PERSONALITY, STRESSFUL LIFE EVENTS, AND TREATMENT RESPONSE IN MAJOR DEPRESSION

by

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Abstract

Major Depression (MD) currently affects over 17 million individuals in North America (Greenberg et al., 2003). Identifying factors predictive of MD treatment response is important for developing more efficacious treatments and better understanding MD vulnerability. The goal of the present study was to examine the main and interactive effects of personality and stressful life events as predictors of MD treatment response. One hundred and thirty-one clinically depressed participants were randomly assigned to either 16-weeks of cognitive behavioural therapy (CBT), interpersonal psychotherapy (IPT), or pharmacotherapy (PT). Personality in the form of trait self-criticism, neediness, and connectedness was assessed at pre and post-treatment using the Depressive Experiences Questionnaire (DEQ; Blatt et al., 1976). Stressful life events experienced during treatment were assessed using the Life Events and Difficulties Schedule (LEDS; Bifulco et al., 1989). Results revealed that amongst individuals scoring lower in pre-treatment self-criticism, higher pre-treatment connectedness predicted superior treatment response. As well, amongst individuals scoring lower in pre-treatment neediness, higher pre-treatment connectedness predicted superior treatment response. In terms of personality change, both a reduction in neediness and a reduction in self-criticism over the course of treatment predicted superior treatment response. A personality × stressful life event interaction was also found such that amongst those experiencing a stressful life event during treatment, higher scores on pre-treatment self-criticism predicted poor treatment response. These results suggest that personality and stressful life events play an important role in the treatment of MD. Limitations and clinical implications are discussed.

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Chapter 1

Introduction

Major Depression (MD) is the most common psychological disorder, currently

affecting more than 17 million people in North America (APA, 1994). The cardinal

features of MD include deep and prolonged sadness, a lack of interest or pleasure in most

activities, and feelings of hopelessness or worthlessness that negatively impact

fundamental domains of life such as interpersonal relationships and work or school

performance (APA, 1994). Perhaps more alarming is that MD is most often a recurring

disorder with over 50% of those experiencing one episode going on to suffer additional

recurrences and over 70% of those experiencing two or more episodes recurring within

the first two years of recovery (Angst, 1992; Belsher & Costello, 1988). MD also carries

a heavy economic burden for society at large with the direct treatment costs and indirect

costs related to disability claims and lost productivity totaling $80 billion dollars per year

(Greenberg et al., 2003). It is therefore critically important to identify factors that predict

treatment response in MD. Understanding these factors can aid in the development of

more efficacious treatment programs and help reduce the burden of MD both for the

individual and greater society.

Two factors that are consistently and robustly predictive of MD treatment

response are personality and stressful life events. Personality, defined as a pervasive

pattern of perception, behaviour, and inner experience characterizing a given individual

(Costa & McCrae, 1985), has been related to speed of MD treatment response, the

number of depressive recurrences, and short and long-term treatment outcome (Bagby,

Joffe, Parker, Kalemba, & Harkness, 1995; Berlanga, Heinze, Torres, Apequian, &

Caballero, 1999; Zuroff & Blatt, 2002). Similarly, the number and severity of stressful

life events experienced by an individual has been shown to predict treatment outcome

and speed of treatment response in MD (McQuaid, Monroe, Roberts, Kupfer, & Frank,

2000; Monroe, Kupfer, & Frank, 1992). While it is known that personality and stressful

life events, as individual risk factors, predict treatment response, few investigations have

examined interactions between personality and stressful life events in predicting

treatment response in MD. That is, few studies have examined questions such as 'are

individuals characterized by certain personality traits particularly vulnerable to the impact

of stressful life events on treatment response?'. The purpose of the current study was to

examine how personality and stressful life events, both as independent and interactive

risk factors, influence treatment response in MD.

Personality and MD Treatment Response

The concept that a patient's personality influences their response to depression

treatment has been speculated on since at least the turn of the 19th century. Both Freud

and Kraepelin theorized that personality was instrumental in therapeutic response (Ilardi

& Craighead, 1995). Following this lead, early diagnostic conceptualizations of

depression categorized patients into subtypes such as 'anxious/neurotic' and

'endogenous' based partly on the idea that patients characterized by different personality

types respond differentially to particular treatment interventions (Mulder, 2002). Recent

meta-analytic reviews have confirmed that indeed personality pathology both in the form

of categorically defined disorders (Newton-Howes, Tyrer, & Johnson, 2006) and

dimensionally conceptualized traits (Mulder, 2002) predicts treatment response in MD.

Two traits that have gained substantial interest for being related to MD are the personality dimensions of self-criticism and dependency (Blatt & Zuroff, 1992). These traits are of particular relevance to MD treatment response because of their role in the development and maintenance of depressive symptomatology (Blatt, 1974; Blatt & Zuroff, 1992).

Self-criticism

Individuals high in self-criticism are characterized by excessive personal demands for goal achievement and constant needs to meet high expectations (Blatt & Zuroff, 1992). These individuals are often obsessional regarding achievement-based tasks and are prone to feelings of frustration, inferiority, weakness, self-scrutiny, and guilt when they do not meet their goals. Although they can be highly talented and accomplish a great deal, individuals high in self-criticism rarely feel satisfied or fulfilled. Rather, these individuals are often plagued by feelings of emptiness and thoughts of, 'not being good enough'. Interpersonally, individuals high on self-criticism tend towards social isolation. When these individuals do have relationships, they tend to be superficial or materialistic in nature and limited by feelings of other-directed criticism, resentment, and competition. As a result, individuals high in self-criticism typically have smaller, less supportive, and less cooperative social circles and experience less enjoyment, emotional closeness, and relationship satisfaction with romantic partners when compared to individuals low in self-criticism (Zuroff & Fitzpatrick, 1991; Zuroff & Franko, 1986).

Dependency

Individuals high in dependency have a deep need to be loved and to have close and protective relationships (Blatt & Zuroff, 1992). These individuals often fear abandonment and social disapproval and rely on interpersonal relationships to provide a sense of self, identity, and well being. Theoretically, when a dependent individual's interpersonal needs are met, self-esteem is high. However, because their needs are regularly intense and unrelenting these individuals often find themselves in a maladaptive cycle whereby their interpersonal neediness drives others away, which in turn reinforces their fears of abandonment, thereby resulting in increased neediness. Consistent with their interpersonal needs, individuals high in dependency exert a great deal of time and energy ensuring a safe and supportive social network. They engage in more interpersonal activities and have larger and more intricate social networks than individuals low in dependency (Blatt & Zuroff, 1992). These individuals also tend to perceive same-sex peers as more friendly and, possibly due to their desire to accommodate and please others, elicit increased positive facial expressions in interactions with friends than those low in dependency (Zuroff & Franko, 1986). Romantically, individuals high in dependency tend to seek out partners who are also high on needs for intimacy, possibly in efforts to ensure deep emotional closeness within their romantic dyad (Zuroff & de Lorimier, 1989; Zuroff & Fitzpatrick, 1991).

Self-criticism and Dependency: Associations with Depression

While self-criticism has been strongly linked with depressive symptomatology, dependency has not shown such a strong association. In a meta-analytic review spanning 15 years of research, Nietzel and Harris (1990) found that self-criticism was a robust and

significant indicator of MD symptomatology in both patient and student samples (mean effect size of $r = .49$ across 12 studies). Dependency, on the other hand, was found to be only a weak to modest marker of depressive symptoms (mean effect size of $r = .29$ across 12 studies). To better understand these relationships, investigations have examined how these traits relate to specific depressive symptoms. For example, it has been found that self-criticism, compared to dependency, accounts for more variance in the 'core depressive symptoms' of sadness, pessimism, and loss of pleasure, and is more strongly associated with cognitively-based depressive symptoms such as indecision, thoughts of self-dislike, and rumination on past failure (Blatt, D'Affliti, & Quinlan, 1976; Desmet, VanHeule, & Verhaeghe, 2006; Robins, Hayes, Block, Kramer, & Villena, 1995). More recently longitudinal research examining the development of depressive symptoms over time has found that self-criticism, when compared to dependency, more strongly predicts the development of future depressive symptoms and episodes in adolescents, adults, and depressed patients in remission (Priel & Shahar, 2000; Rector, Bagby, Segal, Joffe, & Levitt, 2000; Shahar & Priel, 2003).

The extant literature therefore suggests that dependency, although initially conceptualized as a severe marker of depressive symptomatology, is in fact only a weak to modest indicator of depressive symptoms and vulnerability. Given the discrepancy between its initial conceptualization and these empirical findings, investigators have examined the processes through which dependency operates to influence depressed mood. For example, Fichman, Koestner, & Zuroff (1997) examined dependency as a predictor of depressive symptoms and interpersonal relationships in adolescents attending summer camp. These investigators found that although high scores in dependency predicted increases in depressive symptoms, this trait also characterized campers who

made and maintained close, adaptive relationships both at home and at camp. These

researchers concluded that dependency appears to simultaneously tap into maladaptive

processes (i.e., interpersonal neediness and anxiety regarding relationships) and adaptive

processes (i.e., connecting with others and making close relationships). Priel and Shahar

(2000; 2003) have also reported on the dual nature of the dependency construct. These

investigators modeled the effects of dependency, social support, and stress on depression

in young adults. Results showed that although high scores in dependency predicted the

development of depressive symptoms via the generation of stressful life events, high

scores in dependency also buffered the development of depressive symptoms via

increased social support and *increased* positive life events. Indeed, multiple studies have

found corroborating evidence that dependency simultaneously taps into elements of

depression risk and depression resilience (Blatt, Zohar, Quinlan, Luthar, & Hart, 1996;

Blatt, Zohar, Quinlan, Zuroff, & Mongrain, 1995; Mongrain, 1998).

Neediness and Connectedness: Two Factors within Dependency

        In light of research suggesting that dependency simultaneously represents

maladaptive elements of MD risk and adaptive elements of MD resilience, researchers

have re-examined the factor structure of dependency. In a sample of undergraduates,

Rude and Burnham (1995) factor analyzed the dependency scale on the most widely used

and validated measure of dependency, the Depressive Experiences Questionnaire (DEQ,

Blatt, 1974) and found evidence for two orthogonal and highly stable factors. The first

factor was characterized by anxious and depression-related concerns regarding

interpersonal rejection and abandonment. Investigators interpreted this factor as pure

risk-marker for depression representing a maladaptive and needy interpersonal style.

Accordingly, this factor was named "neediness" (Rude & Burnham, 1995). The second extracted factor was characterized by a strong commitment to interpersonal relationships and sensitivity towards the influence of one's actions on others. Although some individual items loading on this factor did reflect interpersonal anxiety, none were associated with depressive symptomatology. Investigators interpreted this factor to represent an adaptive or affiliative form of interpersonal connectivity and subsequently labeled it, 'connectedness' (Rude and Burnham, 1995). The neediness and connectedness factors have since been validated in both the normal population and clinically depressed samples (Bacchiochi, Bagby, Cristi, & Watson, 2003) and have been associated with distinct and content-congruent profiles on comprehensive models of personality such as the Five-Factor Model of personality (Dunkley, Blankstein, Zuroff, Lecce, & Hui, 2006). Furthermore, high neediness scores have been associated with an increased risk for developing a depressive episode and problematic interpersonal relationships whereas high scores in connectedness have been associated with increased feelings of interpersonal trust and comfort within intimate relationships (Cogswell, Alloy, & Spasojevic, 2006; Whiffen, Aube, Thompson, & Campbell, 2000; Zuroff, Moskowitz, & Cote, 1999).

Self-criticism, Neediness, Connectedness and MD Treatment Response

Self-criticism is a strong risk factor for depression, and, perhaps not surprisingly, has also been consistently related to poor MD treatment response. Research, however, has not yet examined the influence of neediness and connectedness on MD treatment response. Blatt and colleagues (1995; 1998; 2002) analyzed data from the National Institute of Mental Health's (NIMH) Treatment of Depression Collaborative Research

Project, a longitudinal treatment study employing a randomized clinical design with four

MD treatment conditions: CBT, IPT, PT, and a placebo condition. In these investigations

researchers found that higher pre-treatment scores on self-criticism or 'perfectionism'

(terminology used in the study), impeded therapeutic change across each of the four

treatment conditions. On the other hand, pre-treatment dependency, or 'need for

approval' (terminology used in the study) was not predictive of treatment response.

Rector et al. (2000) found similar results in a sample of 109 clinically depressed patients,

reporting that elevated pre-treatment self-criticism, but not dependency, predicted poor

outcome for patients in cognitive therapy.

