What normally triggers you to want to seek reassurance? (This can be in the form of both external and internal triggers.)

Let's think of others ways to interpret these triggers. Then we'll evaluate which interpretations/thoughts seem the most accurate.

<u>External: (i.e., boyfriend looks irritated or bored with me, etc…)</u>

**Likelihood: Can you think of alternative thoughts for how to interpret the situation? (i.e., he is upset about his family situation, about school, etc….)

**Consequences: What if the other person were to act in a rejecting way? Does being rejected really mean you're worthless? Can you think of alternative thoughts about yourself and reasons why you value yourself and why others value you? (i.e., I'm a caring person; I'm fun; I listen well; I'm not responsible for others' negative feelings; I deserve good treatment; etc…)

**Can you think of alternative behaviors to engage in? How would you behave if you believed people aren't upset with you? (i.e., ask him what's upsetting him and let him talk about it, etc…)

<u>Internal: (i.e., I'm a burden; I bring other people down; I'm boring; I'm stupid)</u>

Can you think of alternative thoughts for how to think about yourself? (i.e., I'm a worthwhile person to hang out with; I'm caring and fun; I'm not stupid, etc…)

Can you think of alternative thoughts the other person might have about you? (i.e., my boyfriend wants to support me and doesn't see me as a burden; people tell me how much they like me because I ….; etc…)

**Can you think of alternative behaviors to engage in? How would you behave if you believed you are worthwhile? (i.e., accept offers to hang out instead of dismissing them, only hang out with people who treat me well, etc…)

SESSION 3

Administer the BDI, weekly ratings form, and weekly DIRI, to assess for clinical deterioration and suicidality. Check in to see how the participant is feeling and if there are any major events that the therapist needs to know about.

Review Homework: Were you able to hold off somewhat on engaging in reassurance-seeking this week? What triggers did you experience this week? (This can be in the form of both external and internal triggers.)

If they have been successful in reinterpreting their perceptions and in holding back on ERS, then simply review progress and assign same homework for next week.

If the participant has come up with a new trigger or had difficulty reinterpreting their perceptions, then repeat session 2 exercises below.

Let's think of others ways to interpret these triggers. Then we'll evaluate which interpretations/thoughts seem the most accurate.

<u>External: (i.e., boyfriend looks irritated or bored with me, etc…)</u>

**Likelihood: Can you think of alternative thoughts for how to interpret the situation?

**Consequences: What if the other person were to act in a rejecting way? Does being rejected really mean you're worthless? Can you think of alternative thoughts about yourself and reasons why you value yourself and why others value you?

**Can you think of alternative behaviors to engage in? How would you behave if you believed people care about you?

<u>Internal: (i.e., I'm a burden; I bring other people down; I'm boring; I'm stupid)</u>

Can you think of alternative thoughts for how to think about yourself?

Can you think of alternative thoughts the other person might have about you?

**Can you think of alternative behaviors to engage in? How would you behave if you believed you are worthwhile?

SESSION 4

Review Homework: Recap of previous week. Were you able to hold off somewhat on engaging in reassurance-seeking this week and to reinterpret your perceptions? Please share with me how the week went.

Review pros and cons: Since this is a newly developed treatment, I am interested in knowing what you felt the pros and cons of it were. Please feel free to share with me your reactions.

Administer post-treatment measures, weekly ratings form, and weekly DIRI, to assess for clinical deterioration and suicidality.

UT DEPRESSION TREATMENT PROJECT
EXPRESSIVE WRITING MANUAL

SESSION 1

I. Introduction (5 minutes)

I'd like to begin by discussing the purpose of the four sessions that you have volunteered to attend. You've been invited to be in this intervention because you have been experiencing feelings of sadness/depressed mood and because you tend to ask for a lot of reassurance from significant others to ensure that they still care about you and to ensure your own sense of worth. (Recap the specific ways they seek reassurance)

The main purpose of this intervention is to help you improve your mood through reflecting on and writing about how your relationships impact how you feel about yourself and about why you worry about what other people think about you. Right now, I'm going to have you come into this room, sit comfortably at the computer, and read the instructions. When you are done reading the instructions, please write your response in this file. I will come back to check on you in 40 minutes. Try to take the whole time in doing this, because we find that people who really allow themselves to reflect deeply on their relationships get the most benefit from the intervention. And finally, because people have many different responses to the writing exercise, when you return next week I will be asking you what effect the writing exercise had on your feelings, thoughts, and behaviors.

