Self-criticism and personal standards dimensions of perfectionism and daily depressive symptoms in depressed patients: Daily stress and avoidant coping as mediating traits

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Contribution of Authors

The present study is a part of a larger ongoing research project which is examining both PS and SC dimensions of perfectionism as predictors of depressive symptoms over time in a depressed clinical population. The study was designed by the following principal investigators: Drs. David Dunkley, David Zuroff, Ruta Westreich, Gail Myhr, Sonia Lupien, and François Ng. Jody-Lynn Berg, myself, coordinated the study, followed up with participants, collected the data, performed data entry, data management, and statistical analyses. In order to examine the role of daily stress and avoidant coping as mediators in the relation between SC and depressive symptoms, Dr. Dunkley in collaboration with the other principal investigators agreed for me to use part of the data for my master's thesis. For this purpose, in addition to the above mentioned tasks, I performed the literature review and interpreted the statistical analyses in collaboration with Dr. Dunkley. Finally, I wrote this thesis, which was reviewed by Drs. David Dunkley and Gail Myhr.

Abstract

This study of depressed outpatients ($N = 52$) examined the role of personal standards (PS) and self-criticism (SC) dimensions of perfectionism in daily stress, coping, and depressive symptoms. Prior to treatment, participants completed interviews and questionnaires in a lab session and then completed daily reports of stress, coping, and depressive symptoms at the end of the day for 7 consecutive days. Trait influences were found in the daily reports of stress, appraisals, coping, and depressive symptoms. In contrast to PS, SC was related to aggregated daily stress, negative social interactions, low perceived control, self-blame, avoidant coping, and guilt controlling for depressive severity. Path analyses demonstrated that the relation between SC and depressive symptoms was mediated by avoidant coping both directly and indirectly through event stress. Overall, these findings demonstrate the importance of clinicians focusing on the maladaptive aspects associated with self-critical components of perfectionism in the treatment for depression.

Résumé

Cette étude a examiné le rôle de deux dimensions du perfectionnisme (les «standards personnels» et l'autocritique) dans la perception du stress, les stratégies d'adaptation au stress et les symptômes dépressifs chez les personnes diagnostiquées avec une dépression (N = 52). Avant de commencer leur traitement, les participants ont rempli des questionnaires et ont participé à une séance d'entrevue dans notre laboratoire. Ensuite, pendant sept jours consécutifs, et ce, à la fin de la journée, les participants ont complété à domicile des questionnaires portant sur le stress vécu au quotidien, les stratégies d'adaptation au stress, les traits de personnalité et les symptômes dépressifs. Les résultats indiquent que les traits de personnalité influencent le nombre de stress vécu quotidiennement, l'évaluation du stress, les stratégies d'adaptation au stress et les symptômes dépressifs. Lorsque le niveau des symptômes dépressifs est maintenu égal pour tous, contrairement au perfectionnisme «standards personnels», le perfectionnisme autocritique est lié au stress vécu quotidiennement, à des interactions sociales négatives, à la perception de faible contrôle sur la situation stressante, à l'auto-accusation, à la culpabilité et à l'évitement. Une analyse des pistes causales a montré que le lien entre le perfectionnisme autocritique et les symptômes dépressifs passe directement et indirectement par l'évitement et ce, par le biais du stress. En somme, ces résultats démontrent la nécessité pour les cliniciens de se concentrer sur les aspects dysfonctionnels associés à la dimension autocritique du perfectionnisme lors du traitement de la dépression.

Introduction

World-wide public health surveys point to the increased global health burden for serious psychiatric disorders, particularly depression (see Lopez, Mathers, Ezzati, Jameson, & Murray, 2006). Neuropsychological conditions are the most important cause of nonfatal disability, of which depression is the leading cause for both males and females (Murray & Lopez, 1996). Furthermore, by 2020, it is expected that depression may be the second most serious medical disease with respect to global disease burden (Lopez et al., 2006). Major epidemiological studies indicate a high lifetime prevalence of major depression estimated at about 17% for individuals between 15-54 years of age, of which the highest prevalence, estimated at 19%, is among individuals aged 35-44 (Blazer, Kessler, McGonagle, & Swartz, 1994). Perhaps of greatest concern is the replicated finding that major depression is a recurrent illness in 80-90% of those who experience a first episode and takes a chronic course in about 10 to 30% (Kupfer & Frank, 2001). This trend highlights the importance of finding appropriate treatments for depression and has stimulated research interest in determining whether specific patient characteristics might predict favorable versus unfavorable treatment outcomes. Researchers have stressed the need to incorporate individual differences among depressed patients into research designs in order to better understand whether different types of patients are responsive to different aspects of the therapeutic process (e.g., Beutler, 2010; Blatt, Zuroff, Lance, Hawley, & Auerback, 2010; Zuroff, Mongrain, & Santor, 2004).

In the past decade, perfectionism has emerged as an important cognitive-personality factor that is consistently related to higher levels of depressive symptoms (e.g., Brewin & Fifth-Cozens, 1997; Dunkley, Sanislow, Grilo, & McGlashan, 2006; Enns & Cox, 2005) and predicts negative outcomes across psychological and pharmacological treatments of depression (e.g.

Blatt, Quinlan, Pilkonis, & Shea, 1995; Blatt, Zuroff, Bondi, Sanislow, & Pilkonis, 1998; Bulmash, Harkness, Stewart, & Bagby, 2009; Marshall, Zuroff, McBride, & Bagby, 2008; Rector, Bagby, Segal, Joffe, & Levitt, 2000; Shahar, Blatt, Zuroff, & Pilkonis, 2003; Zuroff et al., 2000; see Blatt & Zuroff, 2005 for a review). If perfectionism is an important patient factor in depression maintenance, it is important to understand how perfectionism dimensions relate to individual differences in the day-to-day life of depressed individuals. Studies also need to address more directly the mechanisms or processes through which perfectionism maintains its ill effects in depressed populations. It is important to identify these mechanisms because a better understanding of processes responsible for the persistence of depressive symptoms will facilitate the development of effective treatments.

The main objectives of the present study were to: (1) identify trait influences in daily stress, appraisals, coping, and depressive symptoms in depressed outpatients seeking treatment; (2) examine the relations of self-criticism (SC) and personal standards (PS) dimensions of perfectionism to trait influences in daily stress, appraisals, coping, and depressive symptoms in depressed outpatients; (3) examine the unique predictive validity of SC in predicting daily stress, appraisals, coping, and depressive symptoms over and above current depressive severity; and (4) examine daily stress and coping as mediators in the relationship between SC and depressive symptoms.

This paper is divided as follows: first, the impact of perfectionism on the treatment of depression is presented. Second, a review of the literature demonstrating perfectionism as a multidimensional construct is presented, including the differential relationships of SC and PS dimensions with depressive symptoms. Third, studies examining daily stress and coping as mediators between SC and depressive symptoms are discussed in order to help situate our current

study in the general scientific literature. Fourth, the methods and results of the present study are presented and the implications of the results for clinical treatment of depression are discussed. Fifth, conclusions are presented.

Depression

Treatment Efficacy for Depression

Several types of pharmacological and psychotherapeutic interventions have been shown to be effective in treating depression. However, the fact that the majority of people who become depressed will have multiple episodes and some depressions will be chronic indicates unfavorable treatment outcome for many depressed individuals. While antidepressant medications have been shown to help alleviate depressive symptoms, there is no evidence that they aid in reducing the risk for recurrence once their use has been terminated (see Hollon, Thase, & Markowitz, 2002). Psychotherapies that have fared well in comparison to antidepressant medication include interpersonal psychotherapy (IPT) and cognitive behavior therapy (CBT; see Hollon et al., 2002). IPT is a time-limited treatment that presumes that the etiology of depression is complex and uses the connection between current life events and the onset of depressive symptoms as a framework to help the patient understand his illness (see Weissman & Markowitz, 1994). IPT has been shown to improve the quality of interpersonal relationships, reduce acute distress, and prevent relapse and recurrence as long as it is continued (see Hollon et al., 2002). However, cognitive behavior therapy (CBT), which seeks to reduce depressive symptoms by changing the patient's dysfunctional expectations, beliefs, and evaluations, and enhancing adaptive coping and behaviour (A. T. Beck, Rush, Shaw, & Emery,

1979; J. S. Beck, 1995; DeRubeis, Tang, & Beck, 2001), has been consistently supported as effective in the treatment of depression and appears to help to reduce the risk of recurrence even after the termination of treatment (Hollon & Beck, 2004; Hollon et al., 2002). Regardless of the improvements of treatment, many patients still do not respond to the existing interventions. Only about half of all depressed patients respond to any given intervention, and only about one third eventually meet criteria for remission (Hollon et al., 2002).

A basic assumption that has influenced research on treatment for depression is that patients at the start of treatment are more alike than different (see Blatt et al., 2010). However, investigators have stressed the need to abandon the assumption of homogeneity among patients, and instead to consider trait influences or individual differences among depressed individuals in order to examine whether different types of patients respond to different treatment aspects (e.g., Blatt & Felson, 1993; Blatt & Zuroff, 2005; Blatt et al., 2010). Examining individual differences among specific treatment components, such as stress appraisals and coping could be helpful in developing new approaches to deal with patients who do not currently respond to treatment.

Individual Differences in Depressed Patients: The Impact of Perfectionism on Treatment of Depression

Thus far, the majority of research that has attempted to identify empirically supported treatments in mental health has focused on the type of treatment in determining therapeutic outcome and whether or not the treatment resulted in a reduction of manifested symptoms (see Westen, Novonty, & Thompson-Brenner, 2004 for a review). However, recent research has begun to examine patient's pretreatment personality characteristics as a factor in therapeutic outcome of depressed patients. Extensive research on personality and vulnerability to depression

(see Blatt, 1974, 2004; Blatt & Zuroff, 1992) has been based on two theories by Blatt (1974) and Beck (1983) who propose that depression in adults stems from two personality dimensions. Blatt's and Beck's two-configuration model of depression provides a comprehensive theoretical framework of personality development and psychopathology that identifies patient personality characteristics relevant to the therapeutic process (see Blatt & Zuroff, 2005).