It is interesting to note that in each of these treatment response investigations

(Blatt et al., 1995; 1998; 2000; Rector et al., 2000) dependency was found to be a non-

significant predictor of treatment response. This leaves open the possibility that if the

neediness and connectedness subfactors of the dependency construct, which purportedly

tap into elements of MD risk and MD resilience, were independently examined,

significant associations between these traits and MD treatment response would emerge.

To date, no study has examined whether the traits of neediness or connectedness predict

treatment response in MD. Furthermore, multiple researchers have suggested that

examining personality trait interactions (i.e., as opposed examining independent, main

effects) affords a more theoretically and clinically valid account of how personality traits

synergistically operate to influence depression (Shahar, Gallagher, Blatt, Kuperminc, &

Leadbeater, 2004). However no investigations have examined how self-criticism,

neediness, and connectedness interact to predict depression vulnerability or MD

treatment response.

The first goal of the current study was therefore to examine both the main and interactive effects of the pre-treatment personality traits of self-criticism, neediness, and connectedness as predictors of MD treatment response.

Personality Change over the Course of Treatment

Traditionally, personality traits have been described as, '*enduring* patterns of perceiving, relating to, and thinking about (one's) environment' (APA, 1994, p. 686). This definition suggests that an individual's personality is stable over time; however, it has been found that under certain circumstances, such as when an individual undergoes successful MD treatment, personality change, at least insofar as personality is currently measured, can occur (DeRubeis & Feeley, 1990; Rector et al., 2000). For example, Rector et al. examined personality change in clinically depressed patients undergoing either cognitive therapy or antidepressant medication. These researchers found that in the cognitive therapy group reductions in self-criticism during treatment were associated with MD remission suggesting that decreases in self-criticism may be an important mechanism through which cognitive therapy alleviates depressive symptomatology. DeRubeis and Feeley found similar results in an examination of the temporal patterning of personality and mood change in MD patients undergoing cognitive therapy. Specifically, these researchers found that changes in personality occurring in the first half of treatment predicted mood change in second half of treatment. That is, early personality change predicted later mood change.

In a sense, research suggesting that personality change can occur during treatment and is associated with treatment response is not surprising. Beck and colleagues (1979; 1995) designed CBT to alleviate depressed mood by altering a patient's maladaptive

thought and action patterns through a series of behavioural (e.g., activity scheduling, interpersonal challenges) and cognitive techniques (e.g., collective evidence against negative automatic thoughts, thought diaries). Similarly, it has been proposed that other treatment modalities such as IPT and PT can influence an individual's personality either directly (e.g., in IPT where the patient learns adaptive ways to think about, maintain, and enhance their interpersonal relationships) or indirectly (e.g., in PT where mood change is targeted through the altering of an individual's biochemistry, which in turn can result more adaptive thoughts and behaviours) (Klerman, Weissman, Rounsaville, & Chevron, 1984; Rector et al., 2000).

To date, only a limited number of studies have examined the relationship between self-criticism change during treatment and MD treatment response (e.g., Rector et al., 2000). Furthermore, no studies have examined whether neediness change, connectedness change, or interactions between these variables predicts MD treatment response. Therefore, the second goal of the current investigation was to examine the main and interactive effects of self-criticism change, neediness change, and connectedness change over the course of treatment in predicting MD treatment response.

Stressful Life Events and Major Depression

Since at least the turn of the nineteenth century, clinicians and researchers alike have speculated on the impact of stressful life events on MD (Brown and Harris, 1978). Early psychoanalytic accounts implicated life stress in the onset of depression suggesting that MD resulted from a stressful life event experienced during childhood which included either the real or imagined loss of someone very close to the individual (Freud, 1917). Later, behaviourist theories conceptualized depression as a learned response to negative

environmental contingencies (e.g., stressful life events). Specifically, these theories posited that as a result of certain negative life experiences, individuals learn that they have a lack of control over their life circumstances, subsequently leading to hopelessness, helplessness, and MD (Seligman, 1975).

Building on these earlier theories, the past three decades have featured an impressive accumulation of highly rigorous empirical research examining the role of stressful life events in patients with MD. Largely spurred by Brown and Harris' (1978) landmark text, 'The Social Origins of Depression', investigations have examined how the experience of a stressful life event (e.g., death of a loved one, divorce, serious illness, losing one's job) can influence MD in a number of ways, including triggering a depressive episode, changing the course of depression, leading to increased chance of recurrence, and impairing response to treatment (see Kessler, 1997 for a review).

Investigations into stressful life events as a trigger for an episode of MD have consistently found the following: 1) There is an association between experiencing a stressful life event and experiencing a subsequent episode of MD; 2) The more severe or threatening the stressful event, the greater likelihood an individual will suffer a subsequent episode of MD; and 3) Although stressful life events occur regularly in the normal population, only a subset of individuals experiencing these events become depressed (Hammen, 2005; Kessler, 1997).

Brown, Harris, and colleagues conducted a series of prospective studies (1978; 1986; 1987; 1995) examining the association between experiencing a stressful life event and developing a subsequent episode of MD. For example, Brown and Harris (1987) tracked 303 working class female participants for one year, assessing the association between stressful life events and the onset of depression. Results revealed that women

who suffered a 'severe' stressful event (e.g., death of a close friend, divorce) were at a four-fold greater risk for developing depression in the subsequent 6 months compared to women who did not suffer a severe stressful life event. Similar rates of MD vulnerability following a significant stressful life event have been replicated by various other researchers (see Kessler, 1997 for a review).

One of the major methodological strengths of Brown, Harris, and colleagues' research is that these researchers employ 'contextual methods' of life event assessment to determine the presence and severity of stressful life events (i.e., the Life Event and Difficulties Schedule; LEDS; Bifulco, 1989). Specifically, contextual measures of life event assessment such as the LEDS involve a interview whereby the participant is asked about various life events that they may have experienced. These events are then catalogued and rated for their severity by independent judges based on the circumstances of the participant and the event, disregarding any subjective feelings and reactions reported by the subject. This contextual method of life event assessment is particularly valuable in life event research related to depression because bias may arise when depressed individuals report life events, possibly via a pessimistic retrospective style or negative interpretations of the event. Indeed, compared to 'checklist methods' of life event assessment whereby the participant 'checks off' and subjectively rates the severity of their own life events, contextual methods have been consistently related to fewer response errors due to individual differences such as mood state (Dohwenrend, 2006). Furthermore, contextual rating systems such as the LEDS have been shown to more reliably and robustly account for the relation between stressful life events and MD onset (Hammen, 2005).

Stressful Life Events and MD Treatment Response

The relationship between stressful life events and MD onset is well established and recent research suggests that stressful life events experienced during treatment can also impair MD treatment response. For example, McQuaid et al. (2000) and Monroe et al. (1992) investigated the impact of stressful life events on treatment response in a sample of 91 depressed outpatients. Results showed that a greater number and higher severity of stressful life events experienced in the first 6 weeks of treatment predicted slowed and poor response to antidepressant medication and psychotherapy. Specifically, none of the 55 treatment responders experienced a severe stressful event during treatment compared to 5 of the 29 treatment non-responders (17%). As well, 9 of 55 treatment responders (16%) experienced an undesirable stressful life event during treatment compared to 13 of 29 non-responders (45%). Each of these comparisons was significant suggesting that the experience of either a severe or undesirable stressful life event during the course of treatment results in poor response to MD treatment. Zuroff and Blatt (2002) found supporting evidence in a study of 162 MD patients treated with either antidepressant medication or psychotherapy. These investigators found that the number of stressful life events experienced by patients during treatment predicted increased depressive symptomatology across treatment modalities at treatment termination. Furthermore, tracking these individuals for up to18 months post treatment, it was found that the experience of stressful life events had long-term depressogenic effects predicting increased depressive symptomatology at 6, 12, and 18 months follow-up. Reno and Halaris (1990) also found that clinically depressed patients who experienced chronic life stressors during treatment demonstrated increased post-treatment depressive symptomatology compared to depressed patients who did not experienced such stressors.

Furthermore, two earlier treatment outcome studies (Lloyd et al., 1981; Teri & Lewinsohn, 1986) found that self-reported life stressors experienced during anti-depressant treatment predicted poor treatment outcome in MD, with pre-treatment depression scores and stressful life events experienced during treatment accounting for 48% of the variance in treatment response in one investigation (Teri & Lewinsohn, 1986).

Taken together, research suggests that experiencing stressful life events during MD treatment results in poor treatment response. Although this concept may seem intuitive – that is, it may not be overly surprising that increased stress during MD treatment reduces the likelihood that treatment will succeed – many questions over and above the main effect of life stress on depression treatment exist. For instance, it is not uncommon for depressed individuals to experience stressful life events during treatment and still respond well to treatment. Therefore, one important question is, 'why do certain individuals who experience stressful life events during treatment respond well to treatment while others do not?' Taking this question one step further, 'what specific characteristics make an individual vulnerable to the negative effects of stressful life events on MD treatment response?' Recently, investigations have examined these questions from a diathesis-stress perspective investigating how individuals characterized by different personality traits respond differentially to stressful life events.

Interactive Models of MD: Stressful Life Events as a Moderator of Personality

Recent conceptualizations of MD have employed diathesis-stress models to account for depression vulnerability (Hammen, 1991; Monroe & Simons, 1991; Zuroff & Blatt, 1992). Rather than adhering to a 'main effect' approach which implicates a single

factor in the development of depression, diathesis-stress approaches view MD as resulting from an interaction of etiological factors, specifically some sort of provoking agent (e.g., an environmental stressor) interacting with an individual's underlying predisposition for MD. One of the most intensely researched and fruitful diathesis-stress conceptualizations of MD vulnerability has been the personality-stressful life event diathesis-stress model (Zuroff & Blatt, 1992). The fundamental concept in this model is that an individual is prone to MD if they are characterized by a maladaptive personality trait (i.e., the diathesis) and they experience a significant stressful life event (i.e., the stress).

Consistently, research in both clinical and non-clinical samples has shown that in the face of a stressful life event, the maladaptive traits of self-criticism and dependency are associated with increased depressive symptomatology and increased risk for an episode of MD (Zuroff & Blatt, 1992). For example, Segal, Shaw, Vella, & Katz (1992) followed a group of 59 remitted depressed patients to determine whether self-criticism or dependency predicted depression relapse after exposure to a stressful life event. These researchers found that high scores on self-criticism and dependency interacted with stressful life events to predict recurrence. Furthermore, 'congruence' was found between the maladaptive trait that characterized the individual and the type of life event that triggered relapse. Specifically, individuals high in self-criticism were more likely to suffer a depressive relapse after an achievement-related stressful life event (e.g., fired from job) whereas individuals high in dependency were more likely to suffer a relapse following an interpersonal-related stressful life event (e.g., argument with spouse). Indeed, other studies have found similar 'congruence' between personality and stressful

life events in provoking episodes of MD (Hammen, Ellicot, & Gitlin, 1989) and depressive symptomatology (Abela, McIntryre, & Dechef, 2003).

Not all studies, however, have found support that the type of stressful life event must be congruent with one's maladaptive personality traits to trigger depressive symptomatology. For instance, Fichman et al. (1997), Robins et al. (1995), and Shahar, Joiner, Zuroff, and Blatt (2004) have reported that adolescents and young adults who characterized by self-criticism were vulnerable to developing depressive symptomatology in the face of any kind of stressful life event, regardless of whether these events were achievement-based or interpersonal in nature. Dependency, on the other hand, was found only to interact with interpersonal-based stressors in triggering depressive symptoms. This pattern of results has led some theorists to posit the broad generalization that dependency confers a more specific vulnerability to depression in response to interpersonal stressors while self-criticism confers a broad vulnerability to depression in response to both interpersonal and achievement-related stressful events (Zuroff, Mongrain, & Santor, 2004).

Although stressful life events, and specifically interpersonal stressors, have been found to interact with dependency to provoke depressive symptomatology, it is not yet known whether a similar relationship exists for the dependency subfactors of neediness and connectedness. Based on the conceptualization of neediness as a form of 'maladaptive dependency' and connectedness as a form of 'adaptive dependency' (Rude & Burnham, 1995) it is possible that each of these traits interacts with stressful life events differentially to predict depression. Only one study to date has examined whether stressful life events moderates the influence of neediness on depression. In a sample of 168 non-depressed individuals, Cogswell et al. (2006) examined whether stressful life

events moderated the effect of neediness to predict MD onset. Results showed that while elevated neediness predicted vulnerability to MD onset over a 2 year span, the presence of stressful life events did not moderate this relationship. Authors noted, however, that life event assessment was conducted using self-report, checklist-based methods and should be replicated using more reliable contextual methods. Therefore, while the vast majority of studies have found that self-criticism and dependency interact with stressful life events to produce MD symptomatology, more research is needed to examine whether stressful life events moderate the influence of neediness and connectedness in the development of depressive symptoms.