Reflective Writing Intervention

Both empirical and anecdotal evidence suggest that expressing one's thoughts and feelings through writing is associated with improved mental health. More specifically, in research studies, writing has been shown to be effective is reducing distress and improving one's mood. Anecdotally, people have sworn by writing as the means by which they have been able to get more in touch with themselves and the means by which they have been able to relieve some of the pain or distress they have felt in their lives and take steps to improve their lives.

In this study, we will be testing the effects of an intervention that asks you to deeply reflect on and write about how significant relationships impact your life. Research and anecdotal evidence suggests that this expressive writing intervention will lead to enhancements in the quality of your relationships and have significant positive effects on your mood. To test this, your mood and the state of your relationship will be monitored throughout this writing intervention.

Now it is time to begin reflecting on and writing about the impact of your relationships in your life. For the next 40 minutes, please write about your deepest

thoughts and feelings regarding the relationship you have with the 'significant other' whom you chose to be in the study with you. Write specifically about how their actions, ***in the past week****, have affected how you think and feel about yourself. If you like, you may also choose to reflect on how this relationship relates to past relationships you've had.*

Try to use all the time provided to you. This may not be an experience you allow yourself to have on a regular basis and we find that people who take more time to reflect and write benefit more from the experience. Also, as you write, feel free to write however you would like. It does not have to be organized. This is something just for you. I will not be reading what you write.

SESSION 2

Administer the BDI, weekly ratings form, and weekly DIRI, to assess for clinical deterioration and suicidality. Also administer the RTQ. (10 minutes) Check in to see how the participant is feeling and if there are any major events that the therapist needs to know about.

Welcome back. Again I'm going to have you write for 40 minutes. But before you begin, I want to ask you a few questions:

1. How was the writing exercise for you last week?
2. What kind of things did it bring up for you (emotions, memories, etc…)?
3. What impact did the exercise have on your feelings, behaviors, or thoughts at the time of writing and during the past week?

Allow the subject to write for 40 minutes.

SESSION 3

Administer the BDI, weekly ratings form, and weekly DIRI, to assess for clinical deterioration and suicidality. Check in to see how the participant is feeling and if there are any major events that the therapist needs to know about.

Welcome back. Again I'm going to have you write for 40 minutes. But before you begin, I want to ask you a few questions:

1. How was the writing exercise for you last week?
2. What kind of things did it bring up for you (emotions, memories, etc…)?
3. What impact did the exercise have on your feelings, behaviors, or thoughts at the time of writing and during the past week?

Allow the subject to write for 40 minutes.

SESSION 4

Welcome back. For the final session, I'm going to have you write for 15 minutes and then complete the final questionnaires. But before you begin, I want to ask you a few questions:

1. How was the writing exercise for you last week?
2. What kind of things did it bring up for you (emotions, memories, etc…)?
3. What impact did the exercise have on your feelings, behaviors, or thoughts at the time of writing and during the past week?

Allow the subject to write for 15 minutes.

Administer post-treatment measures, weekly ratings form, and weekly DIRI..

Check in to see how the participant is feeling and if there are any major events that the therapist needs to know about.

REFERENCES

Abramson, L.Y., Seligman, M.E.P., & Teasdale, J. (1978). Learned helplessness in humans: Critique and reformulation. *Journal of Abnormal Psychology*, *87*, 49-74.

Abramson, L.Y., Metalsky, G.I., & Alloy, L.B. (1985). Hopelessness depression: A theory-based subtype of depression. *Psychological Review*, *96*, 358-372.