Blatt's (1974) psychodynamic theory consisted of two forms of depression labeled anaclitic depression and introjective depression. Anaclitic depression is characterized by concerns of maintaining gratifying relationships with others based on an intense fear of abandonment and feelings of helplessness. Introjective depression is characterized by concerns of maintaining a sense of self as autonomous and positively valued, and is based on feelings of worthlessness, guilt, and sense of failure to live up to expectations and standards. Similarly, Beck (1983) proposed a cognitive theory which suggested that individuals with depression tended to show predominance of one of two modes which he labeled autonomous and sociotropic. The autonomous depressed patient blames himself for his deficiencies, is specifically self-critical about his failed performance and has a tendency to withdraw from others. In contrast, the sociotropic depressed patient is preoccupied with the theme of social deprivation and punishes himself for having undesirable characteristics. Thus, the autonomous type blames himself for inadequate performance and failure, while the socially dependent blames himself for being rejected and isolated. Blatt's and Beck's theories have proven favorable because they have been consistent with clinical observations of large individual differences among depressed patients and have promised to aid clinicians in the treatment of depression (see Zuroff et al., 2004).

Researchers have since examined personality as a factor in therapeutic outcome under the dual cognitive-personality frameworks proposed by Blatt (1974) and Beck (1983). Several

studies utilized the data from the NIMH sponsored Treatment of Depression Collaborative Research Program (TDCRP), which conducted a randomized clinical trial (RCT) comparing 16 sessions of outpatient psychotherapy for depression (IPT & CBT) with antidepressant medication and a double-blind placebo, in order to evaluate patient's personality characteristics as a factor in therapeutic change (see Blatt & Zuroff, 2005). Patient characteristics were examined using the Dysfunctional Attitude Scale (DAS; Weissman & Beck, 1978), which assesses two primary factors labelled Need for Approval and Perfectionism. The perfectionism factor of the DAS is consistent with the introjective (self-critical) dimension of depression (Blatt & Maroudas, 1992) centered on issues of self-worth and feelings of failure and guilt.

Results demonstrated that pretreatment perfectionism was a negative predictor of therapeutic outcome across all three treatment modalities (IPT, CBT, & antidepressant medication; see Blatt & Zuroff, 2005). Specifically, pretreatment perfectionism interfered with symptom reduction at treatment termination and follow-up 18 months later, the development of the therapeutic relationship in the latter half of the treatment process, and with the ability to maintain a supportive social network. Furthermore, pretreatment levels of perfectionism significantly impeded the capacity to adapt to stressful life events in the 18 months following the termination of treatment. Pretreatment SC, as measured by the Depressive Experiences Questionnaire (Blatt et al., 1976), has also been found to predict poor treatment response to IPT (Marshall et al., 2008) and CBT (Rector et al., 2000). In addition SC has been found to moderate the relation between stress and treatment response/outcome, so that in the presence of severe stress those high on SC were less likely to respond to treatment than those low on SC (Bulmash et al., 2009). These results demonstrate the need for research to gain a better understanding of depressed patients with higher levels of self-criticism/perfectionism.

The Role of Perfectionism in the Persistence of Depression

Perfectionism as a Multidimensional Construct: Self-Criticism versus Personal Standards Dimensions

Although previous findings demonstrate perfectionism to be an important patient variable that influences the treatment process (see Blatt & Zuroff, 2005), an obstacle to the interpretation of these findings is that it is unclear what is meant by the term "perfectionism." The perfectionism construct has become viewed as a multidimensional construct and has been conceptualized and defined in many different ways (see Flett & Hewitt, 2002). Multidimensional conceptualizations that have generated considerable interest have been those of Frost and colleagues (Frost, Marten, Lahart, & Rosenblate, 1990) and Hewitt and Flett (1991). Frost and colleagues (1990) considered perfectionism to be comprised of several different aspects directed towards the self, including personal standards, concern over mistakes, doubts about actions, parental expectations, parental criticism, and organization. On the other hand, Hewitt and Flett (1991) conceptualized the perfectionism construct as consisting of both intrapersonal (i.e., self-oriented perfectionism) and interpersonal (i.e., other-oriented perfectionism, socially prescribed perfectionism) dimensions. The measured components of the two conceptualizations overlap in meaningful ways that tap into a distinction between negative and maladaptive components of perfectionism and normal, potentially positive and adaptive aspects of perfectionism (Blankstein & Dunkley, 2002)

Although perfectionism dimensions have been defined and labelled in several ways, a number of investigators have noted the importance of distinguishing between two dimensions of perfectionism (see Dunkley, Blankstein, Masheb, & Grilo, 2006). Originally, Hamachek (1978)

suggested the necessity of reconceptualising perfectionism in a way that distinguished between normal and neurotic perfectionism. According to Hamachek (1978), what distinguishes normal from neurotic perfectionism is the presence of negative self-appraisal. Thus, normal perfectionism is captured by people who have high expectations and strive for realistic standards but are not prone to negative self-appraisal. On the other hand, neurotic perfectionism is captured by people who strive for excessively high standards while engaging in ongoing negative self-appraisal. Similarly, Frost et al. (1990) argued that "the setting of and striving for high standards is certainly not in and of itself pathological…the psychological problems associated with perfectionism are probably more closely associated with these critical evaluation tendencies " (p. 450). We refer to these two dimensions as *personal standards* (PS) and *self-criticism* (SC). PS involves the setting of high standards and goals for oneself, which is integral to the perfectionism concept typically described in the literature (see Shafran, Cooper, & Fairburn, 2002). In contrast, SC involves constant and harsh self-scrutiny, overly critical evaluations of one's own behavior, an inability to derive satisfaction from successful performance, and chronic concerns about others' criticism and expectations (Dunkley, Zuroff, & Blankstein, 2003).

The distinction between PS and SC dimensions is evident in numerous theoretical conceptualizations of perfectionism. For instance, Frost et al (1990) conceptualized the personal standards component of perfectionism as the setting of very high standards and the excessive importance placed on these high standards for self-evaluation. In contrast concern over mistakes is conceptualized as negative reactions to mistakes, a tendency to interpret mistakes as equivalent to failure, and a tendency to believe that one will lose the respect of others following failure (Frost et al., 1990). Likewise, Hewitt & Flett (1991) conceptualized the intrapersonal dimension of perfectionism (i.e. self-oriented perfectionism) as consisting of self-directed behaviours such

as setting high standards for oneself and a motivation to attain perfection. In contrast the interpersonal dimension (socially prescribed perfectionism) involves the perceived need to attain unrealistic standards and stringent expectations prescribed by significant others (Hewitt & Flett, 1991; 1993). Thus, the perceived inability to meet or control the imposed standards of others may result in self-criticism and self-blame (see Dunkley & Blankstein, 2000). More recently, Slaney, Rice, and Ashby (2002) presumed high standards and order to represent normal or adaptive perfectionism and discrepancy (i.e., perceived inability to meet high standards set for the self) to be the essential defining negative dimension of perfectionism. Blatt (1974) also proposed a specific cognitive-personality factor labelled self-criticism that reflects a negative dimension of perfectionism. Blatt defined self-critical individuals as demanding and critical of themselves, and concerned about their inability to reach their goals and satisfy the expectations of others (Blatt & Zuroff, 1992).

It is noteworthy that several studies have demonstrated that there is considerable overlap among numerous measures derived from these diverse theoretical frameworks, including Frost et al.'s (1990) Multidimensional Perfectionism Scale (FMPS), Hewitt & Flett's (1991) Multidimensional Perfectionism Scale, the Almost Perfect Scale-Revised (APS-R; Slaney, Rice, Mobley, Trippi, & Ashby, 2001), the Depressive Experiences Questionnaire (DEQ; Blatt et al., 1976), and the DAS (Weissman & Beck, 1978). Factor analytic studies have consistently yielded two higher-order latent factors of perfectionism that cut across many different measures of these cognitive-personality styles in both college students (e.g., Blankstein & Dunkley, 2002; Dunkley, Blankstein, Zuroff, Lecce, & Hui, 2006; Powers, Zuroff, & Topciu, 2004) and patient samples (e.g., Clara, Cox, & Enns, 2007; Cox, Enns, & Clara; 2002; see Dunkley, Blankstein, Masheb, & Grilo, 2006; Stoeber & Otto, 2006 for reviews). Among these factor analytic studies identifying

two dimensions of perfectionism, researchers have identified subscales from various measures that represent the PS and SC dimensions (e.g., Blankstein & Dunkley, 2002; Cox et al., 2002; Frost et al., 1993; see Dunkley, Blankstein, Masheb, & Grilo, 2006; Stoeber & Otto, 2006 for reviews).

For instance, several studies have demonstrated that the FMPS personal standards and HMPS self-oriented scales load onto one factor (PS) that reflects standard setting that is not by itself maladaptive. On the other hand, FMPS concern over mistakes and HMPS socially prescribed perfectionism load onto a separate factor (SC), considered to be maladaptive (e.g., Bieling, Israeli, & Antony, 2004; Frost et al., 1993; see Stoeber & Otto, 2006 for a review). Studies have also demonstrated that the APS-R high standards subscale load onto a PS factor with FMPS personal standards and HMPS self-oriented perfectionism, while APS-R discrepancy along with FMPS concern over mistakes and HMPS socially prescribed perfectionism load onto a SC factor (Blankstein, Dunkley, & Wilson, 2008; Dunkley & Ma, 2010; Suddarth & Slaney, 2001). DEQ self-criticism has also been found to reflect the same latent construct as HMPS socially prescribed perfectionism (e.g., Dunkley & Blankstein, 2000; Dunkley, Blankstein, Zuroff et al., 2006), FMPS concern over mistakes (Dunkley et al., 2003; Powers et al., 2004), and APS-R discrepancy (Dunkley & Ma, 2010). The DAS perfectionism scale has been demonstrated to be more closely related to SC than PS (Dunkley & Kyparissis, 2008; Dunkley, Sanislow et al., 2006; Powers et al., 2004). Contrary to the prevailing assumption that DAS perfectionism reflects the setting of high personal standards (Sherry, Hewitt, Flett, & Harvey, 2003), factor analytic studies have found DAS perfectionism to load onto the SC latent factor along with HMPS socially prescribed perfectionism, FMPS concern over mistakes, DEQ self-criticism (e.g., Powers et al., 2004), and APS-R discrepancy (Dunkley & Ma, 2010). Overall,

these factor analytic studies have demonstrated that PS is reflected by FMPS personal standards, HMPS self-oriented perfectionism, and APS-R high standards, whereas SC is reflected by DEQ self-criticism, DAS perfectionism, FMPS concern over mistakes, HMPS socially prescribed perfectionism, and APS-R discrepancy.

