



# Cognitive emotion regulation strategies in outpatients with major depressive disorder



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## ABSTRACT

The aim of this study was to examine cognitive emotion regulation strategies in adult outpatients with major depressive disorder (MDD). A clinical sample of 191 MDD outpatients and a non-clinical sample of 267 general adults were recruited. Nine cognitive emotion regulation strategies were assessed in all participants (aged 21–65 years). Results showed that MDD participants had significantly higher scores on the following strategies: self-blame, acceptance, rumination, catastrophizing, and blaming others, but lower scores on positive refocusing, refocus on planning, positive reappraisal, and putting in perspective strategies than general populations. In addition, self-blame, acceptance, and catastrophizing positively correlated and positive reappraisal negatively correlated with depressive symptoms in MDD populations. Further logistic regression analyses indicated that five strategies have significant and independent contributions to the prediction of MDD group membership (a higher reported use of self-blame, catastrophizing, and acceptance, and a lower reported use of positive refocusing, and putting in perspective). The results suggest that cognitive emotion regulation strategies may be a useful target for psychological assessment and treatment in patients with MDD.

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## 1. Introduction

Emotion regulation refers to a vast area of conscious and unconscious physiological and behavioral cognitive aspects (Gross, 2001). It is associated with human life and helps people to manage or regulate their emotions after the experience of stressful events (Garnefski et al., 2001). The 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 (Abdi et al., 2012; Gross, 2001). Although the capacity of cognitive emotion regulation is universal, large individual differences exist not only in the specific strategies by which people regulate their emotions in response to life experiences, but also exist in the extent that people develop symptoms of psychopathology in response to negative experiences (Garnefski et al., 2002a).

A number of authors have suggested that individuals' cognitive emotion regulation strategies influence the development of depression (Compass et al., 1993; Garnefski et al., 2003; Martin and Dahlen, 2005). According to this view, the symptoms of depression are viewed

as consequences of individuals' failure to modulate their emotions in an adaptive way. For example, self-blame, which refers to making internal, rather stable, and global causal attributions for the experience of negative events, is related to higher levels of depression (Anderson et al., 1994; Kubany et al., 1996; McGee et al., 2001). Ruminative thought commonly refers to the experience of repetitive thoughts in the absence of immediate environmental cueing is generally found to be related to depression (Nolen-Hoeksema et al., 1994, 1997; Nolen-Hoeksema, 2000), although certain forms of ruminative thinking may be helpful in coping with stressful life events (Janoff-Bulman, 1992; Tedeschi, 1999). Catastrophizing, which refers to thoughts of explicitly emphasizing the terror of an experience, has been found to be related to depression (Sullivan et al., 1995). The present study will focus on the relationship between multiple cognitive emotion regulation strategies and depression in order to fully understand the joint role of different cognitive emotion regulation strategies in the development of depression.

Previous research distinguished the cognitive emotion regulation strategies by nine conceptually different aspects: self-blame, acceptance, rumination, positive refocusing, refocus on planning, positive reappraisal, putting into perspective, catastrophizing, and other-blame (Garnefski et al., 2001). Self-blame, blaming others, rumination, and catastrophizing were characterized as maladaptive strategies, and acceptance, refocus on planning, positive refocusing, positive reappraisal, and putting into perspective as adaptive strategies (Garnefski

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et al., 2001). These strategies have been found to be related to depression in a general adolescent sample (Garnefski et al., 2001, 2002b; Öngen, 2010; Perte and Miclea, 2011), general adults (Martin and Dahlen, 2005; Garnefski and Kraaij, 2006, 2007; Zhu et al., 2008; Omran, 2011), and psychiatric patients (Garnefski et al., 2002a; Perte and Miclea, 2011). Studies in the general community suggest that cognitive emotion regulation strategies (e.g. self-blame, rumination) are positively, while others (e.g. positive reappraisal, putting into perspective) are negatively, associated with depression symptoms (Martin and Dahlen, 2005; Garnefski and Kraaij, 2006, 2007; Zhu et al., 2008; Omran, 2011). There is also evidence that currently depressed and recovered depressed individuals both report a more frequent use of maladaptive strategies (e.g., rumination, and catastrophizing) and a less frequent use of functional strategies (e.g., positive reappraisal) (Gross and John, 2003; Garnefski and Kraaij, 2006; Ehling et al., 2008). These findings may suggest that maladaptive use of cognitive emotion regulation strategies might contribute to the development and persistence of depression.

Major depressive disorder (MDD) is one of the most common and most debilitating of the mental disorders, with a twelve-month prevalence of 2–10% (Kessler et al., 1994; Yu et al., 2005). Knowledge about cognitive emotion regulation strategies in patients with (MDD) may provide more understanding of mechanisms underlying the pathogenesis of major depression as well clues for the advancement of current prevention and treatment approaches. Therefore, the present study comprehensively examined cognitive emotion regulation strategies in adult outpatients with MDD. More specifically, the cognitive emotion regulation strategies used in a MDD adults group was compared to a group of non-clinical adults without symptoms of depression in a cross-sectional design. This paper firstly aims to examine whether cognitive coping strategies differ between major depressive disorder patients and non-clinical subjects. On the basis of previous studies, it was expected that MDD patients would use maladaptive cognitive emotion regulation strategies (e.g., self-blame, catastrophizing and rumination) to a higher extent, and adaptive cognitive emotion regulation strategies (e.g., positive refocusing, positive reappraisal) to a lesser extent than non-clinical populations (Garnefski and Kraaij, 2006; Ehling et al., 2008). The second purpose of the current study was to examine the relationship between cognitive emotion regulation strategies and symptoms of depression separately in the MDD group and control group. It was hypothesized that relationships between maladaptive cognitive emotion regulation strategies and depressive symptoms would be significantly positive whereas adaptive cognitive emotion regulation strategies and depressive symptoms would be significantly negative in the MDD group just as in general group. The last aim was to study which of the specific cognitive emotion regulation strategies was relatively best able to distinguish between these two samples. It was assumed that together the cognitive emotion regulation strategies would account for a considerable amount of the variance.