Addis, M.E., & Jacobson, N.S. (1996). Reasons for Depression and the Process and Outcome of Cognitive-Behavioral Psychotherapies. *Journal of Consulting and Clinical Psychology*, *64*, 1417-1424.

Alloy, L.B., Clements, C., Kolden, G. (1985). *The Cognitive Diathesis-Stress Theories of Depression: Therapeutic Implications.* In Edited by.

Arieti, S., & Bemporad, J.R. (1980). The psychological organization of depression. *American Journal of Psychiatry*, *137*, 1360-1365.

Ayduk, O., Downey, G., Kim, M. (2001). Rejection Sensitivity and Depressive Symptoms in Women. *Personality and Social Psychology Bulletin*, *27*, 868-877.

Barrowclough, C., & Hooley, J.M. (2003). Attributions and expressed emotion: A review. *Clinical Psychology Review*, *23*, 849-880.

Beck, A.T. (1967). *Cognitive therapy and the emotional disorders.* New York: International Universities Press.

Beck, A.T. (1983). Cognitive therapy of depression: New perspectives. In P.J. Clayton & J.E. Barrett (Eds.), *Treatment of depression: Old controversies and new approaches* (pp 265-284), New York: Raven.

Beck, A.T., & Emery, G. (1985). *Anxiety disorders and phobias: A cognitive perspective.* New York: Basic Books.

Beck, A.T., Rush, A.J., Shaw, B.F., & Emery, G. (1979). *Cognitive therapy of depression: A treatment manual.* New York: Guilford.

Beck, A.T., & Steer, R.A. (1991). *Manual for the Beck Scale for Suicide Ideation.* San Antonio, TX: Psychological Corporation.

Beck, R., Robbins, M., Taylor, C, & Baker, L. (2001). An Examination of Sociotropy and Excessive Reassurance Seeking in the Prediction of Depression. *Journal of Psychopathology and Behavioral Assessment*, *23*, 2001.

Benazon, N.R., & Coyne, J.C. (1999). The Next Step in Developing an Interactional Description of Depression? *Psychological Inquiry*, *10*, 279-304.

Benazon, N.R. (2000). Predicting Negative Spousal Attitudes Toward Depressed Persons: A Test of Coyne's Interpersonal Model. *Journal of Abnormal Psychology*, *109*, 550-554.

Beutler, L.E., Scogin, F., Kirkish, P., Schretlen, D., Corbishley, A., Hamblin, D., Meredith, K., Potter, R., Bamford, C.R., & Levenson, A.I. (1987). Group cognitive therapy and Alprazolam in the treatment of depression in older adults. *Journal of Consulting and Clinical Psychology*, *55(4)*, 550-556.

Blatt, S.J. (1974). Levels of object representations in anaclitic and introjective depression. *Psychoanalytic Study of the Child*, *29*, 426-427.

Blatt, S.J., Shahar, G., & Zuroff, D.C. (2002). Anaclitic/Sociotropic and Introjective/Autonomous Dimensions. In J.C. Norcross (Ed.), *Psychotherapy*

relationships that work: Therapist contributions and responsiveness to patients, (pp.315-333). London: Oxford University Press.

Brennan, K.A., & Carnelley, K.B. (1999). Using Meaning to Mend Holes in the Nomological Net of Excessive Reassurance-Seeking and Depression. *Psychological Inquiry*, *10*, 282-285.

Broadhead, W.E., Blazer, D.G., George, L.K., Tse, C.K. Depression, disability days, and days lost from work in a prospective epidemiologic survey. *JAMA*. 1990;264;2524-2528.

Brown, C., Schulberg, H.C., Sacco, D., Perel, J.M., & Houck, P.R. (1999). Effectiveness of treatments for major depression in primary medical care practice: a post hoc analysis of outcomes for African American and white patients. *Journal of Affective Disorder*, *53*, 185-192.

Brown, G.W., & Harris, T. (1978). *Social origins of depression: A study of psychiatric disorder in women.* New York: Free Press.