It is important to emphasize that PS and SC are conceptualized as continuous dimensional constructs as opposed to categorical constructs that refer to types of individuals (see Zuroff et al., 2004). The distinction between PS and SC is relevant to understanding which characteristics of perfectionism are related to persistent depressive symptoms. Research has demonstrated that SC measures have a strong, consistent relation with depressive symptoms in both nonclinical (Antony, Purdon, Huta, & Swinson, 1998; Dunkley & Blankstein, 2000; Dunkley, Blankstein, Masheb, & Grilo, 2006; Powers et al., 2004; Sherry et al., 2003; Stöber, 1998) and clinical populations (Antony et al., 1998; Clara et al., 2007; Enns & Cox, 1999; Sherry et al., 2003). These studies have also demonstrated that, in contrast to SC, PS measures displayed only weak or negligible associations with depressive symptoms. Therefore, in understanding the precise nature of the implications of findings linking perfectionism to depressive symptoms, these findings underscore the importance of focusing on self-critical evaluative tendencies rather than high personal standards and active striving to attain perfection (see Dunkley, Blankstein, Masheb, & Grilo, 2006; Dunkley, Zuroff, & Blankstein, 2006).

Self-Criticism and Depression: Mediational pathways

I. Daily Stress, Coping, and the Maintenance of Depression

Although a link between SC and depression has been established, future studies need to address specific mechanisms through which SC exerts its negative effects in clinically depressed

populations. A deeper understanding of processes responsible for the persistence of depressive symptoms will facilitate the improvement of existing treatments. If one is interested in why SC is related to chronic depressive symptoms, one needs to understand how individuals with relatively higher levels of SC typically respond to minor stressors that occur on a daily basis. Whereas major life events have been found to be predictive of depression onset (Brown & Harris, 1978), minor stressors have been found to contribute to ongoing distress and maintenance of depressive symptoms (Depue & Monroe, 1986; McGonagle & Kessler, 1990). Numerous investigators have argued that SC may not only interact with stress to produce psychopathology but may play a role in the construction of a stressful environment (e.g., Blankstein & Dunkley, 2002; Hewitt & Flett, 2002; Zuroff et al., 2004).

Both high-PS individuals and high-SC individuals are assumed to instigate daily stress for themselves because they engage in rigorous self-evaluations and mainly focus on the negative aspects of events so that even mundane events are interpreted as stressful (see Hewitt & Flett, 1993). While individuals high on PS have elevated levels of stress, these individuals also engage in active forms of coping such as positive reinterpretation and problem-focused coping (see Dunkley, Blankstein, Halsall, Williams & Winkworth, 2000). Thus, it could be suggested that the negative impact of daily stress for high-PS individuals might be offset by their ability to engage in active coping. In contrast, high-SC individuals also experience high levels of daily stress because they fear interpersonal rejection and criticism from others to the extent that they elicit negative social interactions (See Dunkley, Sanislow et al., 2006). Furthermore, these individuals are theorized to be preoccupied with their deficiencies and to quickly doubt their abilities to handle stressful situations to the extent that they withdraw and engage in avoidant coping rather than adaptive coping styles. The tendency for high-SC individuals to engage in

avoidant coping hinders alleviation of the depressive symptoms associated with stressful situations (Carver, Scheier, & Weintraub, 1989; Holahan, Moos, Holahan, Brennan, & Schutte, 2005).

Previous research has demonstrated that in contrast to PS, SC is related to daily stress and avoidant coping (e.g., Dunkley, Blankstein, Halsall et al., 2000; Dunkley, Zuroff, & Blankstein, 2003; Dunkley, Sanislow, Grilo, & McGlashan, 2006) which helps to explain why SC is consistently related to depressive symptoms. However, investigators have questioned whether characteristics that are thought to reflect personality-based vulnerability to depression are really concomitants of concurrent depression (see Zuroff et al., 2004). Several studies have assessed the unique predictive utility of SC and found SC to be associated with daily stress, negative social interactions, avoidant coping, and subsequent depressive symptoms controlling for initial depressive severity (e.g., Dunkley, Sanislow, Grilo, & McGlashan, 2006; see Zuroff et al., 2004 for a review).

II. Daily Stress and Avoidant Coping as Mediators in the relation between Self-Criticism and Depression

Cognitive appraisals of stressful events and coping are identified as critical mediators in the relationship between stressful person-environment relations and outcomes according to Lazarus and Folkman's (1984) cognitive theory of psychological stress and coping. Consistent with this theory, studies have also identified daily stress and coping to be critical mediators in the relationship between SC and depressive symptoms (Dunkley et al., 2000; 2003; Dunkley, Sanislow et al., 2006; Dunn, Whelton, & Sharpe, 2006). For instance, in a study of 443 university students Dunkley et al. (2000) tested and cross-validated a meditational model that

examined stress and coping as key mechanisms in the relation between SC and distress. The results demonstrated that daily hassles (measured by participants' appraisal of daily events as stressful) and avoidant coping were unique mediators that explained the relationship between SC and distress. That is, SC was associated with hassles and avoidant coping, which, in turn, were associated with distress respectively.

Although Dunkley et al. (2000) demonstrated stress and coping as unique mediators in the relation between SC and distress, the study assessed these traits using retrospective, dispositional self-report measures that are subject to recall biases and distortions. Researchers have stressed the importance of aggregating situational reports across a variety of situations, thereby creating empirically derived trait measures of stress and coping (see Bolger, Davis, & Rafaeli, 2003; Schwartz, Neale, Marco, Shiffman, & Stone, 1999). Dunkley et al. (2003) built on Dunkley et al.'s (2000) study by using aggregated daily measures among 163 university students in order to test aggregated daily measures of stress, event appraisals, and coping as mediators in the relation between SC and daily affect. This study found that hassles and avoidant coping mediated the relation between SC and negative affect. Moreover, avoidant coping was demonstrated to be indirectly related to negative affect through its positive association with hassles and event stress.

Additional studies have tested the generalizability of Dunkley et al.'s (2000; 2003) previous results with university students by examining different populations (Dunkley, Sanislow et al., 2006; Dunn et al., 2006). Specifically, Dunn et al. (2006) examined the role of hassles and avoidant coping as mediating the relationship between SC and distress among 370 university professors. Results corroborated with previous findings by demonstrating that SC and distress was fully mediated by hassles and avoidant coping. In addition, Dunkley, Sanislow, et al. (2006)

built on Dunkley et al.'s (2000; 2003) studies by examining the generalizability of previous results with university students to a heterogeneous clinical sample of 96 patients. Results demonstrated that previous findings in student populations extended to a clinical sample in that avoidant coping and daily stress mediated the relation between SC and depressive symptoms. Overall, these findings suggest that the relation between SC and depressive symptoms is mediated by the tendency of these individuals to experience higher levels of daily stress and to engage in avoidant kinds of coping.

III. Limitations in the Present Literature: Benefits of a Daily Diary Approach

Although previous studies have shown SC to be an important cognitive-personality factor that is consistently related to depressive symptoms, a major limitation of the present literature is that very little is known about the daily lives of depressed individuals. If one is interested in why SC is an important patient factor in depression maintenance and treatment outcome, one needs to understand how SC relates to individual differences in the day-to-day life of depressed individuals. For instance, Gordon Allport (1942) stressed that becoming acquainted with the particulars of daily life as it is lived is the first step in psychological knowledge. Examining the everyday lives of depressed individuals is of particular importance for treatment implications because of the emphasis of daily functioning in treatment designs. For instance, an essential component of CBT for depression is centered on how individuals evaluate, and react to daily stressful situations (see Gunthert, Cohen, Butler, Beck, 2005). Thus, CBT teaches depressed patients to reduce their negative affect by using adaptive cognitive and behavioural strategies to cope with daily stressful situations, and modify negative thoughts (Alford & Beck, 1997). Given CBT's emphasis on changing perceptions and reactions to everyday stressors, it is surprising

how few studies have actually used daily process designs, such as daily diaries, to examine how depressed individuals confront and cope with stressors on a day-to-day basis (see Gunthert et al., 2005).

A fundamental benefit of diary methods is they allow an examination of reported events and experiences in their natural, spontaneous context, providing complementary information to traditional methods (see Bolger et al., 2003). By reducing the amount of time between an experience and the account of this experience, daily diaries dramatically reduce the likelihood of faulty retrospection. The fact that daily process designs minimize retrospective recall bias is of particular importance among depressed populations where negative recall biases might be particularly strong (see Gunthert, Cohen, Butler, & Beck, 2007). Furthermore, given that SC presumably exerts its influence on depressed patients through reactions to everyday stressors, it could be argued that retrospective dispositional measures are several steps removed from the thoughts and appraisals that occur when an individual is confronted with a daily stressor. Assessing depressed patients' actual thoughts in response to naturally occurring stress is a more direct strategy in examining the relations among SC, daily stress, and coping. Thus, the present study addresses this fundamental gap in the literature by utilizing a daily diary design with a clinically depressed population in order to assess how these individuals react to and cope with everyday stressors.

A specific limitation in previous research on depression is the lack of incorporating trait influences into research designs. Investigators have stressed the importance of incorporating trait influences into research designs in order to better understand whether specific trait characteristics enhance or impede treatment for depression (see Blatt et al., 2010). First, however, it is unknown to what extent individual differences in stress, coping, and depressive symptoms actually exist in

depressed patients. In their sample of university students, Dunkley et al. (2003) demonstrated modest to moderate trait influences or individual differences in event stress, appraisals, and coping, and large individual differences in hassles. However, it is unknown whether these results would generalize to a depressed population. Thus, the present study examines the fundamental question of whether trait influences exist in daily reports of stress, coping, and depressive symptoms in a clinical population diagnosed with major depressive disorder (MDD).

Second, it is unknown how PS and SC dimensions of perfectionism differentially relate to individual differences in stress, coping, and depressive symptoms among depressed patients. To learn why individuals with high SC are also vulnerable to depression, it is important to understand how these individuals typically respond to minor stressors that occur on a daily basis. Consequently, another limitation of the above mentioned studies, with the exception for Dunkley et al. (2003), was the use of retrospective, summary assessments of stress and coping. Researchers have argued, however, that daily diary measures completed over several days allow researchers to aggregate each person's within-person data to examine between-person averages in these aggregated measures (Bolger et al., 2003). Furthermore, aggregating situational reports can be a more ecologically valid method for assessing characteristics than are retrospective questionnaires that are more susceptible to memory biases and distortions (e.g., Moskowitz, 1986). Therefore, similar to Dunkley et al. (2003), the proposed study obtained daily measures of stress, coping, and depressive symptoms over a 7-day period in order to assess how PS and SC dimensions of perfectionism relate to individual differences in these daily measures. We then aggregated each person's stress, avoidant coping, and depressive symptom responses across 7 days, thereby empirically deriving trait measures. This allowed us to relate PS and SC dimensions of perfectionism to aggregated daily reports of these trait measures in order to assess

how these dimensions relate to whatever individual differences exist in stress, coping, and depressive symptoms among depressed patients.