Personality, Stressful Life Events, and MD Treatment Response

For the MD patient, the treatment period – that is, when the individual receives therapeutic intervention – is crucial for successful treatment response. In psychotherapeutic treatments (e.g., CBT, IPT), the patient identifies core issues related to their depression, learns a new set of skills, and applies those skills in an effort to improve mood (Beck, 1995; Klerman et al., 1984). In anti-depressant treatment, mood change is targeted via alterations in an individual's biochemistry. In each of these treatment modalities, positive mood change is the ultimate goal. However, if the patient encounters an external stressor while in treatment (e.g., a stressful life event) to which they are particularly vulnerable due to an underlying predisposition (e.g., a maladaptive personality trait), it is possible that positive mood change will not occur and remission from MD will not be achieved.

Relatively little is known about how stressful life events moderate personality in predicting treatment response. There is evidence that positive life events experienced

during treatment act as modifiers of personality to predict treatment outcome

(Oldehinkel, Ormel, & Neeleman, 2000). Specifically, it has been found that depressed

individuals high in neuroticism (i.e., a propensity to experience negative affect) benefit

more from positive life events during treatment than individuals low in neuroticism

(Oldehinkel, Ormel, & Neeleman, 2000). However, very few treatment outcome studies

examining personality and stressful life events have been conducted.

To date, no investigations have examined the modifying effect of stressful life

events experienced during treatment on self-criticism, neediness, or connectedness in

predicting MD treatment response. Two studies have however examined the moderating

effect of stressful life events on personality traits similar to self-criticism and dependency

in predicting MD treatment response. Mazure et al. (2000) examined the relations among

personality, stressful life events, and anti-depressant treatment response in a sample of 43

depressed patients. These researchers found an interaction between personality and

stressful life events such that in the face of an achievement-based stressful life event,

individuals higher in need for control (i.e., a trait similar to self-criticism) were more

vulnerable to poor treatment response when compared to individuals lower in need for

control. It was also found that in the face of an interpersonal-based stressful life event,

individuals higher in sociotropy (i.e., a trait similar to dependency) were more vulnerable

to poor treatment response compared to individuals low in sociotropy. Mazure et al.

concluded that these findings supported a diathesis-stress model of depression

vulnerability whereby specific stressful life events moderate the influence of personality

and treatment response. In a similar investigation, Zuroff and Blatt (2002) examined the

relations among personality, stressful life events, and treatment response in 162 MD

patients randomly assigned to either CBT, IPT, PT, or a placebo condition. Although

these researchers found that high perfectionism (i.e., a trait similar to self-criticism) independently predicted poor treatment response, no significant relation was found regarding the personality × stressful life event interaction and treatment response.

The extant literature has therefore yielded mixed results regarding personality × stressful life event interaction effects on MD treatment response with Mazure et al. (2000) finding support, and Zuroff and Blatt (2002) finding a lack of support for this relationship. One possibility for these inconsistencies is that Mazure et al. used a contextual measure of life event assessment whereas Zuroff and Blatt used a checklist measure. As noted above, checklist methods of life event assessment have been shown to be less robust and less reliable in detecting relations between stressful life events and depression as compared to contextual measures (Brown & Harris, 1978; Dowhenrend, 2006). Therefore, replication studies examining personality × stressful life event interaction effects on MD treatment response which use contextual measures of life event assessment are needed to clarify these contradictory findings. A second possibility for these inconsistent findings is that the Mazure et al. study and the Zuroff and Blatt investigation examined different personality traits. It is possible that if the traits of self-criticism, neediness, and connectedness were examined, significant interactions between these traits and stressful life events would emerge as predictors of MD treatment response.

Therefore, the third goal of the present study was to investigate how stressful life events and personality interact to predict treatment response in depressed patients. More specifically, the goal was to examine whether stressful life events experienced during treatment moderated the effect of pre-treatment self-criticism, neediness, or connectedness on MD treatment response.

Goals and Hypotheses

In summary, the purpose of the present study was to examine the relation of personality and stressful life events to treatment response in MD. The following study had several goals and related hypotheses:

(1) The first goal was to examine the main and interactive effects of pre-treatment self-criticism, neediness, and connectedness on MD treatment response. It was hypothesized that high pre-treatment self-criticism would be associated with poor treatment response, high pre-treatment neediness would be associated with poor treatment response, and low pre-treatment connectedness would be associated with poor treatment response. Regarding two way interactions, a self-criticism X neediness interaction was hypothesized such that amongst individuals high in self-criticism, higher scores in neediness would predict poor treatment response whereas amongst those low in self-criticism, neediness would not be significantly associated with response. A self-criticism X connectedness interaction was also hypothesized such that amongst those low in self-criticism, higher scores in connectedness would predict superior treatment response whereas amongst those high in self-criticism, connectedness would not be significantly associated with treatment response. A neediness X connectedness interaction was also hypothesized such that amongst those low in neediness, higher scores in connectedness would be associated with superior treatment response whereas amongst those high in neediness, connectedness would not be associated with treatment response. Regarding the three way interaction (i.e., self-criticism $\times$ neediness $\times$ connectedness) no hypotheses were forwarded as this analysis was exploratory in nature.

(2) The second goal was to examine the main and interactive effects of self-criticism

change, neediness change, and connectedness change over the course of treatment in predicting MD treatment response. It was hypothesized that a reduction in self-criticism would predict superior treatment response, a reduction in neediness would predict superior treatment response, and an increase in connectedness would predict superior treatment response. Regarding two-way interactions, a self-criticism change X neediness change interaction was hypothesized such that amongst those individuals experiencing greater reductions in self-criticism, greater reductions in neediness would predict superior treatment response whereas amongst those experiencing lesser reductions in self-criticism, greater reductions in neediness would not be associated with treatment response. A self-criticism change X connectedness change interaction was also hypothesized such that amongst those experiencing greater reductions in self-criticism, greater increases in connectedness would predict superior treatment response whereas amongst those experiencing lesser reductions in self-criticism, greater increases in connectedness would not be associated with treatment response. A neediness change X connectedness change interaction was also hypothesized such that amongst those experiencing greater reductions in neediness, greater increases in connectedness change would predict superior treatment response whereas amongst those experiences lesser reductions in neediness, greater increases in connectedness would not predict response. Regarding the three-way interaction (i.e., self-criticism change $\times$ neediness change $\times$ connectedness change) no specific hypotheses were forwarded.

(3) The third goal was to examine the moderating role of stressful life events experienced during treatment on self-criticism, neediness, and connectedness in predicting MD treatment response. It was hypothesized stressful life events would moderate the relationship between personality and treatment response. Specifically, it

was predicted that in the face of a stressful life event, individuals characterized by high self-criticism would experience poor treatment response compared to individuals characterized by low self-criticism. It was also hypothesized that in the face of a stressful life event, individuals characterized by high neediness would experience poor treatment response compared to individuals low in neediness. Finally, it was hypothesized that in the face of a stressful life event, individuals characterized by high connectedness would experience poor treatment response compared to individuals low in connectedness. Three three-way interactions (i.e., self-criticism × neediness × stressful life event, self-criticism × connectedness × stressful life event, and neediness × connectedness × stressful life event) were included to examine relations among these interactions on treatment response; however, no specific hypotheses were made regarding these analyses.

Chapter 2

Method

Participants

Individuals were recruited via community advertisements (e.g., daily newspapers, magazines) as part of a larger study conducted at the Mood Disorders Clinic at the Centre for Addiction and Mental Health in Toronto, Ontario. Respondents were screened over the telephone and then, if they passed the telephone screen, again during an in-person interview. Participants were required to meet the following inclusion criteria: (1) current DSM-IV diagnosis for non-psychotic, Major Depression based on the Structured Interview for DSM-IV, Axis I disorders (SCID-I/P; First, Spitzer, Gibbon, & Williams, 2002); (2) score > 16 on the 17-item Hamilton Rating Scale for Depression (HRSD; Hamilton, 1960); (3) between 18 and 70 years of age; (4) free of antidepressant medication for a minimum of two weeks prior to study entry; and (5) minimum grade 8 education and fluency in reading English. Exclusion criteria included (1) a SCID-I/P diagnosis of Bipolar Disorder (past or present), Schizoaffective Disorder, Schizophrenia, Substance Abuse Disorder (current or within the past 6 months), Borderline or Antisocial Personality Disorder, or Organic Brain Syndrome; (2) Electroconvulsive Therapy (ECT) in the past 6 months; and (3) concurrent active medical illness. A total of 174 (63 men, 111 women, mean age = 41.39) participants met these criteria and agreed to participate in the study.

Measures

Structured Clinical Interview for DSM-IV

The Structured Clinical Interview for DSM-IV, Patient Edition (SCID I/P; First et al., 2002) is a semi-structured diagnostic interview used to assess the presence of DSM-IV symptoms and disorders. Questions on the SCID I/P correspond with specific disorder criteria in the DSM-IV. The presence or absence of a given disorder is based on the number and severity of symptom criteria endorsed. The SCID I/P is considered the gold standard for clinical diagnoses and has demonstrated strong reliability and validity (Fennig, Craig, Lavelle, Kovasznay, & Bromet, 1994; Williams et al., 1992). Interviews were conducted by graduate level clinical psychology students trained to 'gold standard reliability status' on the SCID I/P. For interviewers to achieve 'gold standard reliability status', trainees had to match the diagnoses of a gold standard rater (i.e., a clinical psychologist trained in diagnostic interviewing and SCID I/P administration) on at least three consecutive SCID I/P interviews. Training also included detailed study and discussion of DSM-IV criteria for Axis I disorders during regular diagnostic supervision meetings.

Hamilton Rating Scale for Depression

The 17-item Hamilton Rating Scale for Depression (HRSD; Hamilton, 1960) is a semi-structured interview measure used to assess the intensity and type of depressive symptomatology. Participants respond to a number of mood-related questions such as: "Over the past week have you had any thoughts that life is not worth living?". Based on answers to these and follow-up questions, the interviewer rates each item on a scale of severity ranging from 0 – 4. The questionnaire yields an overall score from 0 – 52 with

higher scores indicating more intense depressive symptomatology. This measure has been

shown to be a reliable and valid measure of depressive symptomatology (Hamilton,

1967). Interviews were conducted by graduate level clinical psychology students trained

in administration of the HRSD.

Depressive Experiences Questionnaire

The Depressive Experiences Questionnaire (DEQ; Blatt, D'Afflitti, & Quinlan,

1976) is a 66-item self-report measure that assesses a broad range of feelings and

thoughts about the self and others. Respondents endorse items on a Likert scale ranging

from 1 (strongly disagree) to 7 (strongly agree) (e.g., Many times I feel helpless; I tend

not to be satisfied with what I have). Initial factor analyses of the DEQ identified three

factors, self-criticism, dependency, and efficacy with self-criticism and dependency

purported to be factors representative of depressive experiences (Blatt et al., 1976;

Zuroff, Quinlan, & Blatt, 1990). More recently, factor analytic work has identified two

stable factors within the overarching dependency construct labeled neediness and

connectedness (Rude & Burnham, 1995). For the purposes of the current study, the 14

DEQ items representing the original self-criticism dimension (Blatt et al., 1976), and the

9 neediness and the 10 connectedness DEQ items identified by Rude and Burnham

(1995) were examined.[1] Each of the self-criticism (Zuroff & Blatt, 1992), neediness, and

connectedness scales (Bacchiochi et al., 2003; Rude & Burnham, 1995) have

demonstrated adequate construct validity and reliability in both clinical and non-clinical

samples (Zuroff, Quinlan, & Blatt, 1990; Bacchiochi et al, 2003). Exploratory factor

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[1] Participants completed the entire 66-item DEQ; however, only the items used to tap the self-criticism, neediness, and connectedness dimensions were included in the current analyses.

analysis and reliability analyses conducted on the current sample suggested both the presence of these factors and that the each scale demonstrated adequate reliability and internal consistency. Scores for each of these scales were computed using item factor weights derived from Zuroff, Quinlan, & Blatt (1990).