Collins, N.L., Dunkel-Schetter, C., Lobel, M., & Scrimshaw, S.C.M. (1993). Social support in pregnancy: Psychosocial correlates of birth outcomes and postpartum depression. *Journal of Personality and Social Psychology*, *65*, 1243-1258.

Compas, B.E. (1987). Coping with stress during childhood and adolescence, *Psychological Bulletin*, *101*, 393-403.

Coyne, J.C. (1976). Toward an interactional description of depression. *Psychiatry*, *39*, 28-40.

Davila, J. (1999). Exploring Alternative Explanations for the Association Between Depression and Excessive Reassurance-Seeking. *Psychological Inquiry*, *10*, 285-287.

Devilly, G.J.,& Borkovec, T.D. (2000). Psychometric properties of the credibility/expectancy questionnaire. *Journal of Behavior Therapy & Experimental Psychiatry*, *31(2)*, 73-86.

Dobson, K.S. (1989). A meta-analysis of the efficacy of cognitive therapy for depression. *Journal of Consulting and Clinical Psychology*, *57(3)*, 414-419.

Downey, G., & Feldman, S. (1996). Implications of rejection sensitivity for intimate relationships. *Journal of Personality and Social Psychology*, *70*, 1327-1243.

Downey, G., Freitas, A.L., Michaelis, B., & Khouri, H. (1998). The Self-Fulfilling Prophecy in Close Relationships: Rejection Sensitivity and Rejection by Romantic Partners. *Journal of Personality and Social Psychology*, *75*, 545-560.

Downey, G., Lebolt, A., Rincon, C., & Freitas, A.L. (1998). Rejection sensitivity and children's interpersonal difficulties. *Child Development*, *69*, 1072-1089.

(Elkin, et al., 1989).

Freitas, A.L., & Downey, G. (1994). Rejection sensitivity as a mediator of the impact of childhood exposure to family violence to family violence on adult attachment behavior. *Development and Psychopathology*, *6*, 231-247.

Foa, E. B., & Kozak, M. J. (1986). Emotional processing of fear: Exposure to corrective information. *Psychological Bulletin*, *99*, 20-35.

Foa, E.B., Steketee, G., grayson, J.B., Turner, R.M., & Latimer, P.R. (1984). Deliberate Exposure and Blocking of Obsessive-Compulsive Rituals: Immediate and Long-Term Effects. *Behavior Therapy*, *15*, 450-472.

Greenberg, J. (1999). Is the Proposed Role of Excessive Reassurance-Seeking in Depression Excessive? *Psychological Inquiry*, *10*, 291-293.

Hammen, C. (1991). The generation of stress in the course of unipolar depression. *Journal of Abnormal Psychology*, *100*, 555-561.

Hammen, C.L., & Peters, S.D. (1978). Interpersonal consequences of depression: Responses to men and women enacting a depressed role. *Journal of Abnormal Psychology*, *87*, 322-332.

Harvey, A.G., Farrel, C. (2003). The Efficacy of a Pennebaker-Like Writing Intervention for Poor Sleepers. *Behavioral Sleep Medicine*, *1*, 115-124.

Helgeson, Vicki S. (1993). Two important distinctions in social support: Kind of support and perceived versus received. *Journal of Applied Social Psychology*, *23(10)*, 825-845.

Higgins, E.T. (1996). Knowledge activation: Accessibility, applicability and salience. In E.T. Higgins & A.W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles (pp. 136-168).* New York: Guilford Press.

Holahan, C.J., Moos, R.H., Holahan, C.K., Brennan, P.L. (1997). Social Context, Coping Strategies, and Depressive Symptoms: An expanded Model with Cardiac Patients. *Journal of Personality and Social Psychology*, *72(4)*, 918-928.

Hooley, J.M. (1986). Expressed Emotion and Depression: Interactions Between Patients and High- Versus Low- Expressed-Emotion Spouses. *Journal of Abnormal Psychology*, *3*, 237-246.