Lastly, although research has demonstrated SC to be an important patient factor in depression maintenance, studies need to address more directly the mechanisms or processes through which perfectionism maintains its ill effects in depressed populations. While stress and coping have been demonstrated to be important mediators in the relation between SC and depressive symptoms (Dunkley et al., 2000; Dunkley et al., 2003; Dunkley, Sanislow, et al. 2006; Dunn et al., 2006), these results have not been generalized to a depressed population. Although Dunkley, Sanislow, et al. (2006) studied a heterogeneous clinical population, the sample was primarily comprised of patients with personality disorders (55%) and anxiety disorders (42%), and only one third of the sample was actually diagnosed as clinically depressed. In order to establish the applicability of previous findings to understanding depression, these hypotheses need to be tested in a more homogeneous clinical population of patients who have a primary diagnosis of unipolar depression. Therefore, the present study addresses this limitation by examining daily stress and avoidant coping as mediators in the relation between SC and depressive symptoms among clinically depressed individuals.

Present Study

Rationale

Depression is a serious medical disease with respect to global disease burden (Murray & Lopez, 1996), and has alarmingly high rates of lifetime prevalence and recurrence (Blazer et al., 1994). These trends highlight the importance of research aimed at incorporating individual

differences among depressed patients in order to better understand whether specific pretreatment personality characteristics facilitate or impede treatment outcome for certain depressed individuals (e.g., Blatt et al., 2010; Beutler, 2010; Zuroff et al., 2004). In the past decade, perfectionism has emerged as a multidimensional construct of which the SC dimension has been consistently related to higher levels of depressive symptoms (Dunkley et al., 2000; 2003; Dunkley, Sanislow et al., 2006) and predicts negative outcomes across psychological and pharmacological treatments of depression (see Blatt & Zuroff, 2005 for a review). Although research has demonstrated SC to be an important patient factor in depression maintenance, it is unknown how perfectionism dimensions manifest themselves on a day-to-day basis in depressed patients. Studies need to address more directly the mechanisms or processes through which perfectionism maintains its ill effects in depressed populations. It is important to identify these mechanisms because a better understanding of processes responsible for the persistence of depressive symptoms will facilitate the development of effective treatments.

Objectives

The present study was the first to examine the role of PS and SC in the day-to-day lives of depressed individuals in order to highlight daily stress and avoidant coping as explanatory processes in the relation between SC and depressive symptoms. The main objectives of the present study were to: (1) identify whether trait influences exist in daily stress, appraisals, coping, and depressive symptoms among depressed outpatients; (2) examine the relations of self-criticism and personal standards dimensions of perfectionism to individual differences in daily stress, appraisals, coping, and depressive symptoms in depressed outpatients; (3) examine the unique predictive validity of SC in predicting daily stress, appraisals, coping, and depressive

symptoms over and above current depressive severity; and (4) examine daily stress and coping as mediators in the relationship between SC and depressive symptoms.

It was hypothesized that moderate to large trait influences in stress, appraisals, coping, and depressive symptoms would be demonstrated. Moreover, in contrast to PS, it was expected that SC would be related to aggregated measures of daily stress, negative social interactions, avoidant coping, and depressive symptoms. It was also predicted that SC would uniquely predict daily stress, negative social interactions, avoidant coping, and depressive symptoms when controlling for depressive severity. Lastly, figure 1 depicts the hypothesized relations based on previous structural models (Dunkley et al., 2000; 2003; Dunkley, Sanislow et al., 2006) for the mediation of the relation between SC and depressive symptoms. It was predicted that (a) SC would be linked to aggregated daily avoidant coping; (b) avoidant coping would be linked to event stress; and (c) avoidant coping and event stress would both be linked to aggregated daily depressive symptoms. If these hypotheses are empirically borne out, the findings will suggest that treatments for depression should be augmented with techniques aimed specifically at these mechanisms of change to more effectively alleviate depressive symptoms in individuals with higher levels of SC.

Method

Participants

The research protocol and consent forms were approved by the Ethics Committees of the Sir Mortimer B. Davis Jewish General Hospital, McGill University Health Centre, and McGill University. The participants in this study were outpatient adults (between the ages of 18-65) with

a primary diagnosis of current unipolar major depression, who were referred for treatment at one of two major teaching hospital settings in Montreal, the Institute of Community and Family Psychiatry at the Jewish General Hospital (ICFP-JGH) or the McGill University Health Centre, Royal Victoria Hospital site (MUHC-RVH). Participants recruited from the ICFP-JGH consisted of referrals to the CBT service and Emergency Follow-Up (EFU) service. Participants recruited from the MUHC-RVH consisted of referrals to the MUHC CBT unit. In order to be eligible, participants did not have any changes in medications for at least 4 weeks prior to the study. All potentially eligible participants were screened over the telephone for major depression by a doctoral-level researcher-clinician, using the Inventory to Diagnose Depression (IDD; Zimmerman, Coryell, Corenthal, & Wilson, 1986). Those patients who screened positive for major depression were invited to complete a package of questionnaires at home before coming to the ICFP-JGH or MUHC-RVH for a structured diagnostic interview. Those patients who did not screen positive for major depression were placed on the waitlist to receive CBT treatment similar to other clinic patients.

All confirmed eligible participants had a primary diagnosis of current unipolar MDD according to the *Diagnostic and Statistical Manual of Mental Disorders* (4th edition; DSM-IV; American Psychiatric Association, 1994). To obtain a reliable and comprehensive set of DSM-IV Axis I diagnoses, the Structured Clinical Interview for DSM-IV, Axis I Disorders (SCID-I; First, Gibbon, Spitzer, & Williams, 1996) was administered by trained and monitored doctoral-level researcher-clinicians. The SCID-I also provided information on length of the current episode and the presence of previous episodes. Participants meeting concurrent criteria for anxiety disorders, eating disorders, or personality disorders were included in the study because excluding these disorders that are often co-morbid with MDD may result in an atypical group of patients

relative to the typical range of patients applying for treatment in the more general clinical population (see Westen et al., 2004). Exclusion criteria included a number of concurrent psychiatric disorders (bipolar or psychotic subtypes of depression, current alcohol or other substance abuse, past or present schizophrenia or schizophreniform disorder, organic brain syndrome, and mental retardation). Also excluded were participants who were in some concurrent form of psychotherapy or who needed to be hospitalized because of imminent suicide potential or psychosis.

A total of 101 patients screened positive for major depression and were invited to participate in the study. Of those 101 potential participants, 25 were no longer interested in participating, 11 were screened ineligible at the hospital visit because they did not meet study criteria for MDD, and an additional 5 participants were ineligible because they met exclusion criteria. Therefore, a total of 60 participants attended the hospital visit and met inclusion criteria to complete the study. Of those 60, 8 participants were excluded because they completed fewer than 5 daily diaries. In total, 52 participants completed the study (36 women, 16 men), of which 45 participants (31 women, 14 men) completed the study in English and 7 participants (5 women and 2 men) completed the study in French.

Participants ranged from 23 to 61 years of age with a mean age of 41 years (SD = 11). Of the 46 participants who reported their ethnicity, more than 65% (n = 34) self-identified as Canadian, European, or Caucasian. In addition, 6% (n = 3) self-identified as African, 6% (n = 3) as West Indian, 4% (n = 2) as South American, 4% (n = 2) as Middle Eastern, 2% (n = 1) as East Indian, and 2% (n = 2) as Aboriginal. All participants reported having at least a high school education with 42% (n = 22) reporting having at least a university degree. Moreover, 50% (n = 26) reported to be working at least part time with 27% (n = 14) reported being unemployed due

to illness or disability. The majority of the sample (*n* = 31) reported a family income below $50,000 a year. Axis I diagnoses were assessed using the SCID-I. Over 90% (*n* = 47) of participants met criteria for moderate to severe depression episode severity and 81% (*n* = 42) had recurrent episodes. Eighty-five percent (*n* = 44) also reported to be taking antidepressant medication. An additional 65% (*n* = 34) had at least one co-morbid Axis I disorder. Specifically, 10% (*n* = 5) of the sample met criteria for dysthymia. Fifty-eight percent (*n* =30) met criteria for a co-morbid anxiety disorder, of which 23% (*n* = 12) met criteria for panic disorder, 12% (*n* = 6) met criteria for social phobia, 20% (*n* = 10) met criteria for post-traumatic stress disorder, and 12% (*n* = 6) met criteria for generalized anxiety disorder. As well, 4% (*n* = 2) met criteria for a somatoform disorder. Borderline personality disorder was assessed using the Diagnostic Interview for DSM-IV Personality Disorders (DIPD-IV; Zanarini, Frankenburg, Sickel, & Young, 1996). All other Axis II diagnoses were obtained from participant charts. Forty-two percent (*n* = 22) of the sample met criteria for one or more personality disorders, the most prevalent being borderline personality disorder (23%, *n* = 12), obsessive-compulsive personality disorder (13%, *n* = 7), and narcissistic personality disorder (13%, *n* = 7).

Procedure

Participants who screened positive for current major depression were mailed a package containing demographic information, a consent form, and a package of questionnaires including measures of perfectionism to complete at home for 60-90 minutes the week before coming to the ICFP-JGH or MUHC-RVH (whichever site they are being treated at). During their 2-3 hour lab visit to the ICFP-JGH or MUHC-RVH, participants completed the SCID structured interview (First et al., 1996), several questions from the DIPD-IV (Zanarini et al., 1996), and several

measures of depressive symptoms. Following their hospital visit, all eligible participants completed daily diaries for seven consecutive days, which consisted of self-report questionnaires. The daily diary consisted of many of the same measures used in the Dunkley et al. (2003, 2006, 2010) diary, and was used to assess daily depressive symptoms, stress, appraisals, and coping. Participants were instructed to complete one diary at bedtime, starting that night, for the next 7 nights. To minimize misunderstandings, the research assistant explained each part of the diary to the participant. Participants were given seven stamped envelopes, each containing a diary inside and the diary day written on the address label and were asked to fill out the diary inside the envelope at bedtime and mail the envelope the next morning. Participants were encouraged to complete their diaries every evening but were advised to complete them as soon as possible the next morning if they failed to complete their diary the previous night. Participants were compensated a total of $50 for completing the study.

Measures

Depressive severity. The 21-item Beck Depression Inventory (BDI; Beck & Steer, 1987) and the interviewer-rated 17-item HAM-D (Hamilton, 1967) were used to assess initial depressive severity. The 21-item BDI (Beck & Steer, 1987) is designed to measure severity of depression in the past week. Response choices ranged from 0 to 3 with higher scores indicating greater severity of current depressive symptoms. The BDI focuses on the subjective and cognitive experience of depression and measured symptoms include negative attitudes, performance difficulty, and physiological manifestations. The BDI is widely used and has considerable support for its reliability and validity (Beck, Steer, & Garbin, 1988). Bourque and Beaudette's (1982) French translation of the BDI was administered to French-speaking

participants. Bourque and Beaudette (1982) found support for the internal consistency and validity of the French BDI that corresponded to that found for the original English-language BDI.

