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## Cognitive emotion regulation strategies: Gender differences and associations to worry

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### ABSTRACT

Research generally supports differences in the prevalence of GAD and reports of excessive worry between men and women. Psychosocial theories espouse individual vulnerability factors as correlates of anxiety and in turn related to gender differences. Emotion regulation is one vulnerability factor that has shown involvement in the development, exacerbation, and/or maintenance of anxiety, although there is insufficient evidence of this direct contribution to observed gender differences in anxiety. Using a sample of 1080 young adults, the current study examines the differential use of cognitive emotion regulation strategies between males and females and the subsequent effect on worry. Results of the present study provide tentative support for differential cognitive emotion regulation strategies between gender as a vulnerability to increased worry and potentially GAD. Specifically, males and females significantly differed in the endorsement of use of rumination, putting problems into perspective and blaming others as cognitive emotion regulation strategies.

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### 1. Introduction

The extant literature on the gender distribution of the prevalence of anxiety disorders suggests that baserates for specific disorders are higher for women than men. Specifically, the baserate of Generalized Anxiety Disorder (GAD) in females is approximately twice the reported baserate of the disorder in men (Wittchen, Zhao, Kessler, & Eaton, 1994). Biological theories suggest that certain biological or genetic characteristics unique to women, such as hormones, are key in the development of anxiety symptomatology (Seeman, 1997). In contrast, psychosocial theories espouse individual vulnerability factors as correlates of anxiety and in turn related to gender differences (Lewinsohn, Gotlib, Lewinsohn, Seeley, & Allen, 1998). Vulnerability factors such as cognitive processes (Beck, Emery, & Greenberg, 2005; Riskind, 1997), personality (Brandes & Bienvenu, 2006; Clark, Watson, & Mineka, 1994), and emotion regulation (Amstadter, 2008; Martin & Dahlen, 2005) have been shown to be involved in the development, exacerbation, and/or maintenance of anxiety, although there is insufficient evidence of this direct contribution to observed gender differences in anxiety (Garnefski, Teerds, Kraaij, Legerstee, & van den Kommer, 2004).

Emotional regulation is conceptualized as a broad construct encompassing a number of regulatory processes, including the regulation of the experience of emotion as well as the regulation of the underlying features of emotion such as physiological reactivity, so-

cial, behavioral, and cognitive processes (Garnefski, Kraaij, & Spinhoven, 2001; Garnefski, Legerstee, Kraaij, van den Kommer, & Teerds, 2002; Thompson & Calkins, 1996). Several definitions of emotion regulation ranging from modulation of emotional intensity and arousal (e.g., Gross & Thompson, 2007) to the ability to control behavioral responses to negative emotions have been examined across the full spectrum of anxiety disorders (e.g., Amstadter, 2008; Campbell-Sills, Barlow, Brown, Hofmann, 2006) and specifically GAD (e.g., Decker, Turk, Hess, & Murray, 2008; McLaughlin, Mennin, & Farach, 2007; Mennin, Heimberg, Turk, & Fresco, 2005; Salters-Pedneault, Roemer, Tull, Rucker, & Mennin, 2006).

A subset of these emotion regulation processes include the conscious cognitive regulation processes (Garnefski et al., 2001). Cognitive emotion regulation can generally be described as the management of emotionally arousing information with conscious cognitive strategies (Thompson, 1991). Such cognitive strategies are crucial in the management of threatening or stressful events by assisting individuals to manage, regulate, and control over emotions (Garnefski et al., 2001).

Recent research has begun to examine differences between males and females on the use of specific cognitive emotion regulation strategies (Garnefski et al., 2004; Martin & Dahlen, 2005). Garnefski et al. (2004) found that males and females reported differential reliance on a number of strategies, with the most striking differences for rumination, positive refocusing, and catastrophizing. For all three of these significant differences, females reported using such strategies more often. For both males

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and females, it appears the increased use of positive reframing during stressful situations is related to decreased levels of depression whereas those who engage in rumination or catastrophizing when confronted with stressful situations reported increases in symptoms of depression. Martin and Dahlen (2005), also reported that females endorsed significantly higher levels of a number of cognitive coping strategies.

Worry is intricately linked to anxiety in general and to Generalized Anxiety Disorder (GAD) specifically. Excessive worry is the core symptom of GAD and has been shown to effectively discriminate GAD from other anxiety disorders (American Psychiatric Association, 2001). Borkovec, Davey, and Tallis (1994) describe worry as the cognitive component of anxiety, often in the form of verbal thoughts as opposed to the cognitive, behavioral, and physiological presentation of anxious symptomatology. Borkovec, Ray, and Stöber (1998) also suggest that the cognitive phenomena of worry is distinct from the physiological and behavioral manifestations of anxiety and related disorders. The relationship between gender and worry has largely been ignored in the empirical literature and the available data is often mixed. In studies in which gender differences in worry were directly examined, women reported significantly higher levels of excessive worry than their male counterparts (Dugas, Freeston, Ladouceur, 1997; Dugas, Gosselin, & Ladouceur, 2001; Lewinsohn et al., 1998; McCann, Stewin, & Short, 1991; Robichaud, Dugas, & Conway, 2003; Stavosky & Borkovec, 1988). Other research reports mixed results, suggesting no differences in worry across males and females (i.e. Brown, Antony, & Barlow, 1992; Tallis, Davey, & Bond, 1994).