Hooley, J.M., & Licht, D.M. (1997). Expressed Emotion and Causal Attributions in the Spouses of Depressed Patients. *Journal of Abnormal Psychology*, *106*, 298-306.

Hooley, J., & Teasdale, J. (1989). Predictors of relapse in unipolar depression: Expressed emotion, marital distress, and perceived criticism. *Journal of Abnormal Psychology*, *98*, 229-235.

Hope, D.A., Rapee, R.M., Heimberg, R.G., & Dombeck, M.S. (1990). Representations of the self in social phobia: Vulnerability to social threat. *Cognitive Therapy and Research*, *14*, 177-189.

Jacobson, N.S., Dobson, K.S., Truax, P.A., Addis, M.E., & Koerner, K. (1996). A Component Analysis of Cognitive-Behavioral Treatment for Depression. *Journal of Consulting and Clinical Psychology*, *64*, 295-304.

Joiner, T.E., Jr. (1999). A Test of Interpersonal Theory of Depression in Youth Psychiatric Inpatients. *Journal of Abnormal Child Psychology*, *27*, 77-85.

Joiner, T.E., Jr. (1992). When depression breeds contempt: Reassurance-seeking, self-esteem, and rejection of depressed college students by their roommates. *Journal of Abnormal Psychology*, *101*, 165-173.

Joiner, T.E., Jr. (1994). Contagious depression: Existence, specificity to depressed symptoms, and the role of reassurance seeking. *Journal of Personality and Social Psychology*, *67*, 287-296.

Joiner, T.E., Jr. (1994c). [Relation between judges' and roommates' ratings on a measure of targets' likeability.] Unpublished data.

Joiner, T.E., Alfano, M.S., & Metalsky, G.I. (1992). When depression breeds contempt: Reassurance-seeking, self-esteem and rejection of depressed college students by their roommates. *Journal of Abnormal Psychology*, *101*, 165-173.

Joiner, T.E., Coyne, J.C., & Blalock, J. (1999). On the Interpersonal Nature of Depression: Overview and Synthesis. In T.E. Joiner and J.C. Coyne (Eds.), *The Interactional Nature of Depression, (pp.3-19).* Washington, D.C.: American Psychological Association.

Joiner, T.E., Jr., Katz, J., & Lew, A. (1999). Harbingers of Depressotypic Reassurance Seeking: Negative Life Events, Increased Anxiety, and Decreased Self-Esteem. *Personality and Social Psychology Bulletin*, *5*, 630-637.

Joiner, T.E., Jr., & Metalsky, G.I. (2001). Excessive Reassurance-Seeking: Delineating a Risk Factor Involved in the Development of Depressive Symptoms. *Psychological Science*, *12*, 371-378.

Joiner, T.E., Jr., & Metalsky, G.I. (1995). A prospective test of an integrative interpersonal theory of depression: A naturalistic study of college roommates. *Journal of Personality and Social Psychology*, *69*, 778-788.

Joiner, T.E., Jr., Metalksy, G.I., Katz, J., & Beach, S.R.H. (1999). Depression and Excessive Reassurance-Seeking. *Psychological Inquiry*, *10*, 269-278.

Joiner, T.E., Jr., Metalsky, G.I., Gencoz, F., & Gencoz, T. (2001). The Relative Specificity of Excessive Reassurance-Seeking to Depressive Symptoms and

Diagnoses Among Clinical Samples of Adults and Youth. *Journal of Psychopathology and Behavioral Assessment*, *23*, 35-41.

Joiner, T.E. Jr., & Schmidt, N.B. (1998). Excessive reassurance-seeking predicts depressive but not anxious reactions to acute stress. *Journal of Abnormal Psychology*, *107*, 533-537.

Katz, J., & Beach, S.R.H. (1997). Romance in the crossfire: When do women's depressive symptoms predict partner relationship dissatisfaction? *Journal of Social and Clinical Psychology*, *16*, 243-258.