The 17-item HAM-D (Hamilton, 1967) was designed to measure the severity of depression in the past week. The HAM-D emphasizes the somatic and behavioural symptoms of depression and the items have either three- or five-point ratings for severity. Symptoms measured by the HAM-D include Depressed mood, Feelings of Guilt, Insomnia, Retardation, Agitation, General Somatic, Hypochondriasis, Weight Loss, and Insight. The HAM-D is a widely-used instrument and the reliability and validity have been well established (Hedlund & Vieweg, 1979). For patients completing the study in French, the HAM-D was translated into French and then back translated into English to ensure that the original meaning of each item was retained.

Perfectionism. The measures of PS and SC were obtained from the 66-item Depressive Experiences Questionnaire (DEQ; Blatt et al., 1976), the 40-item Dysfunctional Attitude Scale (DAS; Weissman & Beck, 1978), the 45-item Hewitt and Flett (1991) Multidimensional Perfectionism Scale (HMPS), the 35-item Frost et al. (1990) Multidimensional Perfectionism Scale (FMPS), and the 23-item Slaney et al. (2001) Almost Perfect Scale-Revised (APS-R). PS measures included FMPS personal standards (7 items; e.g., "If I do not set the highest standards for myself, I am likely to end up a second-rate person"), HMPS self-oriented perfectionism (15 items; e.g., "I set very high standards for myself"), and APS-R High Standards (7 items; e.g., "I have a strong need to strive for excellence"). SC measures included DEQ self-criticism (e.g., "There is a considerable difference between how I am now and how I would like to be"), FMPS concern over mistakes (9 items; e.g., "People will think less of me if I make a mistake"), HMPS

socially prescribed perfectionism (15 items; e.g., "People expect nothing less than perfection from me"), and APS-R Discrepancy (12 items; e.g., "My performance rarely measures up to my standards"). DAS perfectionism (15 items; e.g., ''If I fail at my work, then I am a failure as a person") was an additional measure of SC that was derived based on the factor analytic results of Imber et al. (1990). These scales were combined (after being transformed into *z*-scores) into SC and PS dimensions in keeping with previous factor analytic studies (e.g., Blankstein et al., 2008; Dunkley & Ma, 2010; Dunkley et al., 2003; Powers et al., 2004).

The reliability and validity of the DEQ (see Blatt, 2004; Zuroff et al., 2004), DAS (e.g., Blatt & Zuroff, 2005; Dunkley et al., 2004), FMPS (e.g., Frost et al., 1990), HMPS (e.g., Hewitt & Flett, 1991), and APS-R (e.g., Slaney et al., 2001) have been well established. French versions of the 66-item DEQ (Boucher, Cyr, & Fortin, 2006), DAS (Cottraux & Blackburn, 1995), FMPS (Rhéaume et al., 1994), HMPS (Labrecque, Stephenson, Boivin, & Marchand, 1998/1999) and APS-R (Kyparissis, Pierre, Goldsmith, & Dunkley, 2006a) were administered to participants completing the study in French. The internal consistencies and validity of the French versions of the DEQ (Boucher et al., 2006), DAS (Cottraux & Blackburn, 1995), FMPS (Bouvard et al., 2000; Labrecque et al., 1998), HMPS (Dunkley & Kyparissis, 2008; Labrecque et al., 1998), and APS-R (Dunkley, Blankstein, & Berg, 2010) have been found to be similar to the original English versions.

Depressive Symptoms. Twenty-six items from the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) and the Positive and Negative Affect Schedule-Expanded (PANAS-X; Watson & Clark, 1994) were used to measure daily depressive symptoms. Ten items were used to measure daily negative affect and positive affect. High levels of negative affect and low levels of positive affect have been thought to reflect depressive

symptoms (see Dunkley et al., 2003). Negative affect was indicated by the five content categories consisting of two adjectives each identified by Watson et al. (1988) as distressed (distressed, upset), angry (hostile, irritable), fearful (scared, afraid), guilt (guilty, ashamed), and nervousness (nervous, jittery). In addition, five items were used to assess daily sadness (sad, blue, downhearted, alone, lonely). The reliability and validity of the PANAS measures have been supported (Watson & Clark, 1994; Watson et al., 1988). A validated French translation of the PANAS (Gaudreau, Sanchez, & Blodin, 2006) was administered to French participants.

Cumulative Hassles. Cumulative hassles was measured by an abbreviated 30-item version of the Hassles Scale (DeLongis, Folkman, & Lazarus, 1988). For the present study, an abbreviated 30-item Hassles Scale was derived based on the most frequently endorsed items from the original 53-item measure in previous clinical (Dunkley, Sanislow, et al., 2006) and nonclinical (Dunkley & Kyparissis, 2008) samples. This abbreviated Hassles scale measures participants' appraisal of daily events as stressful, and is comprised of achievement-related (e.g., "meeting goals on the job") and interpersonal (e.g., "family-related obligations") hassles scales (Hewitt & Flett, 1993). Participants rated each item on how much of a hassle it was for them today on a 4-point scale ranging from 0 (*none or not applicable*) to 3 (*a great deal*). A validated French translation of the Hassles Scale (Dumont, Tarabulsy, Gagnon, Tessier, & Provost, 1998) was administered to French participants. Reliability and validity information for the English version of the Hassles Scale has been reported by DeLongis (1988), and for the French version by Dumont et al. (1998).

Negative Social Interactions. The revised 24-item Test of Negative Social Exchange (TENSE; Finch, Okun, Pool, & Ruehlman, 1999) was used to measure negative social interactions. Participants rated how often they had experienced different types of negative social

interactions today on a 10-point scale ranging from 0 (not at all) to 9 (frequently). Items on the TENSE are designed to measure anger (e.g., "lost his or her temper with me"), insensitivity (e.g., "took my feelings lightly"), and interference ("tried to get me to do something that I did not want to do"). Reliability and validity evidence for the TENSE has been reported (Finch et al., 1999; Ruehlman & Karoly, 1991). For the purpose of this study, a French translated version of the TENSE was administered to French participants (Kyparissis, Pierre, Goldsmith, & Dunkley, 2006b). Dunkley and Ma (2010) found support for the internal consistency and validity of the French TENSE that was comparable to the original English version.

Event Appraisals. Consistent with Stone and Neale's (1984) measure of daily coping, we first asked participants to provide a brief description of the most bothersome event or issue of the day. After describing the event, participants answered the following questions about the event or issue: "How unpleasant was the event or issue to you?" (1 = *not at all* to 11 = *exceptionally*), "For how long were you bothered by the event or issue?" (1 = *a very brief amount of time* to 7 = *a very large amount of time*), "How much control did you feel you had over handling the event or issue to your satisfaction?" (1 = *none* to 7 = *very much*), "To what extent did you think your handling of the event or issue would result in criticism from another significant person(s)?" (1 = *not at all* to 7 = *very much*), and "How stressful was the event or issue for you?" (1 = *not at all* to 11 = *exceptionally*). Questions 3 and 4 were used to indicate perceived control and perceived criticism, respectively. The global appraisal items (i.e., unpleasantness, duration, stressfulness) reflecting the severity of the event, the duration of the event, or both were used to assess daily event stress, consistent with Dunkley et al. (2003). For the purpose of this study, a French translated version of the event appraisal questions were administered to French participants (Kyparissis, Pierre, Goldsmith, & Dunkley, 2006c). Dunkley and Ma (2010) found support for

the internal consistency and validity of daily event stress that was comparable to the original English version.

Coping. After the appraisal section, participants rated how the event or issue was coped with using selected four-item scales from the abbreviated 28-item situational version of the COPE (Carver et al., 1989). A validated French version of the COPE (Desbiens & Fillion, 2007) was administered to the French-speaking participants completing the study in French. Consistent with the factor analytic findings of Dunkley et al. (2000, 2003), we formed two groups of coping strategies that were derived from a second-order factor analysis (Carver et al., 1989). These two groups were avoidant coping (i.e., the denial, behavioral disengagement, and mental disengagement scales of the COPE) and problem-focused coping (i.e., the Active Coping and Planning scales). The Positive Reinterpretation scale of the COPE assessed a separate coping category (Carver et al., 1989). To assess self-blame, four items were used, as in Dunkley and Ma (2010). These items were situationally framed (i.e., "I criticized myself", "I blamed myself for things that happen", "I blamed my abilities and personal qualities", "I became preoccupied with my deficiencies"). Response choices ranged from *I didn't do this at all* (1) to *I did this a lot* (4). A validated French version of the COPE (Desbiens & Fillion, 2007) was administered to French participants. The selected COPE and self-blame scales have demonstrated moderate internal consistencies (with only mental disengagement having a low coefficient alpha) and convergent and discriminant validity (Carver et al., 1989; Dunkley & Ma, 2010). Internal consistencies and validity of the French version of the selected COPE and self-blame scales have been reported and have been found to be comparable to the English version (Desbiens & Fillion, 2007; Dunkley & Ma, 2010).

Results

The results are presented in five sections. First, preliminary analysis examining the means and standard deviations of all measures are presented. Second, between- and within-person variability in the measures of stress, event appraisals, coping, and depressive symptoms are reported to assess the extent of dispositional versus situational influences. Third, intercorrelations among all measures are reported in order to examine how PS and SC differentially relate to individual differences in daily stress, appraisals, coping, and depressive symptoms. Fourth, hierarchical multiple regressions examining the incremental validity of PS and SC over and above the BDI and HAM-D in relation to hassles, negative social interactions, event stress, perceived criticism, perceived control, self-blame, avoidant coping, negative affect, sadness, and guilt are presented. Lastly, the mediational analysis examining avoidant coping and event stress as dispositional mediators of the relation between SC and depressive symptoms is reported.

Means and Standard Deviations

Table 1 reports the means, standard deviations, and alpha coefficients for all measures. For descriptive purposes, we averaged the daily diary measures of depressive symptoms, stress, appraisals, and coping across the 7 days. The means and standard deviations of the PS and SC measures, and the aggregated daily measures of stress, appraisals, coping, and depressive symptoms are comparable to those reported previously (e.g., Dunkley & Ma, 2010; Dunkley et al., 2003, 2006). The participants had a mean BDI score of 30.33 (SD = 8.56) and a mean HAM-D score of 21.12 (SD= 4.87) which indicates that the participants were severely depressed on average.