The Life Events and Difficulties Schedule

The Life Events and Difficulties Schedule (LEDS-II; Bifulco et al., 1989) is a semi-structured, contextual interview and rating system used to assess the number and severity of stressful life events experienced by an individual over a given period of time. In a one-on-one setting, interviewers pose questions and probe answers regarding experiences in a number of life event domains, including health, education, and relationships. These life experiences are subsequently transcribed and scored by a panel of raters who are trained in the Bedford College LEDS procedures for defining and rating life events (see Brown & Harris, 1978). Raters utilize LEDS manuals, which together contain over 5,000 case vignettes, to provide anchoring and standardization of the ratings. Events are rated for their level of contextual 'threat' (i.e., severity) on a 4-point scale of (level 1: marked threat; level 2: moderate threat; level 3: some threat; level 4: little to no threat) (Brown & Harris, 1989). Raters are unaware of the subject's depression status (e.g., diagnosis, date of onset, depression history, dates of treatment) and subjective reactions to these life events.

For the current study, the time period of interest was the 16-week treatment phase (see description of the treatment procedure below). Therefore, stressful life events experienced by the participant during the 16 weeks of treatment were analyzed. Specifically, the presence or absence of at least one stressful life event experienced

during treatment that was rated level 3 or higher (i.e., rated as marked, moderate, or some level of threat) was included in the analysis.

Procedure

Individuals meeting full study criteria after the initial telephone and in-person screening interviews were invited to participate in the study. After obtaining written informed consent, participants completed the DEQ, the HRSD, and a number of other measures that were not of relevance to the present study. Participants were then randomly assigned to one of three treatment groups – CBT, IPT, or PT. Patients randomized to the two psychotherapy conditions received 16 consecutive weeks of manualized CBT or IPT conducted by an M.S.W. or Ph.D. level psychotherapist trained and certified in CBT or IPT. Patients assigned to the PT condition were treated for 16 weeks with an anti-depressant medication chosen at the discretion of the treating psychiatrist, according to the Canadian Network for Mood and Anxiety Treatment (CANMAT) guidelines (Kennedy et al., 2001). At the beginning of each session, a trained research assistant blind to patients' treatment assignment administered the HRSD to monitor progress. Following the Frank et al. (1991) empirically defined conceptualization of remission from MD, treatment response was operationalized as a 50% reduction in the 17-item HRSD scores from baseline to week 16 and a final HRSD score of equal to or less than 8. This definition of treatment response is a stringent measure of treatment efficacy as it requires both a significant relative decrease in depressive symptomatology from treatment intake to extake, as well as minimal residual depressive symptoms following treatment (Thase, Entsuah, & Rudolph, 2001). At

treatment completion, participants were interviewed with the LEDS to assess stressful life

events they had experienced during treatment.

Chapter 3

Results

Preliminary Analysis

Assessment of Dropout from Treatment

Of the 174 patients who were randomized to treatment, 34 voluntarily dropped out of treatment before completing the full protocol, leaving a total of 140 treatment completers. This 20% dropout rate is consistent with past MD treatment studies (Rector et al., 2000). Dropout rate was not significantly influenced by treatment type (CBT, IPT or PT), F (2, 171) = 1.52, p = .22. In addition, there were no significant differences between treatment completers and treatment dropouts on pre-treatment self-criticism (M = 1.06, SD = .72; M = 1.16, SD = .74), pre-treatment neediness (M = .40, SD = .77; M = .27, SD = .81), pre-treatment connectedness (M = -.09 SD = .71; M = .01, SD = .77), or HRSD scale scores at treatment intake (M = 17.8, SD = 3.63; M = 18.41, SD = 4.34), respectively (all ps > .39).

Furthermore, of the 140 treatment completers, personality data at both intake and extake was collected for 131 participants. Complete personality data were not available for the nine remaining treatment completers because they did not adequately complete the DEQ at extake (e.g., did not complete back page of the questionnaire). No significant differences emerged on any clinical or demographic variables between the group who had complete personality data and the group who did not. Therefore, goals 1 and 2 were addressed using this sample of 131 who had complete personality data at both treatment intake and extake.

Participants with LEDS and Participants without LEDS

Of the 131 treatment completers with full personality data, LEDS data was

obtained for 113 participants (86%). LEDS data was not obtained for the remaining 18

participants due to problems related to the recording of the LEDS interview (e.g.,

recorder not turned on at beginning of interview, interview inaudible, damaged tape). No

significant differences were found between those who received the LEDS interview and

those who did not on pre-treatment self-criticism (M = 1.07, SD = .70; M = .99, SD =

.79), pre-treatment neediness (M = .40, SD = .76; M = .38, SD = .83), pre-treatment

connectedness (M = -.06, SD = .73; M = -.23, SD = .60) or HRSD scale scores at

treatment entry (M = 17.98, SD = 3.59; M = 17.22, SD = 3.79), respectively (all ps > .26).

In addition, no significant differences were found between those who received the LEDS

versus those who did not receive the LEDS on treatment response, χ^2 (1, 131) = .95, p >

.95. Therefore, goal 3, which consisted of examining the effects of stressful life events

and personality on treatment response, was conducted on the sample of 113 participants

with full life event and personality data.

Demographic and Clinical Variables

The demographic and clinical characteristics for the sample of treatment

completers are presented in Table 1. Demographic and clinical variables were compared

between the treatment responders and non-responders. Independent sample t-tests were

used examine differences on continuously defined variables while Chi-Square tests were

conducted to analyze differences on categorically defined variables. For cases that had

missing demographic or clinical data, pair-wise deletion procedures were used. No

evidence for significant differences was found between treatment responders and

treatment non-responders on any variable, except age of onset of first MD $t(130) = 2.31$,

$p < .05$.

Table 1. Demographic and Clinical Variables for Treatment Responders and Treatment Non-Responders

Variable	Treatment Responders ($n = 89$)				Treatment Non-Responders ($n = 42$)			
	M	*SD*	*n*	*%*	*M*	*SD*	*n*	*%*
Age	41.25	12.61			43.23	11.77		
Gender								
Male			36	40			11	26
Female			53	60			31	74
Household Income ($)	75,409	52,479			75,383	43,724		
Marital Status (married)			34	38			18	43
HRSD at Tx intake	17.64	3.39			18.11	4.28		
# of MD episodes	2.94	3.13			2.32	1.67		
Age at first Dx	27.77	12.04			32.98	11.97		
Current episode duration (weeks)	61.94	90.48			71.93	89.82		
Comorbid Axis I disorder (presence)			17	19			7	17

Note: HRSD = Hamilton Rating Scale for Depression; Tx = treatment; MD = Major Depression; Dx = diagnosis of Major Depression.

Demographic and clinical variables were also assessed for associations with personality and life event variables of interest[2]. Analyses revealed that higher pre-treatment neediness was significantly associated with the presence of a comorbid Axis I disorder, $r(131) = .23$, $p < .01$, higher pre-treatment connectedness was associated with increased HRSD severity at treatment intake, $r(131) = .24$, $p < .01$ and increased participant age, $r(131) = .17$, $p < .05$, and a greater reduction in connectedness over the course of treatment was associated with an increased number of years of education,

$r(124) = .18, p < .05$. Furthermore, reductions in self-criticism $r(131) = .41, p < .001$,

neediness $r(131) = .33, p < .001$, and connectedness $r(131) = .32, p < .001$ over the

course of treatment were significantly associated with reductions in HRSD severity over

the course of treatment. Finally, women ($n = 51$, 69%) were more likely to experience a

stressful life event during treatment than men ($n = 19$, 49%), $\chi^2 (1, 113) = 4.42, p < .05$.

Treatment Type

To examine whether the type of treatment modality to which patients were

randomized (i.e., CBT, IPT, and PT) was associated with differential rates of treatment

response, a Chi Square analysis was conducted. A significant difference was found

between treatment modalities on treatment response, $F (2, 128) = 4.22, p < .05$. Mann-

Whitney tests were used to further explore differences between these treatment groups on

treatment response. No significant difference was found between CBT and IPT groups on

treatment response, $U (1, 91) = 970, p > .54$. Significant differences were found however

between PT (34/40, 85% achieved remittance) and IPT (27/47, 57%), $U (1, 87) = 681, p$

$<.01$, and PT and CBT (28/44, 64%), $U (1, 84) = 692, p < .05$. That is, PT yielded a

significant higher rate of treatment response when compared to IPT and when compared

to CBT. Given these significant differences between treatment modalities in predicting

treatment response, treatment type was entered as a covariate in the subsequent main

analyses.

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[2] Analyses conducted on stressful life event variables included the 113 participants for
whom life event data were collected.

Personality and Life Event Variables

Table 2 displays the means, standard deviations, and where relevant, percentages,

for the personality, stressful life event, and treatment response variables of interest. As

seen in Table 3, amongst the personality variables, self-criticism and connectedness were

significantly associated with neediness. In addition, personality change scores for all

participants completing treatment as follows: Self-criticism change during treatment (M =

-.68, SD = .81), neediness change during treatment (M = -.42, SD = .65), connectedness

change during treatment (M = -.19, SD = .74).

Table 2. Means and Standard Deviations for Personality and Life Event Variables.

Variable	M	SD	N	%
Self-criticism	1.04	.71		
Neediness	.42	.75		
Connectedness	-.07	.72		
Stressful Life Event (presence)			70	62
Treatment Response (responders)			89	68

Note: Means and standard deviations for the personality and treatment response
variables reported for entire sample of treatment completers (n = 131); Stressful life
event data reported for participants with full life event data (n = 113).

Table III. Zero-Order Correlations for Personality and Depression Variables.

	SC	Ned	Con	SLE	TR
Self-criticism	1	.26**	.17	.11	.12
Neediness	-	1	.21*	-.02	-.03
Connectedness	-	-	1	-.07	.06
Stressful Life Event				1	.08
Treatment Response					1

Note: Correlations for personality and treatment response variables reported for the entire
sample of treatment completers (n = 131); Correlations involving stressful life events
reported for participants with full life event data (n = 113).
* p < .05, ** p < .01

Main Analysis

Pre-Treatment Personality and Treatment Response

To examine the main and interactive effects of pre-treatment personality on treatment response, a hierarchical logistic regression was conducted with response to treatment serving as the dependent variable. To decrease multicollinearity between the main effects and interaction terms, all continuous predictor variables for this analysis, and all subsequent regression analyses, were standardized (Aiken & West, 1991). Initially, participant age, which was significantly related to connectedness at intake, was included as a predictor on the first step of this model; however, the inclusion of this variable did not change the pattern of relations among the main variables of interest and was therefore not included in the model presented below.

The logistic regression was constructed as follows: At step 1, Axis I comorbidity (defined as presence or absence), age at first MD onset, HRSD at treatment intake, and treatment type were entered as covariates as these variables were significantly associated with the pre-treatment personality predictor variables (see above). At step 2, pre-treatment self-criticism, pre-treatment neediness, and pre-treatment connectedness scores were entered. At step 3, the three two-way interactions among these personality traits were entered. At step 4, the three-way interaction among these personality traits was entered.

As seen in Table 4, at step 1, entering the covariates of Axis I comorbidity, age at first MD onset, HRSD at treatment intake, and treatment type did produce a good fit for the data, $\chi^2(4, 131) = 13.02$, $p < .05$. Specifically, a significant relation was found between treatment type and treatment response and age at first MD onset and treatment response. At step 2, the addition of the pre-treatment personality traits did not result in a

significant improvement of the model $\chi^2(7, 131) = 3.93$, $p = .27$, although it is noteworthy that self-criticism as a main effect did show a trend towards significance. The addition of the two-way interaction effects at step 3 did result in a significant improvement of the model, $\chi^2 (10, 131) = 22.84$, $p < .001$. Specifically, significant relations were found for the self-criticism × connectedness interaction and for the neediness × connectedness interaction. At step 4, the inclusion of the three-way interaction effect did not result in a significant improvement of the model, $\chi^2 (11, 131) = .08$, $p = .77$.

Table IV. Pre-treatment Personality as a Predictor of Treatment Response (n = 131).

	ß	Wald	R^2	Odds Ratio	p
Block 1			.13		
Axis I comorbidity	-.13	.06		.88	.81
Age at first MD onset	.04	4.86		1.04	.03
HRSD at intake	.03	.21		1.03	.64
Tx Type	-.67	6.96		.51	<.01
Block 2			.17		
Self-criticism	.39	3.29		1.48	.07
Neediness	-.23	1.05		.79	.31
Connectedness	-.01	.00		.99	.97
Block 3			.37		
Self-criticism × Neediness	-.44	.68		.65	.41
Self-criticism × Connectedness	1.47	7.14		4.36	<.01
Neediness × Connectedness	1.03	7.74		2.80	<.01
Block 4			.37		
Self-criticism × Connectedness × Neediness	.26	.08		1.30	.77

Note: HRSD = Hamilton Rating Scale for Depression; Tx = Treatment.