Katz, J., Beach, S.R.H., & Joiner, T.E. Jr. (1998). When does partner devaluation predict emotional distress? Prospective moderating effects of reassurance-seeking and self-esteem. *Personal Relationships*, *5*, 409-421.

Kendall, P.C., Stark, K.D., & Adam, T. (1990). Cognitive deficit or cognitive distortion in childhood depression. *Journal of Abnormal Child Psychology*, *18*, 255-270.

Kessler, R. C., McGonagle, K. A., Zhao, S., Nelson, C. B., Hughes, M., Eshleman, S., Wittchen, H. U., & Kendler, K. S. (1994). Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States. *Archives of General Psychiatry*, *51*, 8-19.

Klerman, G.L. Depressive disorders: further evidence for increased medical morbidity and impairment in social functioning. *Archives of General Psychiatry*, 1989, 46:856-858.

Klerman, G.L., Weissman, M.M., Rounsaville, B.J., & Chevron, E.S. (1984). The Interpersonal Approach to Therapy. In G.L. Klerman, M.M. Weissman, B.J.

Rounsaville, & E.S. Chevron (Eds.), *Interpersonal Psychotherapy of Depression (pp. 73-154)*. New York: Basic Books.

Kobak, K.A., Reynolds, W.M., Rosenfeld, R., Greist, J.H. (1990). Development and validation of a computer-administered version of the Hamilton Depression Rating Scale. *Psychological Assessment*, *2(1)*, 56-63.

Krohne, H.W., & Fuchs, J. (1991). Influence of coping dispositions and danger-related information on emotional and coping reactions of individuals anticipating an aversive event. In C.D. Speileberger, I.G. Sarason, J. Strelau, & J.M.T. Brebner (Eds.), *Stress and anxiety: Vol. 13. The series in clinical psychology and the series in clinical and community psychology (pp. 131-155),* New York: Hemisphere.

Lang, P. J., Melamed, B. G., & Hart, J. H. (1970). A psychophysiological analysis of fear modification using an automated desensitization procedure. *Journal of Abnormal Psychology*, *76*, 220-234.

Lepore, S. J. (1997). Expressive writing moderates the relation between intrusive thoughts and depressive symptoms. *Journal of Personality & Social Psychology*, *73*, 1030-1037.

Lepore, S. J. (1992). Social conflict, social support, and psychological distress: Evidence of cross-domain buffering effects. *Journal of Personality & Social Psychology*, *63(5)*, 857-867.

Lepore, S. J., & Smyth, J. (Eds.). (2002). *The writing cure: How expressive writing influences health and well-being.* Washington, D.C.: American Psychological Association.

Lewinsohn, P.M., Weinstein, M.S., & Shaw, D.A. (1969). Depression: A clinical research approach. In R.D. Rubin & C.M. Franks (Eds.), *Advances in behavior therapy, (pp.229-248).* New York: Academic Press.

Magios, V., Downey, G., & Shoda, Y. (2000). Rejection-sensitivity and the protentiation of the startle response. Unpublished manuscript, Columbia University.

Mattia, J.I., Heimberg, R.G., & Hope, D.A. (1993). The revised Stroop color-naming task in social phobics: Diagnostic and treatment outcome implications. *Behavior Research and Therapy*, *31*, 305-313.

Mendolia, M., & Kleck, R. E. (1993). Effects of talking about a stressful event on arousal: does what we talk about make a difference? *Journal of Personality & Social Psychology*, *64*, 283-292.

Metalsky, G.I., & Joiner, T.E., Jr. (1992). Vulnerability to depressive symptomatology: A prospective test of the diathesis-stress and causal mediation components of the hopelessness theory of depression. *Journal of Personality and Social Psychology*, *63*, 667-675.

Metalsky, G.I., Joiner, T.E., Jr., Hardin, T.S., & Abramson, L.Y. (1993). Depressive reactions to failure in a naturalistic setting: A test of the hopelessness and self-esteem theories of depression. *Journal of Abnormal Psychology*, *102*, 101-109.

