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A regressional analysis of maladaptive rumination, illness perception and negative emotional outcomes in Asian patients suffering from depressive disorder

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ABSTRACT

Although illness perception has been shown to be associated with illness outcomes in various chronic physical diseases, the association of illness perception and rumination are not well elucidated in mental disorders. This study aims to investigate the mediational effects of adaptive and maladaptive rumination in the relationship between illness perception and negative emotions (depression, anxiety and stress) in male and female patients ($N = 110$) suffering from depressive disorders. The results showed that maladaptive rumination mediated the relationship between illness perception and negative emotions in both male and female depressive patients. However, no mediating effects of adaptive rumination were found in the relationship between illness perception and negative emotion. Maladaptive rumination mediated the relationship between perceived identity, chronicity of illness, consequences of illness and emotional representation of illness and negative emotions in males. It also mediated the relationship between perceived identity and emotional representation of illness and negative emotions in females. The results, possible clinical implications and limitations of this study are also discussed.

1. Introduction

Illness perception is the cognitive and emotional representations (Godoy-Izquierdo et al., 2007; Petrie et al., 2007) that one has to make sense of their illness. It involves a cognitive component that can significantly impair one's ability to manage illness coping strategies and outcomes (Leventhal et al., 1992; Philip et al., 2009). Illness perception has been shown to be associated with depression in patients with physical and chronic illness (Peterson et al., 1991; Godoy-Izquierdo et al., 2007; Husain et al., 2008; Le Grande et al., 2012). However, there are limited studies examining the role of illness perception in depressive disorders (Lobban et al., 2002; Fortune et al., 2004; Philip et al., 2009). Since depression is associated with stressful and negative life events which frequently involve the impairment of multiple domains of one's daily functioning and well-being (Blazer et al., 2005), it is likely that the illness perception of a depressed individual will influence the individual's illness coping style and self-management strategies, which will in turn affect depression outcomes.

Rumination is a response coping style that is prolonged and characterized by recurrent negative thoughts and mood that one has about his illness symptoms, causes and consequences (Nolen-Hoeksema, 1991, 1998). There are many established evidence to show significant association between rumination and depression (Muris et al., 2005; Roelofs et al., 2008; de Jong-Meyer et al., 2009; Michl et al., 2013). Rumination is reliably associated with vulnerability to depressed mood, onsets of depressive episodes, longer and more severe episodes of depression, as well as various depressive symptoms such as insomnia and suicidal thoughts (Gotlib et al., 1996; Abramson et al., 2002; Morrison and O'Connor, 2008). While ruminative coping has been indicated to be maladaptive in depressive disorders in general, recent studies have suggested that depressive rumination is a multidimensional construct with both adaptive and maladaptive components (Watkins and Teasdale, 2004; Watkins et al., 2008; Di Schiena et al., 2011, 2012; Hamilton et al., 2011). Some researchers believe

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that rumination serves an adaptive function of goal progress by reducing the discrepancy between current negative health state and desired future goal in some patients (Fortune et al., 2004). This concept is based on the premise that these patients are active problem solvers who constructively ruminate about how to improve their health. The coping strategies they select are guided by their interpretation and evaluation of their illness. The outcome of these behaviours is then evaluated and fed back into their model of the illness, and/or used to shape future coping responses.

Most research however chose to focus primarily on rumination as a maladaptive process (Yoon and Joormann, 2012). Out of most forms of self-focused attention, rumination was most strongly and consistently linked to depressive symptoms (Mor and Winquist, 2002). Abramson et al. (2002) argued that cognitive vulnerabilities found in depressed individuals make it difficult for them to disengage from the self-regulatory process, thus trapping them in a cycle of ruminative thoughts instead of attaining the desired goal. The debate is still ongoing about whether rumination is an adaptive coping response or a detrimental form of emotional regulation (Nolen-Hoeksema et al., 2008).