Following guidelines outlined by Aiken and West (1991), simple slopes analyses were conducted to further interpret the significant two-way interactions. First, to test the simple effects of connectedness on treatment response at high and low levels of self-criticism (defined as +/- 1 S.D. from the mean), two additional logistic regression analyses were performed. In the first analysis, treatment response was regressed onto Axis I comorbidity, age at first MD onset, HRSD at treatment intake, treatment type, connectedness, neediness, a coded variable representing high self-criticism, and all personality trait interactions. In the second analysis, treatment response was regressed onto Axis I comorbidity, age at first MD onset, HRSD at treatment intake, treatment type, connectedness, neediness, a coded variable representing low self-criticism, and all personality trait interactions. As seen in Figure 1, among individuals scoring higher in self-criticism, connectedness was not significantly related to treatment response, $B = .17$, $p = .66$. On the other hand, among individuals scoring lower in self-criticism, higher scores on connectedness were significantly associated with superior treatment response, $B = -1.43$, $p < .01$.
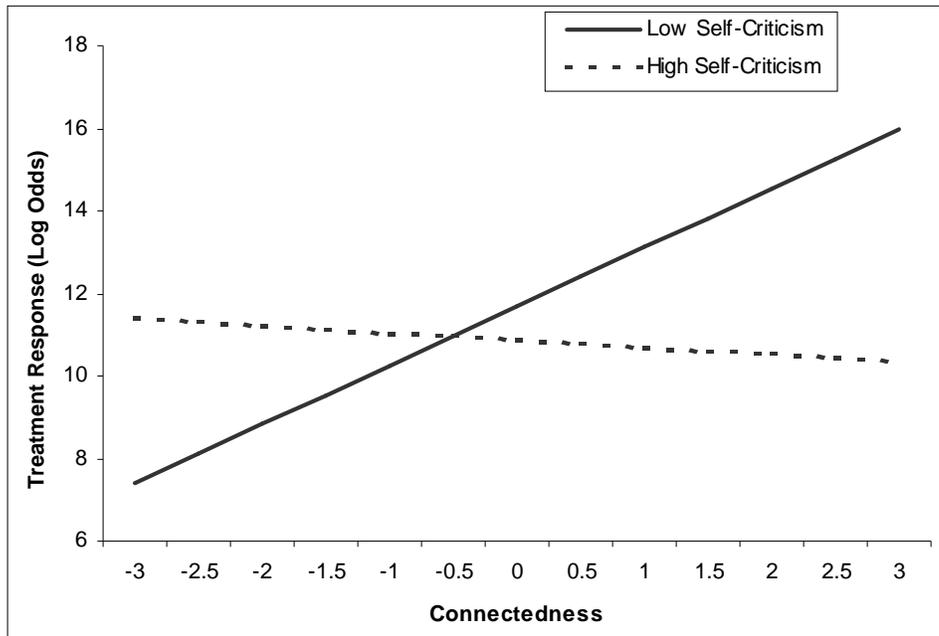
Figure 1: Treatment response as a function of the interaction between self-criticism and connectedness.

The procedure above was repeated to examine the interaction between neediness and connectedness on treatment response. Specifically, to test the simple effects of connectedness on treatment response at both high and low levels of neediness (defined as +/- 1 S.D. from the mean), two additional logistic regression analyses were performed. In the first analysis, treatment response was regressed onto Axis I comorbidity, age at first MD onset, HRSD at treatment intake, treatment type, self-criticism, connectedness, a coded variable representing high neediness, and all personality trait interactions. In the second analysis, treatment response was regressed onto Axis I comorbidity, age at first MD onset, HRSD at treatment intake, treatment type, self-criticism, connectedness, a coded variable representing low neediness, and all personality trait interactions. As seen in Figure 2, among individuals scoring higher in neediness, connectedness was not

significantly related to treatment response, $B = -.59$, $p = .35$. On the other hand, among individuals scoring lower in neediness, higher scores on connectedness were significantly associated with superior treatment response, $B = -2.19$, $p < .001$.
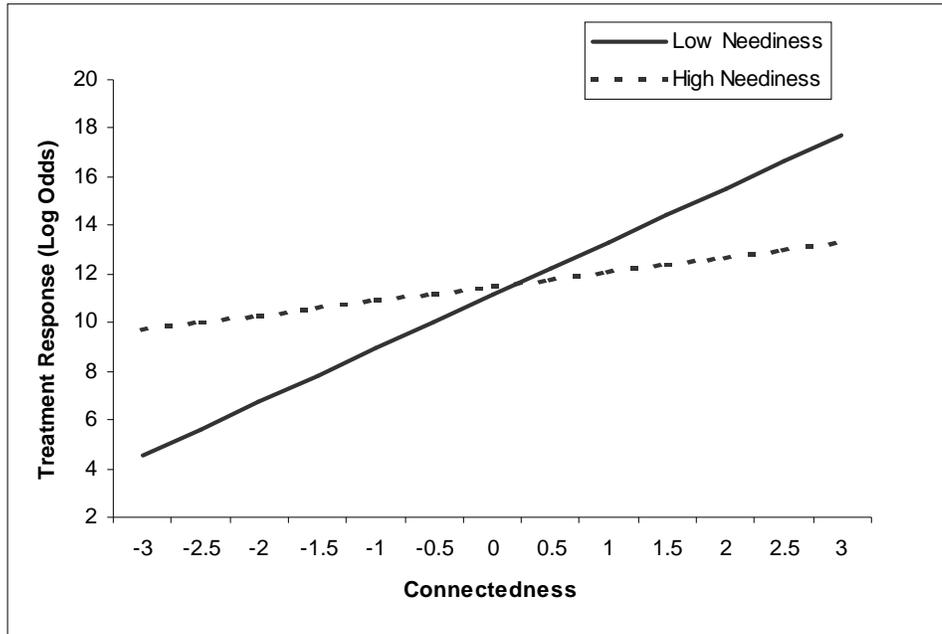

Figure 2: Treatment response as a function of the interaction between neediness and connectedness.

Personality Change and Treatment Response

To examine the main and interactive effects of personality change (i.e., personality trait score at intake subtracted from personality trait score at extake) over the course of treatment, a second hierarchical logistic regression was conducted with treatment response serving as the dependent variable. Initially, patient years of education, which was significantly related to connectedness change, was included as a covariate on the first step of this model; however, the inclusion of this variable did not change the pattern of relations among the main variables of interest and was therefore not included in

the model presented below. The logistic regression analysis was conducted as follows: At step 1, Axis I comorbidity, age at first MD onset, HRSD at treatment intake, treatment type, self-criticism at treatment intake, neediness at treatment intake, and connectedness at treatment intake were entered as covariates. At step 2, self-criticism change, neediness change, and connectedness change scores were entered. At step 3, the three two-way interaction terms among the personality change variables were entered. At step 4, the three-way interaction among the personality change variables was entered.

As seen in Table 5, at step 1, entering the covariates of Axis I comorbidity, age at first MD onset, HRSD at treatment intake, treatment type, and the personality variables at intake did produce a good fit for the data, $\chi^2(7, 131) = 16.96$, $p < .05$. Specifically, treatment type and age at first MD onset were significant predictors. At step 2, the entry of the personality change variables resulted in a significant improvement in the model, χ^2 $(10, 131) = 29.53$, $p < .001$. More specifically, a reduction in neediness over the course of treatment and a reduction in self-criticism over the course of treatment were significantly associated with superior treatment response (Figure 3). At step 3, the entry of the two-way interactions among personality change variables did not result in a significant improvement of the model, χ^2 $(13, 131) = 2.75$, $p = .43$. At step 4, the entry of the three-way interaction among personality change variables did not result in a significant improvement of the model, χ^2 $(14, 131) = 1.61$, $p = .20$.

Table V. Personality Change During Treatment as a Predictor of Treatment Response (n = 131)

	ß	Wald	R²	Odds Ratio	p
Block 1			.17		
Axis I comorbidity	-.10	.03		.90	.86
Age at first MD onset	.04	5.73		1.04	.02
HRSD at intake	.01	.06		1.02	.80
Tx Type	-.72	7.30		.48	<.01
Self-criticism at intake	.39	3.29		1.48	.07
Neediness at intake	-.23	1.04		.79	.31
Connectedness at intake	-.01	.00		.99	.97
Block 2			.42		
Self-criticism change	.91	7.29		2.48	<.01
Neediness change	.90	8.31		2.46	<.01
Connectedness change	-.01	.00		.99	.93
Block 3			.44		
Self-criticism change × Neediness change	-.31	.22		.73	.64
Self-criticism change × Connectedness change	.64	1.17		1.90	.28
Neediness change × Connectedness change	.30	.21		1.36	.65
Block 4			.45		
Self-criticism change × Neediness change × Connectedness change	1.37	1.16		3.92	.28

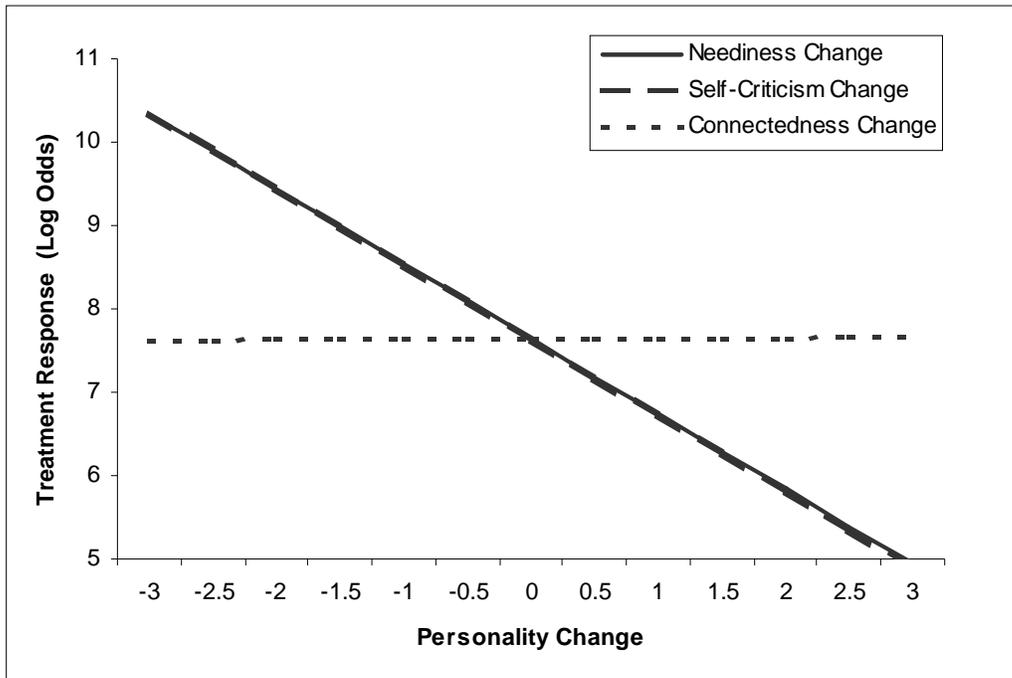*Note:* HRSD = Hamilton Rating Scale for Depression.

Figure 3: Treatment response as a function of the personality change during treatment.

Personality, Stressful Life Events, and Treatment Response

To examine the main and interactive effects of pre-treatment personality and stressful life events on treatment response, a hierarchical logistic regression was conducted with treatment response serving as the dependent variable. Initially, patient gender, which was significantly related to stressful life events, was included as a covariate on the first step of this model; however, the inclusion of this variable did not change the pattern of relations among the main variables of interest and was therefore not included in the model presented below. The model was constructed as follows: At step 1, Axis I comorbidity, age at first MD onset, HRSD at treatment intake, and treatment type were included as covariates as these variables were significantly associated with either the personality or life event variables of interest (see above). At step 2, pre-treatment self-

criticism, pre-treatment neediness, pre-treatment connectedness, and the presence or absence of a stressful life event during treatment (effects coded, 1 = presence of stressful life event, -1 = absence of stressful life event) were included in the model. At step 3, the three two-way interactions between each personality variable and the presence/absence of a stressful life event were included. Finally, at step 4, the three three-way interactions among personality variables and the presence/absence of a stressful life event were entered.

