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Characteristics of stress-coping behaviors in patients with bipolar disorders ☆

Eunsoo Moon [a,b], Jae Seung Chang [c], Sungwon Choi [d], Tae Hyon Ha [c], Boseok Cha [e], Hyun Sang Cho [f], Je Min Park [a,b], Byung Dae Lee [a,b], Young Min Lee [a,b], Yoonmi Choi [a], Kyooseob Ha [c,g,h,*]

[a] Department of Psychiatry, Medical Research Institute, Pusan National University Hospital, Busan, Republic of Korea
[b] Department of Psychiatry, Pusan National University School of Medicine, Yangsan, Republic of Korea
[c] Mood Disorder Clinic and Affective Neuroscience Laboratory, Department of Psychiatry, Seoul National University Bundang Hospital, Seongnam, Republic of Korea
[d] Department of Psychology, Duksung Women's University, Seoul, Republic of Korea
[e] Department of Psychiatry, Gyeongsang National University College of Medicine, Jinju, Republic of Korea
[f] Department of Psychiatry, Yonsei University College of Medicine, Seoul, Republic of Korea
[g] Department of Psychiatry and Behavioral Science, Seoul National University College of Medicine, Institute of Human Behavioral Medicine, Medical Research Center, Seoul, Republic of Korea
[h] Department of Psychiatry, Seoul National Hospital, Seoul, Republic of Korea

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ABSTRACT

Appropriate stress-coping strategies are needed to improve the outcome in the treatment of bipolar disorders, as stressful life events may aggravate the course of the illness. The aim of this study was to compare stress-coping behaviors between bipolar patients and healthy controls. A total of 206 participants comprising 103 bipolar patients fulfilling the Diagnostic and Statistical Manual for Axis I disorder fourth edition (DSM-IV) diagnostic criteria for bipolar I and II disorders and controls matched by age and sex were included in this study. Stress-coping behaviors were assessed using a 53-item survey on a newly-designed behavioral checklist. The characteristics of stress-coping behaviors between the two groups were compared by using *t*-test and factor analysis. Social stress-coping behaviors such as 'journey', 'socializing with friends', and 'talking something over' were significantly less frequent in bipolar patients than controls. On the other hand, pleasurable-seeking behaviors such as 'smoking', 'masturbation', and 'stealing' were significantly more frequent in bipolar patients than controls. These results suggest that bipolar patients may have more maladaptive stress-coping strategies than normal controls. It is recommended to develop and apply psychosocial programs to reduce maladaptive stress-coping behaviors of bipolar patients.

1. Introduction

Stress can be closely related to bipolar disorder, as well as major depression. Stressful life events can have negative influences on onset and course of bipolar disorder. Stressful life events by social rhythm disruption were associated with manic episode in bipolar disorder (Malkoff-Schwartz et al., 2000). Goal attainment life events were associated with subsequent manic symptoms, not with depressive symptoms (Johnson et al., 2000). Negative life events predicted increase in depressive symptoms (Johnson et al., 2008). Furthermore, patients with severe negative life events recovered later than those without severe life events (Johnson and Miller, 1997). There were significant relationships between the stressful life events and the risk of relapse in bipolar disorder (Ellicott et al., 1990; Hunt et al., 1992). Therefore, stressful life events can trigger the onset of bipolar disorders and increase the risk of relapse or recurrence of mood episodes. Given previous studies, it might be important to cope with stress in order to improve the outcome in the treatment of bipolar disorder.

Coping for stress means the ability to use cognitive and behavioral strategies for reducing psychological distress and physiological reactions induced by stressful life events (Taylor

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* Corresponding author at: Mood Disorders Clinic and Affective Neuroscience Laboratory, Department of Psychiatry, Seoul National University Bundang Hospital, 82 Gumi-Ro 173-Gil, Bundang-Gu, Seongnam, Gyeonggi 463-707, Republic of Korea. Tel.: +82 31 787 7431; fax: +82 31 787 4058.
E-mail address: kyooha@snu.ac.kr (K. Ha).