Between- and Within-Person Variability

To assess the extent to which the variability in depressive symptoms, stress, appraisals, and coping was due to between-persons and within-person influences, we used a nested analysis of variance (N-ANOVA; Winer, 1972). According to Schwartz et al.'s (1999) rule of thumb, a strong trait or individual differences influence should be reflected in approximately 50% of the variability in a stress, appraisal, or coping variable being due to between-persons influences; a strong situational influence should be reflected in approximately 10% of the variability being due to between-persons influences; and modest to moderate trait influences should be reflected in an amount of variance due to between-persons influences between these two extremes. Maximum likelihood (ML) estimation, which allows for autocorrelated within-person residuals, was used to provide a more accurate estimate of the between-persons and within-person variability (see Schwartz & Stone, 1998). Specifically, SPSS version 17.0 was used to perform the N-ANOVAs, which allowed specification of a spatial power (i.e., first-order, autoregressive) structured covariance matrix (see Schwartz et al., 1999). The 52 participants provided a total of 356 daily reports of stress, appraisals, coping, and depressive symptoms.

Table 2 presents the percentages of the variability in stress, appraisal, coping, and depressive symptoms attributable to between- and within-person influences. The results show that there were large trait influences in hassles (80%) and negative social interactions (57%). Modest to moderate individual differences or trait influences were found in the event stress indicators (18-25%), perceived criticism (26%), and perceived control (19%). Moderate trait influences were demonstrated for the coping scales (32–46%), and moderate to large trait influences were demonstrated for the depressive symptom scales (44–60%).

Intercorrelations

Zero-order correlations assessed the differential relationships among SC and PS with the aggregated daily measures of stress, appraisals, coping, and depressive symptoms. Given that this study sought to replicate previous findings in university students (Dunkley et al., 2003) and community adults (Dunkley & Ma, 2010), and clear directional hypotheses were used, a two-tailed *p* value of 0.05 was adopted for testing statistical significance. Cohen's (1992) criteria for weak (r = 0.10), moderate (r = 0.30), and strong (r = 0.50) effect sizes are used to describe the strength of zero-order correlations. Table 3 reports the intercorrelations among the PS, SC, BDI, HAM-D and aggregated daily measures. PS was significantly related to SC ($r = .73$, $p < .001$), but was weakly related to BDI and unrelated to HAM-D. In addition, PS was moderately correlated with avoidant coping ($r = .33$, $p < .05$), and the correlations between PS and hassles, negative social interactions, and self-blame approached statistical significance ($p < .10$). Partial correlations among PS and the aggregated daily measures were also conducted in order to control for the shared variance with SC. Results demonstrated that when controlling for SC, the relation between PS and avoidant coping became nonsignificant. In addition, the relation between PS and hassles, negative social interactions, and self-blame no longer approached significance once controlling for SC. In contrast to PS, SC was significantly related to BDI ($r = .44$, $p < .001$) and displayed moderate to large correlations with the aggregated daily measures of hassles, negative social interactions, event stress, perceived criticism, low perceived control, self-blame, avoidant coping, negative affect, and guilt. BDI was strongly correlated with HAM-D, negative affect, and sadness, moderately correlated with hassles, negative social interactions, event stress, and guilt, and weakly correlated with self-blame and avoidant coping. HAM-D only correlated moderately with sadness and event stress, and weakly correlated with negative affect.

Table 3 also reports the intercorrelations among the aggregated daily measures of stress, appraisals, coping, and depressive symptoms. Interestingly, depressive symptoms (negative affect, sadness, guilt) were positively related to measures of daily stress (hassles, negative social interactions, event stress) and negative coping styles (self-blame, avoidant coping). Furthermore, perceived criticism was also positively related to daily stress (hassles, negative social interactions, event stress), negative coping (self-blame, avoidant coping), and negative affect and sadness. In contrast, perceived control was negatively related to event stress, and positively related to adaptive coping (problem-focused coping, positive reinterpretation) and positive affect. Positive affect was also strongly correlated to both problem-focused coping and positive reinterpretation. The negative relation between positive affect and event stress also approached significance (r = -.24, p < .10).

Incremental Validity of PS and SC

In order to examine the incremental predictive validity of SC over and above depressive severity, a series of hierarchical multiple regression analyses were conducted. Specifically, we examined the incremental validity of SC in predicting the aggregated daily outcome measures of stress (hassles, negative social interactions), event appraisals (event stress, perceived criticism, perceived control), coping (self-blame, avoidant coping), and depressive symptoms (negative affect, sadness, guilt) by entering the BDI and HAM-D measures of depression in the first block, and SC entered in the second block. Positive reinterpretation and problem focused coping were not examined in these analyses because PS, SC, BDI, and HAM-D were unrelated to these measures. As shown in Table 4, these analyses demonstrate the predictive value of the first block as BDI and HAM-D significantly contributed between 13% and 28% of variance in predicting

hassles, negative social interactions, event stress, negative affect, sadness, and guilt. The first block also accounted for 10% of variance approaching significance ($p < .10$) in predicting avoidant coping. The first block did not significantly contribute variance in predicting perceived criticism, perceived control, and self-blame. Within this block, HAM-D did not significantly predict any of the outcome measures. However, BDI was a significant predictor of hassles ($\beta = .45$, $p < .01$), negative social interactions ($\beta = .51$, $p < .001$), negative affect ($\beta = .48$, $p < .001$), sadness ($\beta = .40$, $p < .01$), and guilt ($\beta = .32$, $p < .05$) and approached significance in predicting event stress ($\beta = .28$, $p < .10$), self-blame ($\beta = .30$, $p < .10$) and avoidant coping ($\beta = .30$, $p < .10$). BDI was not a significant predictor of perceived criticism and perceived control.

These analyses also demonstrated the incremental predictive validity of SC over and above BDI and HAM-D (see Table 4). The second block containing SC accounted for significant additional variance between 7% and 19% over and above BDI and HAM-D in predicting negative social interactions, event stress, perceived control, self-blame, avoidant coping, and guilt. The second block also approached significance ($p < .10$) in accounting for between 5% and 6% additional variance over and above BDI and HAM-D in predicting hassles, perceived criticism, and negative affect. Within this block, SC was a significant predictor over and above BDI and HAM-D of negative social interactions ($\beta = .33$, $p < .05$), event stress ($\beta = .29$, $p < .05$), perceived control ($\beta = -.46$, $p < .01$), self-blame ($\beta = .49$, $p < .001$), avoidant coping ($\beta = .45$, $p < .01$), and guilt ($\beta = .44$, $p < .01$). SC also approached significance in predicting hassles ($\beta = .25$, $p < .10$), perceived criticism ($\beta = .28$, $p < .10$), and negative affect ($\beta = .24$, $p < .10$) but did not significantly predict sadness.

Mediational Analysis

Path model testing was performed using Analysis of Momentary Structure 5.0 (AMOS version 5.0; Arbuckle, 2003). In order to test the hypothesis that daily avoidant coping and event stress mediate the relationship between SC and depressive symptoms, the Preacher and Hayes (2008) multiple mediation bootstrapping approach was used. Bootstrapping is a non-parametric approach that takes a large number of samples of the original sample size from the data. Contrary to other frequently used tests of mediation (e.g., Baron & Kenny, 1986; Sobel, 1982), this approach does not rely on the assumption that the results are normally distributed (see Preacher & Hayes, 2004 for a discussion). This bootstrapping approach is an extension of the Sobel Test (Baron & Kenny, 1986; Sobel, 1982) which compares the indirect effect of an independent variable on a dependent variable to the null hypothesis that it equals zero. It is important to note the difference between mediation and indirect effects. The key differentiating feature between an indirect and mediated effect is the association between the independent variable (self-criticism) and the dependent variable (depressive symptoms). Mediation may exist if a significant association between these two variables exists; otherwise, an indirect effects model may be considered (see Holmbeck, 1997; Preacher & Hayes, 2004).

In this particular study, the indirect effect is the product of the effect of the independent variable (SC) on the mediators (avoidant coping and event stress) and the effect of the mediators on the dependent variable (depressive symptoms). The bootstrap procedure was used to test the indirect effects from SC to depressive symptoms (see Figure 2). Depressive symptoms were assessed by computing a variable combining (after being transformed into *z*-scores) the aggregated daily variables of sadness and guilt. First, we created 1,000 bootstrap samples by random sampling and replacement of the original data set ($N = 52$). The significance tests were

based on bias-corrected 95% confidence intervals (CIs) for the size of each indirect effect derived from the bootstrapped estimates. If the values of a 95% CI for mean indirect effect do not include zero, it indicates that the specific indirect effect is significant at a $p < .05$ level. The results of the analysis indicated that the total effect and the direct effect of SC on depressive symptoms was significant at a $p < .001$ level (see Figure 2). Given that SC was significantly associated with depressive symptoms, the possibility of mediation existed. Results of the bootstrapping analysis showed that the 95% CI (0.13, 0.45) from SC to depressive symptoms supported the conclusion that the total indirect effect of SC on depressive symptoms through avoidant coping and event stress was statistically significant ($p < .001$). Because zero was not within in the confidence interval range, it was concluded that there was a significant mediation through avoidant coping and event stress (Preacher & Hayes, 2008). The 95% CI (0.07, 0.36) from SC to event stress also supported the conclusion that the indirect effect of SC on event stress through avoidant coping was statistically significant ($p < .001$). Lastly, the 95% CI (0.03, 0.25) from avoidant coping to depressive symptoms supported the conclusion that the indirect effect of avoidant coping on depressive symptoms through event stress was statistically significant ($p < .001$). Furthermore, the path from SC to depressive symptoms was non-significant in the mediation model indicating a fully mediated model.

Figure 2 presents the standardized parameter estimates of the final model explaining the relations between SC and depressive symptoms. The residual arrows denote the proportion of variance in the measured or latent variable that was unaccounted for by other variables in the model. The relation between SC and depressive symptoms was fully mediated by avoidant coping, with avoidant coping both directly related to depressive symptoms and indirectly related to depressive symptoms through event stress.

Discussion

The present study was the first to examine the role of PS and SC dimensions of perfectionism in the day-to-day lives of depressed patients in order to gain a better understanding of why self-critical individuals are difficult to treat. Currently, only about half of all depressed patients respond to any given intervention, and only about one third eventually meet criteria for remission (Hollon et al., 2002). These trends have stimulated research interest in determining whether specific patient characteristics might predict favorable versus unfavorable treatment outcomes (e.g., Blatt & Felson, 1993; Blatt & Zuroff, 2005; Blatt et al., 2010). Specifically, self-criticism/perfectionism has been found to be consistently related to higher levels of depression (e.g., Antony et al., 1998; Clara et al., 2007; Dunkley, Blankstein, Masheb, & Grilo, 2006; Enns & Cox, 1999; Sherry et al., 2003) and predicts negative treatment outcome (e.g., Blatt & Zuroff, 2005; Bulmash et al., 2009; Marshall et al., 2008; Rector et al., 2000).