As seen in Table 6, at step 1, the inclusion of the covariates of Axis I comorbidity, age at first MD onset, HRSD at treatment intake, and treatment type did not produce a good fit for the data, χ^2 (4, 113) = 6.32, p = .18. At step 2, the main effects of pre-treatment personality and presence/absence of a stressful life event did not result in a significant improvement in the model, χ^2(8, 113) = 3.18, p = .53. At step 3, the inclusion of the personality × stressful life event interaction terms did result in a significant improvement in the model, χ^2 (11, 113) = 9.15, p < .05. Specifically, a significant relation was found for the self-criticism × stressful life event interaction. Finally, at step 4, the inclusion of the three-way interactions among personality and stressful life event variables did not result in a significant improvement in the model, χ^2 (14, 113) = 5.55, p = .14.

Simple slopes analyses were conducted to interpret the self-criticism × stressful life event interaction. To test the simple effects of self-criticism on treatment response both in the presence and absence of a stressful life event, two additional logistic regression analyses were performed. First, treatment response was regressed onto Axis I comorbidity, age at first MD onset, HRSD at treatment intake, treatment type, self-criticism, neediness, connectedness, a coded variable representing the presence of a

stressful life event during treatment, and the personality × presence of a stressful life event interactions. Second, treatment response was regressed onto Axis I comorbidity, age at first MD onset, HRSD at treatment intake, treatment type, self-criticism, neediness, connectedness, a coded variable representing the absence of a stressful life event during treatment, and the personality × absence of stressful life event interactions. As seen in Figure 4, for the group of individuals experiencing a stressful life event during treatment, higher self-criticism was significantly related to poor treatment response, $B = 0.84$, $p <$ .05. On the other hand, for the group who did not experience a stressful life event during treatment, self-criticism was not significantly related to treatment response, $B = -.26$, $p =$ .54.

Table VI. Personality and Stressful Life Events as a Predictor of Treatment Response (n = 113)

|	ß	Wald	R^2	Odds Ratio	p
Block 1			.08		
Axis I comorbidity	-.28	.23		.76	.63
Age at first MD onset	.02	1.49		1.02	.22
HRSD at intake	.02	.13		1.02	.72
Tx Type	-.52	.13		.59	.05
Block 2			.11		
Self-criticism	.34	2.09		1.40	.15
Neediness	-.06	.06		.95	.81
Connectedness	-.05	.06		.95	.81
Stressful life event	.18	.67		1.19	.41
Block 3			.21		
Self-criticism × Stressful life event	.55	4.33		1.73	.04
Neediness × Stressful life event	.30	1.40		1.35	.24
Connectedness × Stressful life event	.09	.13		1.09	.72
Block 4			.27		
Self-criticism × Neediness × Stressful life event	-.19	.05		.82	.82
Self-criticism × Connectedness × Stressful life event	1.09	1.12		3.00	.29
Neediness × Connectedness × Stressful life event	.81	3.02		2.24	.08

Note: HRSD = Hamilton Rating Scale for Depression.
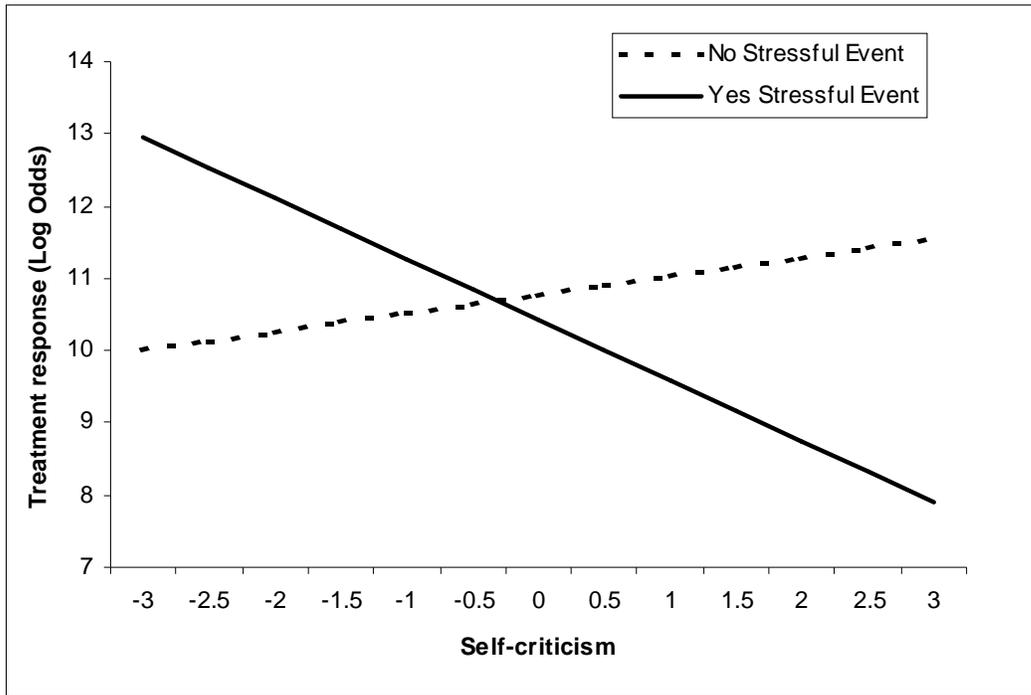
Figure 4: Treatment response as a function of the interaction between
*s*elf-criticism and the presence or absence of a stressful life event.

Chapter 4

Discussion

The overarching purpose of the current investigation was to examine the relations among personality, stressful life events, and MD treatment response. Specifically, the study had three goals. The first goal was to examine the main and interactive effects of pre-treatment self-criticism, neediness, and connectedness on MD treatment response. The second goal was to investigate the main and interactive effects of self-criticism change, neediness change, and connectedness change over the course of treatment on MD treatment response. The third goal was to examine the moderating role of stressful life events experienced during treatment on pre-treatment self-criticism, neediness, and connectedness in predicting MD treatment response.

Consistent with hypotheses for the first goal, a significant self-criticism × connectedness interaction was found. Specifically, for individuals low in pre-treatment self-criticism, higher connectedness scores were associated with superior treatment response, while there was no relation between connectedness and treatment response amongst individuals high in pre-treatment self-criticism. As well, a significant neediness × connectedness interaction was found such that for those low in pre-treatment neediness, higher connectedness scores were associated with superior treatment response, while there was no relation between connectedness and treatment response amongst individuals high in pre-treatment neediness. Consistent with hypotheses for the second goal, a main effect for self-criticism change and a main effect for neediness change emerged. Specifically, greater reductions in self-criticism over the course of treatment predicted superior treatment response and greater reductions in neediness during treatment predicted superior treatment response. Finally, consistent with hypotheses for the third

goal, the presence of a stressful life event during treatment was found to moderate the effect of self-criticism on treatment response. Specifically, in the face of a stressful life event, higher self-criticism scores were associated with poorer treatment response whereas amongst individuals not experiencing a stressful life event, self-criticism was not associated with treatment response. Each of these results is discussed in turn below.

Pre-treatment Personality and Treatment Response

A significant self-criticism × connectedness interaction was found such that amongst individuals characterized by low self-criticism, higher scores on connectedness were associated with superior treatment response. Previous research has found that while individuals high in self-criticism are characterized by a competitive, hostile interpersonal style, individuals low in self-criticism are generally characterized by cooperative and affiliative patterns of interaction. Indeed, compared to high self-criticism, low self-criticism has been associated with superior conflict resolution skills and higher levels of trust in romantic relationships (Zuroff & Duncan, 1999; Zuroff & Fitzpatrick, 1995), a willingness to accept suggestions, share resources, and cooperate with friends (Santor & Zuroff, 1997; 1998), and higher rates of agreeable, non-quarrelsome interpersonal behaviour (Zuroff, Mongrain, & Cote, 1999). High connectedness, on the other hand, represents a strong desire or commitment for secure relationships (Rude & Burnham, 1995). Recent research has associated high connectedness scores with an eagerness to start new friendships and competency within interpersonal relationships (Henrich, Blatt, Kuperminc, Zohar, & Leadbeater, 2001). One interpretation of the present self-criticism × connectedness interaction therefore is that amongst those low in self-criticism, the individuals scoring higher in connectedness achieved superior treatment response

because they were both were skilled at (low self-criticism) and wanted to (high connectedness) make social support connections, which in turn had a positive effect on treatment response. That is, it is possible that these individuals established social networks and interpersonal ties that were supportive, secure, and positive, thus augmenting treatment. This possibility dovetails nicely with findings that individuals with more social connections and more supportive social networks are less vulnerable to developing depressive symptomatology and more likely to respond well to depression treatment (Ezquiaga, Garcia, Bravo, & Pallares, 1998; Hirschfeld et al., 1998; Zuroff & Blatt, 2002).

Along similar lines, it is also possible that individuals who were characterized by a confluence of low self-criticism and high connectedness responded well to treatment because, due to their cooperative interpersonal style and desire to make connections, they were able to establish a strong and trusting relationship with their therapist, at least in the CBT or IPT treatment conditions, which led to superior treatment response. This is a compelling possibility given that the patient-therapist alliance is one of the strongest predictors of overall treatment outcome. Furthermore, there is evidence to suggest that the effect of certain personality traits on treatment response is mediated by the level of trust and comfort in the patient-therapist relationship (Shahar et al., 2004). While these hypothesized relations are intriguing, it must be noted, however, that mechanisms of action were not examined in the present study and interpretations implicating mediating factors accounting for the effects of personality on treatment response require direct examination. Nonetheless, the current findings suggest that low self-criticism and high connectedness augment one another to predict superior depression treatment response.

A significant neediness × connectedness interaction was also found such that for individuals characterized by low neediness, higher scores on connectedness predicted superior treatment response. Individuals low in neediness tend to be independent and are generally unconcerned with approval or reassurance from others regarding their self-worth (Rude & Burnham, 1995). For example, DEQ items with high negative loadings on the neediness dimension include, "Being alone doesn't bother me at all", and "I seldom worry about being criticized for things I have said or done" (Rude & Burnham, 1995, p. 328). Furthermore, research has found that low neediness is associated with low levels of interpersonal anxiety (Whiffen et al., 2000), and a more secure, less anxious interpersonal attachment style in both clinical and non-clinical samples (McBride, Zuroff, Bacchiochi, & Bagby, 2006). Similar to the self-criticism X connectedness finding mentioned above, it is possible that individuals characterized by low neediness and high connectedness responded particularly well to treatment because, due to their secure interpersonal style (i.e., low neediness) and desire to make interpersonal connections (i.e., high connectedness), these individuals had or were able to establish strong interpersonal connections which aided treatment response. Again, this possibility suggest that tracking the formation of relationships, both in terms of social support and the therapeutic alliance, would offer a compelling test of whether neediness X connectedness interaction on treatment response could be accounted for by either social support or the therapeutic alliance. While examining mediating factors accounting for these effects remains an avenue for future research, the present neediness X connectedness finding is particularly important as it supports the distinction between adaptive and maladaptive aspects of Blatt's (1974) original dependency construct.

It is noteworthy that although high scores in pre-treatment self-criticism demonstrated a trend towards predicting poor treatment response, no statistically significant main effects of pre-treatment personality on treatment emerged. One possibility for these null main effects of personality on treatment response is that in the current study treatment response was examined by collapsing patient outcome across each of the treatment modalities of CBT, IPT, and PT. Previous research has found that pre-treatment self-criticism is a predictor of treatment response in cognitive therapy, but not a predictor of treatment outcome in pharmacotherapy (Rector et al., 2000). Therefore, it is possible that if between treatment effects were examined, a main effect of self-criticism would emerge for CBT but not for PT. Due to low power, between-treatment analyses were not conducted in the current investigation, however this remains an important direction for future research on personality as a predictor of treatment response.

Personality Change and Treatment Response

Related to the study's second goal, a reduction in neediness over the course of treatment was significant associated with superior treatment response. Although mechanisms of action were not examined in the current investigation, this finding suggests that cognitive, behavioural, and interpersonal changes associated with decreases in neediness were important factors related to positive mood change. Previous research has found that individuals low in neediness, compared to those high in neediness, demonstrate more adaptive patterns of behaviour, particularly in the interpersonal domain. For example, Whiffen et al., (2000) reported that women high in neediness were rated as cold and submissive in their marital interactions by both themselves and their

romantic partner. Similarly, Zuroff et al. (1999) found that high neediness predicted low levels of behaviour-based agency suggesting a more submissive, less assertive interpersonal style. Therefore, it is possible adaptive interpersonal or cognitive changes associated with reduced neediness either resulted in, were the result of, or worked interdependently with changes in mood to be associated with superior treatment response. One important direction for future research therefore would be to model the causal relationship between changes in neediness and changes in mood to better understand the causal relationship between neediness change and mood change during treatment for MD.