Given the increased rates of GAD in women and excessive worry as the primary symptom of GAD, worry itself is an important construct for the understanding of GAD and other anxiety disorders. While these are important findings, a more salient question may be whether the differences in the use of cognitive coping strategies are differentially related to anxiety and worry in men and women. The identification of discrepancies on the use of cognitive emotion regulation strategies by males and females may provide useful information by which to understand the heightened vulnerability of women for excessive worry and GAD. The current study examines differential use of cognitive emotion regulation strategies across males and females and their subsequent effects in worry.

## 2. Method

### 2.1. Sample

Participants included 1080 young adults recruited from undergraduate psychology courses at a large southern university. The sample included 291 males (27%) and 789 females (73%) ranging from 18 to 28 years old, with a mean age of 20.07 ( $SD = 1.73$ ). The majority of the participants were Caucasian (84%). No differences between males and females were found for age, race, or marital status.

### 2.2. Procedure

Participants were part of a large study of worry in college students. All participation was conducted through internet administered questionnaires. Participants were informed of the purposes of the study and provided consent through the internet administered questionnaire.

### 2.3. Instruments

The Cognitive Emotion Regulation Questionnaire (CERQ; Garnefski et al., 2001) is a 36-item measure of cognitive coping strategies. Nine conceptually derived subscales assess cognitive

strategies for managing the intake of emotionally arousing information. The assessed strategies primarily involve thoughts which are used to manage or regulate one's emotions or mood in the face of threatening or stressful life events (Garnefski et al., 2002; Thompson, 1991). The CERQ has demonstrated acceptable internal consistency and five-month test-retest reliability (Garnefski et al., 2001). Previous research documents a strong conceptual and empirical factor structure for the CERQ (i.e. Garnefski & Kraaij, 2007; Garnefski et al., 2001). For the current administration of the CERQ, the internal consistency was acceptable with  $\alpha = .91$  for the total CERQ score and subscales ranging from  $\alpha = .75$  to  $\alpha = .86$ .

Life stressors were measured with the Life Events Questionnaire (LEQ; Norbeck, 1984), a checklist assessing the number and impact of various life events. Norbeck (1984) reported adequate internal consistency and test-retest reliability of the LEQ. Computed internal consistency for the current administration of the LEC was in the acceptable range (total events  $\alpha = .87$ ). In the present sample, males and females did not differ in the total number of events experienced, but did differ significantly in the number of life events experienced in four categories. Males reported experiencing more events related to parenting and finances, whereas females reported a greater number of events related to love/marriage and relationships.

The Depression, Anxiety, and Stress Scale (DASS; Lovibond & Lovibond, 1995a) is a 42-item self-report that assesses symptoms of depression, anxiety, and stress in adults and adolescents. The DASS has demonstrated good internal consistency and acceptable test-retest reliability (Lovibond & Lovibond, 1995a, 1995b). Only the Anxiety and Stress Scales were utilized for the current study. Internal consistency for the current administration of the DASS was excellent (DASS Anxiety  $\alpha = .93$ , DASS Stress  $\alpha = .94$ ). No difference was found between males and females on the Anxiety subscale of the DASS, whereas differences between males and females were recorded on the DASS Stress subscale ( $t(1078) = -2.26, p < .05$ ) with females ( $M = 26.49, SD = 9.26$ ) reporting significantly higher levels of physiological symptoms commonly associated with anxiety (i.e. difficulty relaxing, increased tension, irritability).

The Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borkovec, 1990) is a 16-item self-report measure of excessive and uncontrollable worry. The PSWQ possesses high internal consistency and satisfactory test-retest reliability (Molina & Borkovec, 1994). Internal consistency of the PSWQ for the current administration was excellent ( $\alpha = .93$ ). In the present sample, males and females significantly differed in worry scores [ $t(1078) = 10.13, p < .001$ ]. As expected, women ( $M = 54.87, SD = 12.18$ ) reported significantly more symptoms of excessive worry than males ( $M = 46.64, SD = 10.91$ ).

## 3. Results

### 3.1. Use of cognitive emotion regulation strategies by males and females

Table 1 presents means and standard deviations for each of the cognitive emotion regulation strategies for males and females separately. Males and females reported frequent use of the strategies of Positive Reappraisal, Refocus on Planning and Putting into Perspective. An ANCOVA was conducted to determine if multivariate differences existed between males and females in the use of cognitive emotion regulation strategies, after controlling for participant age and specific life events experienced. The results indicated that there was a significant overall difference between males and females (Wilks'  $\lambda = .944; F(9, 1029) = 6.76, p < .001$ ). Follow-up

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