## 2. Method

### 2.1. Sample

The subsample of clinical outpatients with major depressive disorder consisted of 191 (116 female, 75 male) adults ranging in age from 21 to 65 years ( $M=38.2$ ,  $S.D.=11.87$ ). In terms of demographics, 63.4% were married, while 33.5% were unmarried, 3.1% divorced; 90.9% were Han and 9.1% ethnic minority. Regarding education level, 5.2% had completed less than elementary education, 8.4% had completed elementary education, 31.9% had completed secondary education, 26.7% had completed vocational training, 24.1% had completed undergraduate education, and 3.7% had completed a doctoral education.

A non-clinical group of 267 adults was obtained with 136 females, ages ranging from 21 to 65 years ( $M=38.53$ ,  $S.D.=12$ ). In this group 53.6% were married, 6.8% widowed, 4.3% divorced, 2.0% separated, 32.5% unmarried. The group was 97.0% Han and 3.0% ethnic minority. The educational level included less than elementary

(4%), elementary education (9.4%), secondary education (30.5%), vocational training (26.5%), undergraduate education (25.5%), PhD education (4.1%). There were no statistically significant differences between the clinical group and non-clinical group for age, or educational level.

### 2.2. Procedure

The clinical participants with major depressive disorder were recruited from the psychological clinic at three hospitals (the Second Xiangya Hospital of Central South University in Changsha city, Third Xiangya Hospital of Central South University in Changsha city, and Fourth Huaihua People's Hospital in Huaihua city) in China between September 2008 and November 2009. Participants were assessed by a team of trained psychiatrists using the Structured Clinical Interview for Axis I DSM-IV Disorders (SCID-IV). Depression severity was evaluated using the Chinese version of the Center for Epidemiologic Studies Depression Scale (CES-D). Inclusion criteria were scores of 20 or higher on the CES-D. Participants had no history of neurological or other mental diseases. A final subsample of 191 adult patients with MDD satisfied DSM-IV criteria (American Psychiatric Association, 1994) was obtained and was administered by the CERQ-C measurement.

A general community sample was recruited by advertisement in the community in Changsha, Hunan (China) from January to December in 2009. Adults were included if they were between 21 and 65 years of age. Four hundred thirteen adults volunteered to participate in this study and (208 male and 205 female) filled out the CERQ-C and the CES-D. These questionnaires were completed under supervision of a graduate psychology student. All participants were tested individually and were guaranteed anonymity. To unambiguously define a non-clinical adult sample, adults were excluded from the general community sample when their total score on the CES-D was higher than 15. Furthermore, in order to match their level of education, the final non-clinical adult sample consisted of 267 participants.

Before the administration, all subjects gave written, informed consent. Ethics approval was sought and gained from the hospital Ethics Committee.

### 2.3. Instruments

#### 2.3.1. The Cognitive Emotion Regulation Questionnaire (CERQ)

The CERQ (Garnefski et al., 2001) was designed to measure specific cognitive emotion regulation strategies used in response to the experience of threatening or stressful life events. The CERQ is a 36-item questionnaire, consisting of nine conceptually distinct subscales: self-blame; acceptance; rumination; positive refocusing; refocus on planning; positive reappraisal; putting into perspective; catastrophizing; blaming others. Cognitive emotion regulation strategies are measured on a five-point Likert scale ranging from 1 (almost never) to 5 (almost always). Each subscale contains four items, individual subscale scores are obtained by summing the items (ranging from 4 to 20). The higher the subscale score, the more the specific cognitive strategy is used. The Chinese version of the CERQ (CERQ-C) was used in the present study. The CERQ-C has demonstrated acceptable internal consistency, one month test-retest reliability and factorial validity (Zhu et al., 2008). For the current administration of the CERQ-C, in the MDD subjects the internal consistency was acceptable with  $\alpha=0.824$  for the total CERQ score and subscales ranging from  $\alpha=0.712$  (putting into perspective) to  $\alpha=0.872$  (catastrophizing); in the non-clinical sample the alpha for the total score was 0.792 and for subscales ranged from 0.704 (self-blame) to 0.869 (positive reappraisal).

#### 2.3.2. The Center for Epidemiologic Studies Depression Scale (CES-D)

The CES-D is a 20-item inventory designed to assess symptoms of depression (Radloff, 1977). Participants were asked about how often they experienced depressive symptoms during the previous week. Each item was accompanied by a standard four-point Likert scale of potential responses (1=none, 2=one or two days a week, 3=three or four days per week, and 4=five days or more per week). Higher scores on the CES-D indicate more depressive symptoms. Radloff (1977) recommended a total the CES-D score of 16 or higher for indicating the likely presence of clinically significant depression. The Chinese version of the CES-D, which was used for the current study, has been validated and extensively used in studies of Chinese populations (Cheung and Bagley, 1998; Rankin et al., 1993). For the current administration of this scale, the Cronbach's alpha was 0.775 in the clinical depression sample and 0.682 in the non-clinical sample, which indicates acceptable internal consistency.

### 2.4. Data analysis

To study differences in cognitive emotion regulation strategies between the major depressive disordered adult sample and the general adult sample, Multivariate Analysis of Variance (MANOVA) was performed, with 'type of sample' as independent variable and the nine cognitive emotion regulation strategies as dependent variables. To study gender effects and the interaction effects between gender and type of sample, gender was also included as independent variable. Given that education might affect the type of emotion regulation strategies one

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