A main goal of the current study was to examine to what extent trait influences in daily stress, coping, and depressive symptoms exist among clinically depressed patients. In addition, the present research built on previous research distinguishing between PS and SC dimensions of perfectionism (e.g., Dunkley, Blankstein, Masheb, & Grilo, 2006; Enns & Cox, 1999; Flett & Hewitt, 2002; Powers et al., 2004; Stoeber & Otto, 2006) by examining how PS and SC relate to whatever trait influences exist in daily stress, coping, and depressive symptoms among depressed individuals. Lastly, the current study examined the generalizability of previous models (e.g., Dunkley et al., 2000, 2003; Dunkley, Sanislow, et al. 2006) demonstrating daily stress and avoidant coping as mediators in the link between SC and depressive symptoms to a clinically depressed sample.

Similar to Dunkley et al. (2003), the present study utilized a daily diary methodology to assess the extent to which there are consistent differences among depressed individuals in daily stress, coping, and depressive symptoms. The results (see Table 1) indicated that individual differences in daily stress, coping, and depressive symptoms exist in depressed patients. Specifically, depressed individuals demonstrated moderate to large trait influences or individual differences in the depressive symptoms and stress they experience, and the way they appraise and cope with everyday stressors. This amount of between-subject variability is similar to what has been found in university students (Dunkley et al., 2003) and community adults (Dunkley & Ma, 2010). Thus, contrary to the notion that depression is a homogeneous construct, these results demonstrate the need to abandon the assumption of homogeneity among patients, and instead to consider individual differences among depressed individuals (e.g., Blatt & Felson, 1993; Blatt & Zuroff, 2005; Blatt et al., 2010).

Demonstrating individual differences in stress and coping among depressed patients is of particular importance for treatment implications. For instance, how individuals evaluate, react to, and cope with daily stressful situations are essential components of CBT for depression (see Gunthert et al., 2005). Knowing that there are substantial differences among depressed patients in the way they experience and cope with everyday stressors may aid clinicians to tailor certain aspects of the therapeutic process to different types of individuals.

The present study also demonstrated how PS and SC dimensions of perfectionism differentially relate to aggregated daily stress, appraisals of stressful events, coping, and depressive symptoms in depressed patients. Similar to previous studies, the current study aggregated situational reports across a variety of situations, thereby creating empirically derived trait measures, in order to examine the extent to which individual differences exist in daily stress

and coping styles (see Dunkley et al., 2003; Shwartz et al., 1999). Whereas PS was found to be unrelated to depressive symptoms, SC was related to negative affect, sadness, and guilt, which is consistent with previous studies (e.g., Antony et al., 1998; Dunkley & Blankstein, 2000; Dunkley, Blankstein, Masheb, & Grilo, 2006; Enns & Cox, 1999; Frost et al.,1993; Powers et al., 2004) In addition, PS was weakly or negligibly related to aggregated daily stress, self-blame, avoidant coping, and depressive symptoms. However, when controlling for the shared variance with SC, PS was no longer significantly related to any outcome measures. Therefore, these results further support the existence of two dimensions of perfectionism and help to demonstrate that PS is not in and of itself maladaptive. Interestingly, whereas previous studies among university students and community adults found PS to relate to active coping styles (e.g., Dunkley et al., 2000; Dunkley & Ma, 2010), the current study found that among depressed patients PS was unrelated to problem-focused coping and positive reinterpretation. Thus, for depressed individuals, it appears that PS does not seem to have adaptive characteristics.

In contrast to PS, SC was related to daily stress (hassles, negative social interactions), cognitive appraisals of stressful events (event stress, perceived criticism, perceived control), and negative coping styles (self-blame, avoidant coping), which is also consistent with previous studies among college students (Dunkley et al., 2000; 2003), community adults (Dunkley & Ma, 2010), and heterogeneous clinical patients (Dunkley, Sanislow et al., 2006). Further, SC was unrelated to both problem-focused coping and positive reinterpretation, which were significantly related to positive affect. Thus, not only do self-critical individuals experience daily stress, engage in avoidant coping styles, and have higher levels of depressive symptoms, they also do not exhibit adaptive coping or positive affect to offset their negative tendencies (See Dunkley et al., 2000; 2003). In sum, the current study helped to demonstrate how depressed patients'

pretreatment personality characteristics, particularly self-criticism, significantly influence individual differences in daily stress, coping, and depressive symptoms. These results also help to demonstrate the importance of examining patients' pretreatment personality characteristics in order to better understand what specific personality characteristics may facilitate or impede depressed patients' response to treatment (e.g., Blatt & Zuroff, 2005; Blatt et al., 2010).

While the current study found that depressed individuals with high SC experience daily stress, have negative appraisals of stressful events, and engage in avoidant coping, the study also examined whether the maladaptive effects of SC were really concomitants of patients' initial depressive severity (see Zuroff et al., 2004). An unexpected finding in this study was that SC was unrelated to the HAM-D score and, contrary to the BDI, HAM-D was also largely unrelated to the daily stress and coping variables. One possible explanation for these findings is that both SC and the BDI reflect negative cognitive content that might play a greater role in daily stress, appraisals, and coping than the somatic and behavioural symptoms of depression emphasized by the HAM-D. When controlling for depressive severity, SC was still found to uniquely predict aggregated daily hassles (trend), negative social interactions, event stress, perceived criticism (trend), low perceived control, self-blame, avoidant coping, negative affect (trend), and guilt. These results demonstrate that SC is a personality-based vulnerability to depression and the maladaptive effects of SC are present even when controlling for depressive severity.

Specifically, it appears that depressed individuals with higher levels of SC experience higher levels of daily stress, negative social interactions, and feelings of shame and guilt. In addition, these individuals blame themselves and condemn their abilities to handle stressful situations, expect criticism from others in dealing with stressful situations, and engage in avoidance rather than trying to actively deal with the threatening stimuli. This type of depression

is reflective of Blatt's (1974) introjective depression. While Blatt (1974) believed guilt to be an essential characteristic of introjective depression, others have recently suggested that shame, not guilt, may be central to this type of depression (e.g., Tangney & Dearing, 2002). Blatt (1974) considered introjective depression to involve feelings of worthlessness, of having failed to live up to expectations, constant self-scrutiny, and excessive demands for perfection, which describes the key elements of shame (see Tangney & Dearing, 2002). In sum, the results of the current study suggest that SC accounts for a shame-ridden type of depression characterized by increased daily stress, negative social interactions, perceived criticism, perceived lack of control, self-blame, avoidant coping, and feelings of shame.

The current study also built on previous research demonstrating avoidant coping and daily stress as mediators in the relation between SC and depressive symptoms (Dunkley et al., 2000; 2003; Dunkley, Sanislow et al., 2006; Dunn et al., 2006) by testing this mediational model in a clinically depressed population. Of particular importance, it was found that previous mediational models explaining the relation between SC and depressive symptoms in university students (Dunkley et al., 2000; 2003), university professors (Dunn et al., 2006), community adults (Dunkley & Ma, 2010), and a heterogeneous clinical sample (Dunkley, Sanislow et al., 2006) applied to a clinically depressed sample. These findings corroborated these previous models by demonstrating that avoidant coping directly mediated the relationship between SC and depressive symptoms. In addition, as in previous studies (Dunkley & Blankstein, 2000; Dunkley et al., 2000, 2003; Dunkley & Ma, 2010), these results demonstrated that avoidant coping also mediated the relationship between SC and depressive symptoms indirectly through its positive association with daily event stress. Overall, these findings suggest that the relation between SC and depressive symptoms among depressed individuals is mediated by the tendency for these

individuals to engage in avoidant kinds of coping, which, in turn, leads to depressive symptoms both directly and indirectly through increased daily stress. These results are in keeping with evidence that suggests that the tendency for self-critical individuals to engage in avoidant coping might increase the severity of the stressors that these individuals experience and thereby prolong their depressive symptoms (see Dunkley et al., 2003).

It is important to consider the treatment implications of these findings, particularly given that SC has emerged as an important cognitive-personality factor that predicts negative outcomes across psychological and pharmacological treatments of depression (Blatt & Zuroff, 2005; Marshall et al., 2008; Rector et al., 2000). The current study underscores the importance of assessing perfectionism as a multidimensional construct. That is, in the treatment for depression, clinicians may not need to address high personal standards; rather the clinician should focus on the maladaptive aspects associated with self-critical components of perfectionism. The broad implications for intervention of the present study are as follows: a) knowing that there are individual differences among depressed patients in daily stress, cognitive appraisals, and coping may aid clinicians to better understand what specific characteristics may facilitate or impede depressed patients' response to treatment; b) decreasing depressive symptoms among self-critical individuals might be achieved by reducing their tendency to engage in avoidant coping and to interpret everyday events as highly stressful; and c) increasing positive affect among self-critical individuals might be achieved by increasing their use of positive reinterpretation and problem-focused coping. The underlying premise in this intervention approach is that these cognitive and behavioural aspects of perfectionism are more malleable than the personality trait itself (see Cantor, 1990; Procidano & Smith, 1997) and, therefore, might be targeted in treatment.

Limitations

Although this study builds on previous research and incorporates significant methodological improvements, there are a few limitations which should be noted for future research. First, as the measures were completed at the end of the day, the direction of causality among variables could not be ascertained, and it is possible, for example, that depressive symptoms influenced the daily reports of stress and coping. Assessing participants' moods at the beginning of the day would be beneficial in determining the direction of causality of the relations observed in this study. In addition, because we assessed stress, appraisals, and coping only once per day, we were unable to capture the dynamics of appraisal and coping processes as they are experienced during the day (e.g., Lazarus & Folkman, 1984). Primary appraisals, which play an important role in determining whether events are labelled as stressful, are likely very rapid and require more frequent repeated measurements than are perhaps feasible with diary methodologies. Cognitive priming studies, in which individuals are exposed to experimental stimuli and their subsequent cognitive reactions are examined, would be useful to better inspect appraisals as stressful events unfold (see Ingram, Miranda, & Segal, 1998).

