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Specificity of cognitive emotion regulation strategies: A transdiagnostic examination

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ABSTRACT

Despite growing interest in the role of regulatory processes in clinical disorders, it is not clear whether certain cognitive emotion regulation strategies play a more central role in psychopathology than others. Similarly, little is known about whether these strategies have effects transdiagnostically. We examined the relationship between four cognitive emotion regulation strategies (rumination, thought suppression, reappraisal, and problem-solving) and symptoms of three psychopathologies (depression, anxiety, and eating disorders) in an undergraduate sample (N = 252). Maladaptive strategies (rumination, suppression), compared to adaptive strategies (reappraisal, problem-solving), were more strongly associated with psychopathology and loaded more highly on a latent factor of cognitive emotion regulation. In addition, this latent factor of cognitive emotion regulation was significantly associated with symptoms of all three disorders. Overall, these results suggest that the use of maladaptive strategies might play a more central role in psychopathology than the non-use of adaptive strategies and provide support of a transdiagnostic view of cognitive emotion regulation.

Introduction

Cognitive emotion regulation strategies are cognitive responses to emotion-eliciting events that consciously or unconsciously attempt to modify the magnitude and/or type of individuals' emotional experience or the event itself (Campbell-Sills & Barlow, 2007; Harvey, Watkins, Mansell, & Shafran, 2004; Rottenberg & Gross, 2007; Thompson, 1994; Williams & Bargh, 2007). In recent years, a substantial amount of work has been devoted to delineating the relationships between dispositions to use certain strategies and a variety of disorders, including depression (Garnefski & Kraaij, 2006; Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008), mania (Feldman, Joormann, & Johnson, 2008), generalized anxiety disorder (Mennin, Holoway, Fresco, Moore, & Heimberg, 2007), post-traumatic stress disorder (Tull & Roemer, 2003), social anxiety disorder (Kashdan & Breen, 2008), and eating disorders (Nolen-Hoeksema, Stice, Wade, & Bohon, 2007; Piran & Cormier, 2005).

Overall, several cognitive emotion regulation strategies have been argued to have negative associations with psychopathology (i.e., adaptive) whereas others have been associated with the etiology and maintenance of clinical disorders (i.e., be maladaptive). Stress and coping theories (Billings & Moos, 1981; Carver, Scheier, & Weintraub, 1989; Folkman & Lazarus, 1986) and early cognitive-behavioral approaches to psychopathology (Beck, 1976; Cooper, Russell, Skinner, Frone, & Mudar, 1982; D'Zurilla, 1988; Marlatt, Baer, Donovan, & Kivlahan, 1988) suggested that reappraisal and problem-solving should be adaptive across a variety of contexts. Reappraisal involves generating benign or positive interpretations of a stressful situation as a way of reducing distress (Gross, 1998). Cognitive theories put maladaptive appraisal processes at the core of depression and anxiety (Beck, 1976; Clark, 1988; Salkovskis, 1998). More recently, Gross's (1998) influential model of emotion regulation highlights reappraisal as a strategy that results in positive emotional and physical responses to emotion-eliciting stimuli. Cognitive-behavioral therapies for depression and anxiety focus on teaching reappraisal skills (Beck, Rush, Shaw, & Emery, 1979; Clark & Wells, 1995).

Problem-solving responses are conscious attempts to change a stressful situation or contain its consequences (Billings & Moos, 1981). Problem-solving measures can include cognitions directed at solving a problem (e.g., brainstorming solutions, planning a course of action) or an orientation toward problem-solving as a way of coping with stressful circumstances. Problem-solving coping can have beneficial effects on emotions by modifying or eliminating stressors. Low problem-solving orientation or poor problem-solving skills have been associated with depression (Billings & Moos, 1981; D'Zurilla, Chang, Nottingham, & Faccinni, 1988), anxiety (Chang, Downey, & Salata, 2004; Kant, D'Zurilla, &

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Maydeu-Olivares, 1997), and eating disorders (Van Boven & Espelage, 2006). Training in problem-solving skills is a component of cognitive-behavioral therapies for all these disorders (Beck et al., 1979; Fairburn, Shafran, & Cooper, 1998; Marlatt et al., 1988).

In contrast to these adaptive strategies, suppression of distressing thoughts has long been seen as a maladaptive response to a variety of stressors and a risk factor for psychopathology (Carver et al., 1989; Folkman & Lazarus, 1980). Wenzlaff and Wegner (2000) have produced a large body of research showing that attempts to voluntarily suppress unwanted thoughts result in an increased accessibility of the suppressed thought (Wegner & Erber, 1992; Wegner, Schneider, Carter, & White, 1987). More germane to emotion regulation, suppression of emotional thoughts has been shown to produce increases in sympathetic activation (Wegner, Broome, & Blumberg, 1997; Wegner & Gold, 1995), and self-reported anxiety (Roemer & Borkovec, 1994), anxiety and depression (Borton, Markowitz, & Dieterich, 2005), and discomfort (Purdon & Clark, 2001). Wegner et al. have also suggested that chronic suppression of emotionally evocative thoughts might prevent habituation to emotional stimuli, and as such result in hypersensitivity to depression and anxiety-related thoughts and symptoms (Wegner & Zanakos, 1994; Wenzlaff & Wegner, 2000). Indeed, thought suppression has been associated with increased risk for depression and anxiety in several studies (Purdon, 1999; Wenzlaff & Wegner, 2000). Similarly, emotion regulation models of eating disorders suggest that suppression of concerns leads to binge eating and then maladaptive compensatory behaviors (e.g., Heatherton & Baumeister, 1991; McCarthy, 1990; Polivy & Herman, 2002). In addition, thought suppression has been associated with the frequency with which individuals with borderline personality disorders engage in self-harm as an emotion regulation mechanism (Chapman, Specht, & Cellucci, 2005).