Mulder, R.T. (2002). Personality Pathology and Treatment Outcome in Major Depression. *American Journal of Psychiatry*, *159*, 359-371.

O'Mahen, H.A., Beach, S.R.H., & Banawan, S.F. (2001). Depression in Marriage. In J. Harvey & A. Wenzel (Eds.), *Close romantic relationships: Maintenance and Enhancement (pp.299-319).* Mahwah, NJ: Lawrence Erlbaum Associates.

Pennebaker, J.W. (2003). Writing About Emotional Experiences as a Therapeutic Process. In P. Salovey & A.J. Rothman (Eds.), *Social psychology of health: Key readings in social psychology (pp.362-368).* New York, NY: Psychology Press.

Pennebaker, J. W. (1993). Putting stress into words: health, linguistic, and therapeutic implications. *Behavioral Research & Therapy*, *31*, 539-548.

Pennebaker, J. W., & Beall, S. K. (1986). Confronting a traumatic event: toward an understanding of inhibition and disease. *Journal of Abnormal Psychology*, *95*, 274-281.

Pennebaker, J. W., Colder, M., & Sharp, L. K. (1990). Accelerating the coping process. *Journal of Personality & Social Psychology*, *58*, 528-537.

Peterson, C., & Seligman, M.E.P. (1984). Causal explanations as a risk factor for depression: Theory and evidence. *Psychological Review*, *91*, 347-374.

Porges, S. (1995). Cardiac vagal tone: A physiological index of stress. *Neuroscience and Biobehavioral Reviews*, *19*, 225-233.

Potthoff, J.G., Holahan, C.J., & Joiner, T.E., Jr. (1995). Reassurance-seeking, stress generation, and depressive symptoms: An integrative model. *Journal of Personality and Social Psychology*, *68*, 664-670.

Rachman, S., & Taylor, S. (1993). Analyses of Claustrophobia. *Journal of Anxiety Disorders*, *7*, 281-291.

Rice, D. P.; & Miller, L. S. (1993). The economic burden of mental disorders. *Advances in Health Economics and Health Services Research*, *14*, 37-53.

Rodriguez, B.I., & Craske, M.G. (1993). The effects of distraction during exposure to phobic stimuli. *Behaviour Research and Therapy*, *31*, 549-558.

Rohde, P., Clarke, G.N., Lewinsohn, P.M., Seeley, J.R., & Kaufman, N.K. (2001). Impact of Comorbidity on a Cognitive-Behavioral Group Treatment for Adolescent Depression. *Journal of the American Academy for Child Adolescent Psychiatry*, *40:7*, 795-802.

Rollman, B.L., Hanusa, B.H., Belnap, B.H., Gardner, W., Cooper, L.A., Schulberg, H.C. (2002). Race, quality of depression care, and recovery from major depression in a primary care setting. *General Hospital Psychiatry*, *24*, 381-390.

Sacco, W.P., & Nicholson, K.J. (1999). A Social-Cognitive Perspective on Reassurance-Seeking and Depression. *Psychological Inquiry*, *10*, 298-302.

Salkovskis, P.M. (199 1). The importance of behaviour in the maintenance of anxiety and panic: A cognitive account. *Behavioural. Psychotherapy* , *19*, 6-19

Salkovskis, P.M., Clark, D.M., Hackman, A., Wells, A., & Gelder, M.G. (1999). An experimental investigation of the role of safety behaviours in the maintenance of panic disorder with agoraphobia. *Behaviour Research & Therapy* , *37*, 559-574.

Schmidt, N.B., Schmidt, K.L., & Young, J.E. (1999). Schematic and Interpersonal Conceptualizations of Depression: An Integration. *In The Interactional Nature of Depression.* Edited by Thomas Joiner and James C. Coyne. APA.

Sloan, T., & Telch, M.J. (2002). The effects of safety-seeking behavior and guided threat reappraisal on fear reduction during exposure: An experimental investigation. *Behavior Research and Therapy*.