Second, although this study incorporated a daily diary methodology to obtain situational measures of stress, coping, and depressive symptoms and aggregated each person's responses across seven days to empirically derive trait measures, one week is of insufficient duration to demonstrate the long-term consequences of SC on depression. Thus, future research should incorporate longitudinal designs using a daily diary approach in order to examine how daily stress and coping are explanatory processes in the prospective relation between SC perfectionism and persistent depressive symptoms over time (see Blatt & Zuroff, 2005). Third, because these findings are all based on retrospective and daily self-report questionnaires, the present research

was unable to distinguish between subjective and objective aspects of stress and coping. Replication with other methods of data collection (e.g. interviews, behavioural observations) would be beneficial to further capture the objective and subjective aspects of perfectionists' stress, coping, and depressive symptoms. For example, Mongrain et al. (1998) assessed subjective and objective aspects of interpersonal behaviours of self-critical women during a conflict resolution task, and found self-critical women reported higher levels of depression and were objectively rated as less loving and more hostile. Fourth, although this study shed light on how SC is a pretreatment personality vulnerability related to depressive symptoms through daily stress and avoidant coping, how these personality characteristics impede treatment outcome was not assessed. Therefore, future research should examine how maladaptive aspects of SC (daily stress, avoidant coping) interfere with the therapeutic process and outcome. Finally, since all depressed patients in the study were recruited from two university-based teaching hospitals (JGH, MUHC-RVH) in Montreal, Quebec, future studies need to examine the generalizability of these results to depressed patients from different geographical locations and treatment settings.

Conclusion

The current study was the first to examine the role of PS and SC dimensions of perfectionism in the day-to-day lives of depressed individuals in order to highlight daily stress and avoidant coping as explanatory processes in the relation between SC and depressive symptoms. It is clear that individual differences among depressed patients exist in daily stress, cognitive appraisals, coping, and depressive symptoms. Moreover, these results further demonstrate the importance of distinguishing between PS and SC dimensions of perfectionism. In contrast to PS, SC appears to relate to a shame-ridden form of depression as reflected in

associations with daily negative social interactions, event stress, perceived criticism, lack of perceived control, self-blame, avoidant coping, and shame-related affect. Further, these findings corroborate previous research (Dunkley et al., 2000; 2003; Dunkley, Sanislow et al., 2006; Dunn et al., 2006) in suggesting that depressed individuals with high levels of SC are prone to experience depressive symptoms because they possess a number of persistent maladaptive tendencies, including high levels of daily stress and engaging in avoidant kinds of coping. These findings provide a better understanding of the key maintaining processes in the relation between SC and depressive symptoms. Overall, this study demonstrates the importance of considering individual differences in daily stress and coping among depressed patients and suggests that treatments for depression should be augmented with techniques aimed specifically at these mechanisms of change to more effectively alleviate depressive symptoms in self-critical individuals. Given the increasing global health burden for depression (e.g., Murray & Lopez, 1996), these findings are an important step toward improving mental health services and quality of life for individuals suffering from depression.

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Table 1
Means, Standard Deviations, and Internal Consistencies

Variables	*Mean*	*SD*	*α*
Personal Standards Measures			
FMPS Personal Standards	23.80	5.28	.76
HMPS Self-Oriented Pft.	75.27	16.99	.92
APS-R High Standards	38.59	7.43	.82
Self-Criticism Measures			
DEQ Self-Criticism	1.33	0.72	-[a]
DAS-Perfectionism	60.25	16.72	.88
FMPS Concern over Mistakes	30.12	8.27	.90
HMPS Socially Prescribed Pft.	64.95	17.25	.90
APS-R Discrepancy	62.53	15.15	.93
Depression Measures			
BDI	30.33	8.56	.83
HAM-D	21.11	4.87	.54
Aggregated Measures			
Hassles	26.90	14.49	.89
Negative Social Int.	33.32	33.03	.96
Event Stress	24.07	4.45	.88
Unpleasantness	8.15	1.38	-[b]
Stressfulness	7.76	1.68	-[b]
Duration	5.19	1.08	-[b]
Perceived Criticism	3.80	1.35	-[b]
Perceived Control	3.11	1.06	-[b]
Self-Blame	9.46	3.28	.92
Avoidant Coping	20.32	4.72	.76
Mental Disengagement	7.50	2.04	.57
Denial	5.21	1.46	.69
Behavioral Disengagement	7.60	2.58	.83
Problem-Focused Coping	16.05	4.50	.91
Planning	8.19	2.47	.87
Active Coping	7.85	2.22	.83
Positive Reinterpretation	7.11	2.26	.81
Negative Affect	25.19	7.61	.87
Sadness	15.09	5.28	.94
Guilt	4.75	1.99	.81
Positive Affect	18.75	5.62	.92

Note. n=52.
[a] Cronbach alphas were not computed because this variable was not scored in the conventional fashion of summing a series of items; rather, the factor scoring procedure of Blatt et al. (1976) was used. [b] Cronbach alphas were not computed because this variable was only a one-item measure.

Table 2

Percentages of Between- and Within-Person Variability in the Daily Measures of Stress, Appraisals, Coping, and Depressive Symptoms.

	% variance	
Measure	Between-persons	Within-persons
Hassles	79.7	20.3
Negative Social Interactions	57.1	42.9
Event Stress	25.2	74.8
Unpleasantness	18.2	81.8
Stressfulness	30.9	69.1
Duration	18.2	81.8
Perceived Criticism	25.9	74.1
Perceived Control	19.4	80.6
Self-Blame	45.1	54.9
Avoidant Coping	46.0	54.0
Mental Disengagement	40.0	60.0
Denial	41.7	58.3
Behavioral Disengagement	42.8	57.2
Problem Focused Coping	39.1	60.9
Planning	41.6	58.4
Active Coping	31.9	68.1
Positive Reinterpretation	41.9	58.1
Negative Affect	56.4	43.6
Sadness	60.0	40.0
Guilt	52.1	47.9
Positive Affect	43.9	56.1

Note. n=52

Table 3

Zero-Order Correlations of Personal Standards, Self-Criticism, BDI, and HAM-D with Aggregated Daily Measures of Stress, Appraisals, Coping, and Depressive Symptoms

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Personal Standards	--																
2. Self-Criticism	.73***	--															
3. BDI	.27[a]	.44***	--														
4. HAM-D	.02	.14	.53***	--													
5. Hassles	.26[a]	.39**	.44***	.21	--												
6. Negative Social Int.	.26[a]	.46***	.42**	.10	.66***	--											
7. Event Stress	.22	.37**	.36**	.31*	.52***	.49***	--										
8. Perceived Criticism	.09	.31*	.18	.06	.36**	.58***	.36**	--									
9. Perceived Control	-.18	-.35*	-.02	-.16	-.12	-.05	-.42**	-.21	--								
10. Self-Blame	.23[a]	.52***	.30*	.16	.58***	.41**	.54***	.35**	-.14	--							
11. Avoidant Coping	.33*	.49***	.32*	.20	.43***	.47***	.39**	.32*	-.12	.61***	--						
12. Prob.-Focused Coping	-.03	-.09	.01	-.07	.15	.17	.10	.15	.42**	.09	-.10	--					
13. Pos. Reinterpretation	-.01	-.07	.06	.10	.05	.07	-.12	.23[a]	.38**	-.03	.04	.67***	--				
14. Negative Affect	.19	.41**	.52***	.33*	.64***	.53***	.59***	.36**	-.13	.63***	.49***	.09	.02	--			
15. Sadness	.19	.38**	.50***	.40**	.63***	.48***	.54***	.33*	-.22	.56***	.56***	.03	.04	.85***	--		
16. Guilt	.22	.50***	.35**	.23	.47***	.39**	.36**	.19	-.01	.79***	.55***	.01	.00	.73***	.61***	--	
17. Positive Affect	-.12	-.18	-.14	-.19	.00	.01	-.24[a]	.11	.38**	-.17	-.12	.53***	.69***	-.10	-.12	-.10	--

Note. $n = 52$.

Negative Social Int. = Negative Social Interactions. Prob.-Focused Coping = Problem-Focused Coping. Pos. Reinterpretation = Positive Reinterpretation.

[a] $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 4

Hierarchical Multiple Regression Analyses Examining Incremental Validity of Self-Criticism over and above Depressive Symptoms.

	Hassles		Negative Social Int.		Event Stress		Perceived Criticism		Perceived Control	
Variables	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2
Step 1		.19**		.20**		.15*		.03		.03
BDI	.45**		.51***		.28 [a]		.21		.10	
HAM-D	-.03		-.17		.16		-.06		-.22	
Step 2		.05 [a]		.09*		.07*		.06 [a]		.17**
Self-Criticism	.25 [a]		.33*		.29*		.28 [a]		-.46**	

	Self-Blame		Avoidant Coping		Negative Affect		Sadness		Guilt	
Variables	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2
Step 1		.09		.10 [a]		.28***		.27***		.13*
BDI	.30		.30 [a]		.48**		.40**		.32*	
HAM-D	.00		.04		.08		.19		.06	
Step 2		.19***		.16**		.05 [a]		.04		.16**
Self-Criticism	.49***		.45**		.24 [a]		.22		.44**	

Note. n= 52. Negative Social Int. = Negative Social Interactions

[a] $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

Figure 1. Hypothesized structural model relating SC, avoidant coping, event stress, and depressive symptoms.

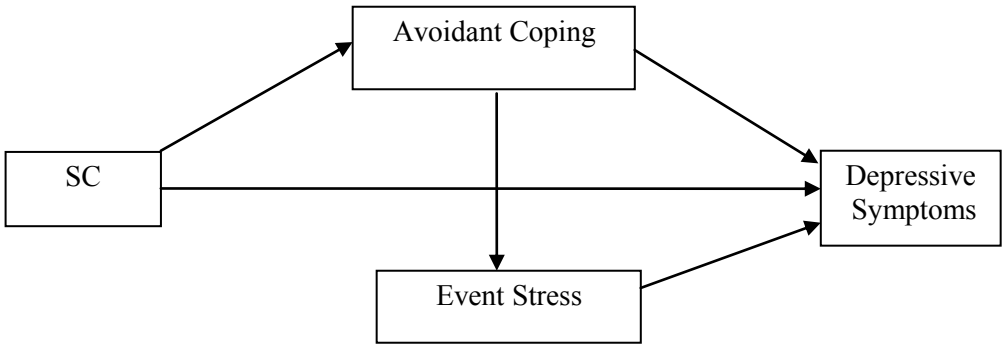

Figure 2. Standardized parameter estimates of the final structural model relating self-criticism, avoidant coping, event stress, and depressive symptoms. The residual arrows denote the proportion of variance in the measured or latent variable that was unaccounted for by other variables in the model.
Note. * $p < .05$; ** $p < .01$; *** $p < .001$