Another maladaptive strategy is rumination, the tendency to repetitively focus on the experience of negative emotion and its causes and consequences (Nolen-Hoeksema et al., 2008; Trapnell & Campbell, 1999; Watkins, 2008). Although individuals report that they engage in rumination to understand the sources of their distress (Papageorgiou & Wells, 2003), experimental studies have shown that rumination increases negative mood-congruent thinking, interferes with problem-solving and instrumental behavior, and drives away social support (for a review see Lyubomirsky & Tkach, 2004). In turn, rumination prospectively predicts symptoms and diagnoses of anxiety and depression (see Nolen-Hoeksema et al., 2008). Some people who ruminate may turn to binge eating to escape their aversive self-awareness (Heatherton & Baumeister, 1991), leading to symptoms and diagnoses of eating disorders (Nolen-Hoeksema et al., 2007).

Thus, two cognitive emotion regulation strategies that have been widely theorized to be protective against psychopathology are reappraisal and problem-solving. Two strategies that have consistently been argued to be associated with development and maintenance of psychopathology are thought suppression and rumination. However, it is not clear whether strategies vary in the strength of their association to psychopathology.

In a recent meta analysis (Aldao, Nolen-Hoeksema, & Schweizer, 2010), we examined the relationships between self-reports of these four cognitive emotion regulation strategies and symptoms of four types of psychopathology: depression, anxiety, eating disorders, and substance use.[2] When we collapsed all the symptom types together, we found mixed evidence for specificity in the relationship between emotion regulation strategies and psychopathology: although we found that all four strategies were significantly associated with psychopathology, the maladaptive strategies of rumination and suppression were more strongly associated with symptoms than the adaptive strategies of reappraisal and problem-solving. Delineating which strategies have stronger associations with psychopathology can help us identify the ones that play a more central role in the development, maintenance, and remission of various disorders. This has implications for prevention programs that focus on the development of cognitive emotion regulation skills (e.g., Brackett & Katulak, 2006) as well as treatments that focus on teaching regulatory skills (Beck, 1976; Fairburn et al., 1998; Fairholme, Boisseau, Ellard, Ehrenreich, & Barlow, 2010; Hayes, Strosahl, & Wilson, 1999; Roemer, Orsillo, & Salters-Pedneault, 2008). Specifically, if we can identify what strategies are more protective against, or stronger risk factors for, psychopathology, we can ensure that these strategies are targeted in prevention and intervention programs.

Another important question regarding the relationship between cognitive regulatory strategies and psychopathology involves whether these strategies are more strongly related to certain disorders than to others. Leading theorists have argued that difficulties using cognitive emotion regulation strategies, including in rumination, thought suppression, reappraisal, and problem-solving, may be critical transdiagnostic factors underlying several forms of psychopathology (Ehring & Watkins, 2008; Fairburn, Cooper, & Shafran, 2003; Gross & John, 2003; Harvey et al., 2004; Kring & Sloan, 2010; Mansell, Harvey, Watkins, & Shafran, 2009; Moses & Barlow, 2006; Purdon, 1999; Rassin, Merckelbach, & Muris, 2000). Unfortunately, most studies on cognitive emotion regulation have been disorder-specific, limiting tests of transdiagnostic models. Identifying cognitive emotion regulation strategies that have transdiagnostic effects can inform the development of interventions targeting these strategies, thereby having preventative and treatment effects across a range of disorders.

In our meta analysis, we found that the relationships between emotion regulation strategies were stronger for depression and anxiety than for eating and substance use disorders. These results suggest that, not surprisingly, mood and anxiety disorders might be more closely related to certain problems in cognitive emotion regulation than disorders in which mood disturbances are not as central (see Garnefski, Kraaij, & van Etten, 2005) and that eating disorders are more consistently related to cognitive emotion regulation strategies than substance use.

Our meta analysis provided important clues as to the relative strength of different cognitive emotion regulation strategies in predicting psychopathology, and which types of psychopathology these strategies were most related to. There are significant limitations of the meta-analytic approach, however. Given the nature of a meta-analytic review, we could only examine the relationships between individual strategies and disorders independently of one another, and thus could not simultaneously model the relationships among all strategies and disorders (see Rosenthal & DiMatteo, 2001). This is problematic for several reasons. First, we could not test whether the any lack of specificity found in the relationship between strategies and psychopathology could be attributed to shared variance among the strategies. In other words, we could not test whether each strategy would still show significant associations with psychopathology when examined in models that included other strategies. Additionally, we could not examine whether the strategies would intercorrelate and potentially load onto latent

[2] We actually examined two additional emotion regulation strategies in the meta analysis, namely avoidance and acceptance. Avoidance had a very similar pattern of relationships to psychopathology as suppression, and indeed there appears to be considerable conceptual and measurement overlap between the two constructs (Ottenbreit & Dobson, 2004). Thus, we did not include measures of avoidance in this study. Acceptance was not significantly associated with psychopathology across studies in the meta analysis; measures of this construct were not included in this study.