It was also found that a reduction in self-criticism over the course of treatment predicted superior treatment response. This finding is consistent with previous research reporting that decreases in self-criticism over the course of various treatment modalities such as cognitive therapy predicts successful treatment response (DeRubeis & Feeley, 1990; Rector et al., 2000). Rector et al. have suggested that treatments such as cognitive therapy may be particularly effective in reducing depressive symptomatology by targeting negative, depressogenic cognitions. Given that high levels of self-criticism have been associated with excessive thoughts of inferiority, self-scrutiny, and demands for personal achievement, it may be that individuals who experienced a reduction in these maladaptive, self-critical thought patterns also experienced positive mood change. This possibility is consistent with findings by DeRubeis et al. (1990) who reported that adaptive personality and cognitive change in the first half of MD treatment predicted positive mood change in the second half of MD treatment; however, temporal patterns of self-criticism change and mood change were not examined in the current investigation and remain an avenue for future investigation.

It should be noted that it is possible that the null effect of connectedness change on treatment response may have been due to a restriction of range in connectedness change scores. Examining the personality change scores (see results section), it is clear that the connectedness scores did not demonstrate much change from treatment intake to extake, both in an absolute sense and relative to self-criticism change scores and neediness change scores. Therefore, the current null finding might have represented a deficiency in the instrument used to detect connectedness change rather than suggesting that connectedness change is, in actuality, not associated with treatment response.

Personality, Stressful Life Events, and Treatment Response

The third goal of the study was to examine whether stressful life events moderated the relationship between personality and MD treatment response. A significant self-criticism × stressful life event interaction was found such that amongst individuals who experienced a stressful life event, higher scores on self-criticism were significantly associated with poorer treatment response. This finding is consistent with Blatt's (1974; 1991) diathesis-stress model of depression vulnerability proposing that amongst individuals high in self-criticism, a significant life stressor can trigger intense feelings of worthlessness, guilt, inferiority, and self-scrutiny, thereby leading to a depressive episode or vulnerability to depressive symptomatology. It is possible, therefore, that in the present study, individuals high in self-criticism were especially vulnerable to the negative impact of a stressful life event because the event served to activate maladaptive self-critical thoughts, feelings, and behaviour patterns thereby resulting in poor treatment response. While multiple investigations have found that in the face of life stress, individuals characterized by self-criticism and related traits are vulnerable to MD onset (Mazure et

al., 2000), MD recurrence (Segal et al., 1992), and increases in depressive

symptomatology (Fichman et al., 1997; Robins et al., 1995), this was the first study to

find that in the face of a stressful life event, individuals high in self-criticism are

especially vulnerable to poor MD treatment response.

It was hypothesized that neediness and connectedness, which purportedly tap into

elements of MD risk and resilience, respectively, would interact with stressful life events

to predict treatment response; however, evidence for these relationships was not found.

This was surprising given that individuals high in neediness are characterized by

interpersonal anxiety and fears of abandonment which can be triggered or exacerbated by

stress, whereas individuals high in connectedness are characterized by strong

interpersonal skills and a desire to make social connections which may buffer the

negative effect of stress on depression (Blatt et al., 1995; Rude & Burnham, 1995;

Whiffen et al., 2000; Cogswell et al., 2006). One possibility for these null findings is that

'congruency' between stressful life events and the interpersonal-based traits of neediness

and connectedness was not assessed in the present study. Multiple investigations have

found that individuals characterized by maladaptive interpersonal-based traits such as

dependency are especially prone to depression in the face of interpersonal-based life

stressors, but not necessarily achievement based life stressors (Fichman et al., 1997,

Robins et al., 1995, Shahar et al., 2004). Furthermore, Mazure et al., 2000 reported that in

the face of a stressful life event, higher scores in sociotropy (a trait similar to

dependency) were associated with poor anti-depressant treatment. Therefore, while an

examination of personality-stressful life event congruency effects was not a goal of the

present study, it is possible that if interpersonal stressful life events were analyzed,

significant interactions between these stressful event and the interpersonal traits of

neediness and connectedness would emerge. Examining personality-stressful life event congruency effects on MD treatment response therefore remains an important direction for future research.

Future Directions

One direction for future research would be to examine whether gender moderates the effects of personality and stressful life events on MD treatment response. It has been found that women tend to score higher than men on both trait neediness and connectedness (Rude & Burnham, 1995; Bacchiochi et al., 2003). Therefore, it is possible that these traits, both on as independent predictors and in interaction with stressful life events, are differentially associated with treatment response for women and men.

In addition, personality traits other than self-criticism, neediness, and connectedness should be examined for their relations with stressful life events in predicting treatment response. For example, personality domains such as neuroticism and extraversion have been found to significantly predict depressive onset and treatment response in MD (Bagby et al., 1995; Ormel, Oldehinkel, & Brilman, 2001). Furthermore, personality inventories such as the Five-Factor Model of personality (Costa & McCrae, 1992) are comprised of broad personality domains (e.g., neuroticism) and more specific facets comprising these domains (e.g., rumination, anger-hostility) which afford a more fine-grained analysis of the relations among specific personality traits, stressful life events, and MD treatment response.

Limitations

There were a few limitations associated with the current study. First, due to power issues, between treatment differences were not assessed. For instance, one valuable question would have been whether the self-criticism X stressful life event interaction was a significant predictor of treatment response in each of the CBT, IPT, and PT conditions. Examining personality-stressful life event interactions in various treatment modes remains one important avenue for future research.

A second limitation was that due to the low number of 'severe' stressful life events (e.g., death of a loved one) which occurred over the 16-week treatment time period, the impact of these stressful events on treatment response was not specifically examined. As a result, stressful life events examined included those which were 'severe', but also those which were rated as less than severe according to the LEDS manual. This may have accounted for the lack of main effect found for stressful life events on treatment response.

Another limitation of the current study was that there was no control group to compare against active treatments. In this sense, it is possible that the results found in the present study were not merely predicting 'response to treatment', but also would predict naturalistic depression change over time, regardless of the presence or absence of treatment. Future studies using a control treatment condition may be able to address whether factors such as one's personality traits differentially predict response to treatment versus naturalistic depression change over time.

The current investigation suggests that personality and stressful life events play an important role in the treatment of MD. These findings have important clinical implications, especially in relation to depression therapy. For instance, identifying factors

that predict MD treatment response can lead to a greater understanding why certain individuals are treatment-resistant while others respond well to treatment, as well as elucidating the triggers of depression recurrence. Furthermore, research in this area can provide valuable insights into individual differences in treatment response, thereby having applicability in identifying individuals at a high-risk for maintaining and developing depression, as well as leading to the development of individualized treatments programs. The present investigation suggests that identifying factors that predict MD treatment response in an important and fruitful area of research. Further investigations into these factors are needed for a greater understanding of factors implicated in MD treatment response.

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Appendix A: Sample Questions from the Structured Clinical Interview for DSM-IV

<u>SCID-I/P</u>

A. MOOD EPISODES

IN THIS SECTION, MAJOR DEPRESSIVE, MANIC, HYPOMANIC EPISODES, DYSTHYMIC DISORDER, MOOD DISORDER DUE TO A GENERAL MEDICAL CONDITION, SUBSTANCE-INDUCED MOOD DISORDER, AND EPISODE SPECIFIERS ARE EVALUATED. MAJOR DEPRESSIVE DISORDER AND BIPOLAR DISORDERS ARE DIAGNOSED IN MODULE D.

CURRENT MAJOR DEPRESSIVE EPISODE	MDE CRITERIA				
Now I am going to ask you some more questions about your mood.	**A. Five (or more) of the following symptoms have been present during the same two-week period and represent a change from previous functioning; at least one of the symptoms is either (1) depressed mood, or (2) loss of interest or pleasure.**				
In the last month…					
➢ …has there been a period of time when you were feeling depressed or down most of the day nearly every day? (What was that like?)	**(1) Depressed mood most of the day, nearly every day, as indicated by subjective report (e.g., feels sad or empty) or observation made by others (e.g., appears tearful).**	?	1	2	3
IF YES: How long did it last? (As long as two weeks?)	***NOTE*: *IN CHILDREN AND ADOLESCENTS CAN BE IRRITABLE MOOD.*				
➢ …what about losing interest or pleasure in things you usually enjoyed? *IF YES:* Was it nearly every day? How long did it last? (As long as two weeks?)	**(2) Markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated either by subjective account or observation made by others).**	?	1	2	3
	***NOTE:* *WHEN RATING THE FOLLOWING ITEMS,*				

CODE "1" IF CLEARLY DUE TO A GENERAL MEDICAL CONDITION, OR TO MOOD-INCONGRUENT DELUSIONS/HALLUCINATIONS

FOR THE FOLLOWING QUESTIONS, FOCUS ON THE WORST TWO WEEKS IN THE EPISODE BEING EVALUATED (OR ELSE THE LAST TWO WEEKS IF EQUALLY DEPRESSED FOR ENTIRE TIME PERIOD)

During this [TWO-WEEK PERIOD]…

➤ …did you lose or gain any weight

(How much?)
(Were you trying to lose weight?)

    IF NO: How was your appetite? (What about compared to your usual appetite?) (Did you have to force yourself to eat?) (Eat [less/more] than usual?) (Was this nearly every day?)

(3) Significant weight loss when not dieting, or weight gain (e.g., a change of more than 5% of body weight in a month) or decrease or increase in appetite nearly every day.   **? 1 2 3**

NOTE: IN CHILDREN, CONSIDER FAILURE TO MAKE EXPECTED WEIGHT GAINS.

CHECK IF:

___ weight loss or decreased appetite
___ weight gain or increased appetite

➤ …how were you sleeping?

(Trouble falling asleep, waking frequently, trouble staying asleep, waking too early, OR sleeping too much?)
(How many hours a night compared to usual?)
(Was that nearly every night?)

(4) Insomnia or hypersomnia nearly every day   **? 1 2 3**

CHECK IF:

___ insomnia
___ hypersomnia

➤ …were you so fidgety or restless that you were unable to sit still?

(Was it so bad that other people noticed it?)
(What did they notice?)

(5) Psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down)   **? 1 2 3**

(Was that nearly every day?)

IF NO: What about the opposite – talking or moving more slowly than is normal for you? (Was it so bad that other people noticed it? What did they notice? Was that nearly every day?)

CHECK IF:

___ psychomotor retardation
___ psychomotor agitation

➢ …what was your energy like?

(Tired all the time?)
(Nearly every day?)

(6) Fatigue or loss of energy nearly every day   ? 1 2 3

During this time…

➢ …how did you feel about yourself?

(Worthless?)
(Nearly every day?)

(7) Feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick)   ? 1 2 3

IF NO: What about feeling guilty about things you had done or not done? (Nearly every day?)

NOTE**:** *CODE "1" OR "2" IF ONLY LOW SELF-ESTEEM.*

CHECK IF:

___ worthlessness
___ inappropriate guilt

➢ …did you have trouble thinking or concentrating?

(What kinds of things did it interfere with?)
(Nearly every day?)

(8) Diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others)   ? 1 2 3

CHECK IF:

___ diminished ability to think
___ indecisiveness

IF NO: Was it hard to make decisions about everyday things?

➢ …were things so bad that you

(9) Recurrent thoughts of death   ? 1 2 3

were thinking a lot about death or that you would be better off dead? What about thinking of hurting yourself?
IF YES: Did you do anything to hurt yourself?

(not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide

*NOTE***:** *CODE "1" FOR SELF-MUTILATION W/O SUICIDAL INTENT.*

CHECK IF:

___ thoughts of own death
___ suicidal ideation
___ specific plan
___ suicide attempt

| **AT LEAST 5 OF THE ABOVE SXS [A (1-9)] ARE CODED "3" AND AT LEAST ONE OF THESE IS ITEM (1) OR (2)**   1   3

> GO TO*CURRENT MANIC EPISODE A. 13*

> *IF UNCLEAR:* Has | (DEPRESSIVE EPISODE/ OWN WORDS) made it hard for you to do your work, take care of things at home, or get along with other people?

B. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

?   1   2   3

> GO TO*CURRENT MANIC EPISODE A. 13*

> Just before this began, were you physically ill?

> > *IF YES:* What did the doctor say?

> Just before this began, were you using any medications?
IF YES: Any change in the amount you were using?

C. Not due to the direct physiological effects of a substance (e.g., a drug of abuse, medication) or to a general medical condition.

?   1   3

IF GENERAL MEDICAL CONDITION OR SUB-STANCE MAY BE ETIOLOGICALLY ASSOCIATED WITH DEPRESION, GO TO *GMC/SUBSTANCE* A. 26 AND RETURN HERE TO MAKE RATING OF 1 OR 3.

SIMPLE BEREAV-EMENT

GO TO*CUR-RENT MANIC EPISODE * A. 13

...bgical general medical conditions include: degenerative neurological illnesses (e.g., Parkinson's disease), cerebro-vascular disease (e.g., stroke), metabolic conditions (e.g.Vitamin B-12 deficiency), endocrine conditions (e.g., hyper- and hypo-thyroidism, hyper- or hypoadreno-corticism); viral or other infections (e.g. hepatitis, mononucleosis, HIV), and certain cancers (e.g. carcinoma of the pancreas).

Etiological substances include: alcohol, amphetamines, cocaine, hallucinogens, inhalants, opioids, phencyclidine, sedatives, hypnotics, anxiolytics. Medications include antihypertensives, oral contra-ceptives, corticosteroids, anabolic steroids, anticancer agents, analgesics, anticholinergics, cardiac medications   **1   3**

➤ (Did this begin soon after someone close to you died?)

D. Not better accounted for by Bereavement, i.e., after the loss of a loved one, the symptoms persist for longer than 2 months or are characterized by marked functional impairment, morbid preoccupation with psychomotor retardation   **1**

Appendix B: Sample Questions from the Hamilton Rating Scale for Depression (HRSD)

HAMILTON RATING SCALE FOR DEPRESSION

1) What's your mood been like this past week?
   Have you been feeling down or depressed?
   Sad? Hopeless?
   In the last week, how often have you felt (OWN EQUIVALENT)? Every day?
   Have you been crying at all?   DEPRESSED MOOD (sadness, hopeless, helpless)

0 - absent
1 - indicated only on questioning
2 - spontaneously reported verbally
3 - communicated non-verbally i.e.,
   facial expression, posture, voice,
   tendency to weep
4 - VIRTUALLY ONLY: this is in
   spontaneous verbal and non-verbal
   communication

2) How have you been sleeping over the last week?
   Have you had any trouble falling asleep at the beginning of the night? (Right after you
   go to bed, how long has it been taking you to fall asleep?)
   How many nights this week have you had trouble falling asleep?

INSOMNIA EARLY:

0 - no difficulty falling asleep
1 - complains of occasional difficulty falling asleep - i.e., more than 1/2 hour
2 - complains of nightly difficulty falling asleep disturbed during the night
2 - waking during the night - any getting
   out of bed (except to go to bathroom)

3) How has your energy been this past week?

Have you been tired all the time?
This week, have you had any backaches, headaches or muscle aches?
This week, have you felt any heaviness in your limbs, back or head?

SOMATIC SYMPTOMS GENERAL:
0 - none
1 - heaviness in limbs, back or head, backaches, headache, muscle aches
2 - any clear-cut symptoms

Appendix C: Depressive Experiences Questionnaire (DEQ)

DEQ

Listed below are a number of statements concerning personal characteristics and traits.
Read each item and decide whether you agree or disagree and to what extent. Using the scale
below as a guide, indicate the extent to which you agree with each of the following statements by
circling the corresponding number on the scale provided beside each statement.

		Strongly Disagree						Strongly Agree
1.	I set my personal goals and standards as high as possible.	1…..2…..3…..4…..5…..6…..7
2.	Without support from others who are close to me, I would be helpless.	1…..2…..3…..4…..5…..6…..7
3.	I tend to be satisfied with my current plans and goals, rather than striving for higher goals.	1…..2…..3…..4…..5…..6…..7
4.	Sometimes I feel very big, and other times I feel very small.	1…..2…..3…..4…..5…..6…..7
5.	When I am closely involved with someone, I never feel jealous.	1…..2…..3…..4…..5…..6…..7
6.	I urgently need things that only other people can provide.	1…..2…..3…..4…..5…..6…..7
7.	I often find that I don't live up to my own standards or ideals.	1…..2…..3…..4…..5…..6…..7
8.	I feel I am always making full use of my potential abilities.	1…..2…..3…..4…..5…..6…..7
9.	The lack of permanence in human relationships doesn't bother me.	1…..2…..3…..4…..5…..6…..7
10.	If I fail to live up to expectations, I feel unworthy.	1…..2…..3…..4…..5…..6…..7
11.	Many times I feel helpless.	1…..2…..3…..4…..5…..6…..7
12.	I seldom worry about being criticized for things I have said or done.	1…..2…..3…..4…..5…..6…..7
13.	There is a considerable difference between how I am now and how I would like to be.	1…..2…..3…..4…..5…..6…..7
14.	I enjoy sharp competition with others.	1…..2…..3…..4…..5…..6…..7
15.	I feel I have many responsibilities that I must meet.	1…..2…..3…..4…..5…..6…..7
16.	There are times when I feel "empty" inside.	1…..2…..3…..4…..5…..6…..7

		Strongly Disagree		Strongly Agree

17. I tend not to be satisfied with what I have. 1…..2…..3…..4…..5…..6…..7

18. I don't care whether or not I live up to what other people expect of me. 1…..2…..3…..4…..5…..6…..7

19. I become frightened when I feel alone. 1…..2…..3…..4…..5…..6…..7

20. I would feel like I'd be losing an important part of myself if I lost a very close friend. 1…..2…..3…..4…..5…..6…..7

21. People will accept me no matter how many mistakes I have made. 1…..2…..3…..4…..5…..6…..7

22. I have difficulty breaking off a relationship that is making me unhappy. 1…..2…..3…..4…..5…..6…..7

23. I often think about the danger of losing someone who is close to me. 1…..2…..3…..4…..5…..6…..7

24. Other people have high expectations of me. 1…..2…..3…..4…..5…..6…..7

25. When I am with others, I tend to devalue or "undersell" myself. 1…..2…..3…..4…..5…..6…..7

26. I am not very concerned with how other people respond to me. 1…..2…..3…..4…..5…..6…..7

27. No matter how close a relationship between two people is, there is always a large amount of uncertainty and conflict. 1…..2…..3…..4…..5…..6…..7

28. I am very sensitive to others for signs of rejections. 1…..2…..3…..4…..5…..6…..7

29. It's important for my family that I succeed. 1…..2…..3…..4…..5…..6…..7

30. Often, I feel I have disappointed others. 1…..2…..3…..4…..5…..6…..7

31. If someone makes me angry, I let him (her) know how I feel. 1…..2…..3…..4…..5…..6…..7

32. I constantly try, and very often go out of my way, to please or help people I am close to. 1…..2…..3…..4…..5…..6…..7

33. I have many inner resources (abilities, strengths). 1…..2…..3…..4…..5…..6…..7

34. I find it very difficult to say "No" to the requests of friends. 1…..2…..3…..4…..5…..6…..7

35. I never really feel secure in a close relationship. 1…..2…..3…..4…..5…..6…..7

36. The way I feel about myself frequently varies: there are

	Strongly Disagree	Strongly Agree

times when I feel extremely good about myself and other times when I see only the bad in me and feel like a total failure. 1…..2…..3…..4…..5…..6…..7

37. Often, I feel threatened by change. 1…..2…..3…..4…..5…..6…..7

38. Even if the person who is closest to me were to leave, I could still "go it alone." 1…..2…..3…..4…..5…..6…..7

39. One must continually work to gain love from another person: that is, love has to be earned. 1…..2…..3…..4…..5…..6…..7

40. I am very sensitive to the effects of words or actions have on the feelings of other people. 1…..2…..3…..4…..5…..6…..7

41. I often blame myself for things I have done or said to someone. 1…..2…..3…..4…..5…..6…..7

42. I am very independent person. 1…..2…..3…..4…..5…..6…..7

43. I often feel guilty. 1…..2…..3…..4…..5…..6…..7

44. I think of myself as a very complex person, one who has "many sides." 1…..2…..3…..4…..5…..6…..7

45. I worry a lot about offending or hurting someone who is close to me. 1…..2…..3…..4…..5…..6…..7

46. Anger frightens me. 1…..2…..3…..4…..5…..6…..7

47. It is not "who you are," but "what you have accomplished" that counts. 1…..2…..3…..4…..5…..6…..7

48. I feel good about myself whether I succeed or fail. 1…..2…..3…..4…..5…..6…..7

49. I can easily put my own feelings and problems aside, and devote my complete attention to the feelings and problems of someone else. 1…..2…..3…..4…..5…..6…..7

50. If someone I cared about became angry with me, I would feel threatened that he (she) might leave me. 1…..2…..3…..4…..5…..6…..7

51. I feel uncomfortable when I am given important responsibilities. 1…..2…..3…..4…..5…..6…..7

52. After a fight with a friend, I must make amends as soon as possible. 1…..2…..3…..4…..5…..6…..7

53. I have a difficult time accepting weaknesses in myself. 1…..2…..3…..4…..5…..6…..7

| | Strongly Disagree | | | | | | Strongly Agree |

54. It is more important that I enjoy my work than it is for me to have my work approved.   1…..2…..3…..4…..5…..6…..7

55. After an argument, I feel very lonely.   1…..2…..3…..4…..5…..6…..7

56. In my relationships with others, I am very concerned about what they can give to me.   1…..2…..3…..4…..5…..6…..7

57. I rarely think about my family.   1…..2…..3…..4…..5…..6…..7

58. Very frequently, my feelings toward someone close to me vary: there are times when I feel completely angry and other times when I feel all-loving towards that person.   1…..2…..3…..4…..5…..6…..7

59. What I do and say has a very strong impact on those around me.   1…..2…..3…..4…..5…..6…..7

60. I sometimes feel that I am "special."   1…..2…..3…..4…..5…..6…..7

61. I grew up in an extremely close family.   1…..2…..3…..4…..5…..6…..7

62. I am very satisfied with myself and my accomplishments.   1…..2…..3…..4…..5…..6…..7

63. I want many things from someone I am close to.   1…..2…..3…..4…..5…..6…..7

64. I tend to be very critical of myself.   1…..2…..3…..4…..5…..6…..7

65. Being alone doesn't bother me at all.   1…..2…..3…..4…..5…..6…..7

66. I very frequently compare myself to standards or goals.   1…..2…..3…..4…..5…..6…..7

Appendix D: Sample Questions from the Life Events and Difficulties Schedule (LEDS)

SECTION I.   HEALTH

In this section you are also looking for change points in a health and/or interpersonal difficulties. Look for both positive and negative changes in condition. If the illness affects S or a family member, also ask about family history of disease or ailment. Ascertain exactly what the subject knows regarding diagnosis, prognosis, etc.

Has anyone in the family been ill?

What about you?
Your husband, children or parents, etc.?
What was the illness?
When was it diagnosed?
How serious was it? What were the symptoms?
Did they take any medication for it? Are they still? Any other treatments (surgeries, radiation,etc.)?
Hospital stay?
What is the prognosis?
Anyone off of work because of it? For how long?
When were they able to do things again, stop using crutches/cane, or stop taking medications, etc.?
Does this condition affect _____ now? Changes in lifestyle, diet, etc.?

Has anyone been admitted to or left the hospital during the time period?
Who? When did that occur?
For what illness?
          Medical tests or procedures done
          Surgery
            Was it inpatient or outpatient?
            Local or general anesthetic?
          Intensive Care Unit
          Critical Care Unit
Was it a routine admission or an emergency?
          Did you go to the emergency room? Why?
For how long?
What changes were involved for you?
Did your daily routine change at all? Did you have additional responsibilities
What is the medical outlook?
If someone outside household, how involved were you?

Have any relatives or close friends died?
Who? What of? When did this occur?
How close were you to _____? Were you involved at all?
Did you expect it?
Were you present?
Did you attend the funeral/service? Was this the first time?

Have you received any bad news during the time period about an illness that's been going on for some time?
Whose illness? When did you get the news? What was the news? New prognosis?

Are there any chronic health problems for yourself, close relatives, close friends?
How long has it been going on? What are symptoms? Any treatments?
How does it affect your daily life? (if other, how does it affect their daily life?)