Maladaptive rumination is characterized by negative inferential or attribution styles, dysfunctional attitudes, hopelessness, pessimism, self-criticism, low mastery, dependency, neediness, and neuroticism (Ciesla and Roberts, 2002; Flett et al., 2002; Lam et al., 2003; Lyubomirsky and Nolen-Hoeksema, 1995; Lyubomirsky et al., 1999; Nolen-Hoeksema and Jackson, 2001; Robinson and Alloy, 2003; Spasojevic and Alloy, 2001). Engaging in benign and positive distractions such as watching a movie with friends is associated with adaptive rumination coping as it diverts attention away from the negative emotions and reduces negative effect of their disorder (Nolen-Hoeksema, 1991). Women are found to be more likely to ruminate than men (Butler and Nolen-Hoeksema, 1994; Grant et al., 2004; Nolen-Hoeksema and Davis, 1999; Nolen-Hoeksema and Jackson, 2001; Roberts et al., 1998; Ziegert and Kistner, 2002), and they are more likely to develop major depressive disorders than men (Cyranowski et al., 2000). In addition, women reported higher levels of depressive moods than men (Nolen-Hoeksema, 1994). This may be because women focus more on their own emotions than men (Calmes and Roberts, 2008) and that they are more likely to use maladaptive rumination coping that prevails their negative emotions and symptoms. This leads us to our third hypothesis stated in the following paragraph.

Given the recurring and chronic nature of depression, information on illness perception would be highly useful when attempting to improve treatment efficacy, increase medication adherence, and reduce the occurrence of relapse episodes (Brown et al., 2001). In this present study, we aim to examine the relationship between illness perception, rumination and negative emotions in male and female patients with depressive disorders. Specifically, the following hypotheses will be tested: (1) the various dimensions of illness perception will have significant associations with negative emotional symptoms such as depression, anxiety and stress levels; (2) this relationship will be mediated by the patients' ruminative coping responses; and (3) the nature of this hypothesized mediational model will differ for men and women, such that maladaptive rumination emerges as a stronger mediator for women, while adaptive rumination is a stronger mediator for men.

2. Methods

2.1. Participants

110 participants were recruited from a psychiatric inpatient ward and a depression outpatient clinic at the National University Hospital of Singapore. All participants were referred to this study by their psychiatrists. Inclusion criteria were: (1) 18 years old and above; (2) diagnosed with major depressive disorder or dysthymia; and (3) ability to understand and respond to questions in either English or Mandarin. Exclusion criteria were: (1) diagnosed with other psychiatric conditions such as bipolar disorder and anxiety disorders; (2) with cognitive and/or intellectual impairment. Participants gave written informed consent for the study that was approved by the Ethics Committee of the National Healthcare Group.

2.2. Illness perception

Participants responded to the Illness Perception Questionnaire-Revised (IPQ-R) (Moss-Morris et al., 2002) specially modified for patients with depression. The questionnaire consists of eight subscales that measure illness beliefs of identity, cause, chronicity, consequences, personal and treatment controllability, illness coherence and emotional representation. Subscales are rated by participants on a 5-point Likert Scale ranging from strongly disagree to strongly agree. All subscales demonstrated relatively high internal reliability, with Cronbach's alpha ranging from 0.75 to 0.89 (Moss-Morris et al., 2002).

2.3. Adaptive and maladaptive rumination

Stress Reactive Rumination Scale (SRRS) (Robinson and Alloy, 2003) is a 25-item questionnaire that assesses an individual's ruminations in response to a stressful event in general. Participants were asked to refer the "stressful event" to their depressive episodes. Participants responded by giving a score between 0 (never) to 100 (always). Subscale scores of adaptive and maladaptive rumination were obtained by the summation of all the scores in a subscale. The total extent of rumination was obtained by the summation of all scores, with higher scores indicating frequent rumination. The internal reliability of the scale is adequate ($\alpha = 0.89$) in our study and it has a one-month test–retest reliability of 0.71 (Robinson and Alloy, 2003).

2.4. Negative emotions

Depression, Anxiety and Stress Scale- 21 (DASS- 21) measures the severity of three types of negative emotional symptoms – depression, anxiety and stress (Henry and Crawford, 2005). Participants rated how often they experienced each negative symptom on a four-point scale ranging from "never", "sometimes", "often", to "all the time". Each type of negative affect has a score between 0 and 42. A total score for negative emotions was obtained by the summation of all scores, with greater scores denoting higher levels of negative emotions. This scale has sound internal reliability ($\alpha = 0.88$) (Henry and Crawford, 2005).

2.5. Socio-demographic and clinical variables

Demographic variables including participants' gender, age, ethnicity, educational level, marital status, employment status and financial status were collected. Participants also provided information about their duration of illness, medication usage and hospitalization as a result of depression and any physical health problems that they were experiencing.

2.6. Statistical analysis

Data analysis was performed using the software package Predictive Analytics Software (PASW) Statistics version 18. Statistical significance was set at $p < 0.05$. Independent t-tests and chi-square tests were conducted to compare male and female

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