Smith, T.W., Ingram, R.E., & Brehm, S.S. (1983). Social anxiety, anxious self-preoccupation, and recall of self-relevant information. *Journal of Personality and Social Psychology*, *44*, 1276-1283.

Smyth, J. M., Stone, A. A., Hurewitz, A., & Kaell, A. (1999). Effects of writing about stressful experiences on symptom reduction in patients with asthma or rheumatoid arthritis: a randomized trial. *Journal of the American Medical Association*, *281*, 1304-1309.

Swann, W.B., Jr., & Bosson, J.K. (1999). The Flip Side of the Reassurance-Seeking Coin: The Partner's Perspective. *Psychological Inquiry*, *10*, 302-304.

Swann, W.B., Jr., Wenzlaff, R.M., & Tarafodi, R.W. (1992). Depression and the search for negative evaluations: More evidence of the role of self-verification strivings. *Journal of Abnormal Psychology*, *101*, 314-317.

Sweeney, P.D., Anderson, K., & Bailey, S. (1986). Attributional style in depression: A meta-analytic review. *Journal of Personality and Social Psychology*, *50*, 974-991.

Vaux, A., Phillips, J., Thomson, B., Holly, L., Williams, D., and Stewart, D. (1986). The

Social Support Perceptions (SSA) Scale: Studies of reliability and validity. *American Journal of Community Psychology*, *14*, 195-220.

Vinokur, A. D. & Van Ryn, M. (1993). Social support and undermining in close relationships: Their independent effects on the mental health of unemployed persons. *Journal of Personality & Social Psychology*, *65(2)*, 350-359.

Weissman, M.M., & Paykel, E.S. (1974). *The depressed woman.* Chicago: University of Chicago Press.

Wells, A., Clark, D.M., Salkovskis, P., Ludgate, J., Hackmann, A., Gelder, M. (1995). Social phobia: The role of in-situation safety behaviors in maintaining anxiety and negative beliefs. *Behavior Therapy*, *26*, 153-161.

Wells, K.B., Stewart, A., Hays, R.D., Burnam, M.A., Rogers, W., Daniels, M., Berry, S., Greenfield, S., Ware, J. The functioning and well-being of depressed patients: Results from the Medical Outcomes Study. *JAMA*. 1989;262:914-919.

Williams, S. L., Dooseman, G., Kleifield, E. (1984). Comparative effectiveness of guided mastery and exposure treatments for intractable phobias. *Journal of Consulting & Clinical Psychology*, *52*, 505-518.

Wise, E.H., & Barnes, D.R. (1986). The relationship among life events, dysfunctional attitudes, and depression. *Cognitive Therapy and Research*, *10*, 257-266.

Young, J. (1990). *Cognitive therapy for personality disorders: A schema-focused approach.* Sarasota, FL: Professional Resource Exchange.

Young, J.E., Beck, A.T., & Weinberger, A. (1993). Depression. In D.H. Barlow (Ed.), *Clinical Handbook of Psychological Disorders, Second Edition (pp.240-277).* New York: Guilford Press.

Zane, N., Enomoto, K., & Chun, C. (1994). Treatment Outcomes in Asian- and White-American Clients in Outpatient Therapy. *Journal of Community Psychology*, *22*, 177-191.

Zuroff, D.C., & Mongrain, M. (1987). Dependency and self-criticism: Vulnerability factors for depressive affective states. *Journal of Abnormal Psychology*, *96*, 14-22.

VITA

Jennifer Dawn Ragan was born in Silver Spring, Maryland on January 27, 1976, the daughter of Charles L. Ragan, Jr. and Susan J. Ragan. After completing her work at Paint Branch High School, Burtonsville, Maryland, in 1994, she entered Carnegie Mellon University in Pittsburgh, Pennsylvania. She received the degree of Bachelor of Science from Carnegie Mellon University in May 1998. In August 1998 she entered the Graduate School of the University of Texas at Austin.

Permanent Address: 14217 Bradshaw Drive, Silver Spring, MD 20905

This dissertation was typed by the author.