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and Stanton, 2007). Maladaptive coping with stress can trigger physical and mental illness and have a negative influence on the course of illness. In general population, avoidant strategy for coping with stress was positively correlated with depression (Nagase et al., 2009). In contrast, problem-solving strategy was negatively correlated with depression (Nagase et al., 2009). Additionally, in depressive patients, several studies have similarly shown that problem-solving coping strategy can decrease the risk of depression, in contrast, emotion-focused or approach coping strategy can increase the risk of depression (Uehara et al., 1999; Taylor and Stanton, 2007). Furthermore, bipolar patients take more emotional strategy than normal control (Jung et al., 2011). Specially, bipolar patients with high anxiety level tend to take emotional strategy.

As well as cognitive strategies for coping with stress, behavioral ones can be important. Stress-coping behaviors may be not only reactions by stressful life events, but also can serve to buffer the effects of stress (Rao, 2009). An epidemiological survey on stress-coping strategies was conducted among a total of 24,551 general population of Japan (Nagase et al., 2009). In this study, behaviors such as eating, shopping, watching TV, listening to the radio, gambling, smoking, and drinking were positively associated with depression. Leisure activities and sports were negatively associated with depression. In a comparison study with 38 remitted bipolar patients and 38 healthy controls, patients spent less time working and with colleagues, and more time on passive leisure activities and alone than controls (Havermans et al., 2007). A French study with individuals having a lifetime history of mania or hypomania reported that untreated bipolar patients were less likely to have daily life routines such as being at work, in class, having social contact with work colleagues or students, and performing personal hygiene activities. In contrast, these people were more likely to be with a romantic partner (Gindre and Swendsen, 2010).

Even though behavioral strategies for coping with stress, as well as cognitive ones, might have a clinical importance, there were few systematic studies on stress-coping behaviors in bipolar disorder. Most studies reported behavioral characteristics in part. In this study, we aimed to examine stress-coping behaviors in bipolar patients, and compare these behaviors between bipolar patients and healthy controls in order to explore the characteristics of stress-coping behaviors in bipolar patients.

2. Methods

2.1. Subjects

Subjects in this study were the patients that visited the outpatient clinics in the Department of Psychiatry at Seoul National University Bundang Hospital and at Pusan National University Hospital. Bipolar patients were required to fulfill the following criteria: (1) patients who were diagnosed as bipolar I and II disorders with Diagnostic and Statistical Manual for Axis I disorder fourth edition (DSM-IV) by psychiatrist (American Psychiatric Association, 2000), (2) euthymic patients who were continuously stable in less than three Clinical Global Impression-Bipolar Version (CGI-BP) scores for at least 2 months after the improvement of acute mood episode (Spearing et al., 1997). Exclusion criteria were the following: (1) patients having mental retardation or organic mental disorder, (2) patients having serious medical illness, and (3) patients who were illiterate or visually impaired. Healthy controls matched by age and sex were selected among hospital workers, their families and friends. Healthy controls were required to fulfill the following criteria: (1) no experience of psychiatric treatment and counseling, (2) no psychiatric problems having functional impairment and distress. Finally, total 206 subjects with 103 bipolar patients who consisted of 64 bipolar I (62.1%) and 39 bipolar II (34.0%) patients, and 103 healthy controls participated in this study. All subjects gave written informed consent for participation after the aims and procedures of this study had been fully explained, as approved by the respective Institutional Review Boards at the sites.

2.2. Design and assessment

We compared stress-coping behaviors between bipolar patients and healthy controls cross-sectionally at the stabilized state after treatment of acute symptoms. Sociodemographic variables such as age, sex, education levels, marital status and job were examined. Clinical variables such as onset age, numbers of previous mood episodes were also examined. In order to compare the characteristics of stress-coping behaviors between bipolar patients and healthy controls, we newly developed a survey questionnaire containing a broad range of candidate behaviors. Each stress-coping behavior was determined based on various factors such as psychological state, temperament, and personality (Ferguson, 2001; Nagase et al., 2009; Rueda and Rothbart, 2009). Each individual tend to show some stress-coping behaviors according to his/her own characteristics. These specific patterns of stress-coping behaviors may be influenced by psychopathologies associated with bipolar disorders. Therefore, we not only compared each behavior between the two groups, but also conducted between-group comparisons on the similarity-based domains of stress-coping behaviors.

2.2.1. Assessment of stress-coping behaviors

Survey questionnaire consists of 53 behavioral items for coping stress. Each item has to be answered on the following question: “How often do you use following behaviors for coping stress?” In order to choose behavioral items, one psychiatrist intensively interviewed 20 bipolar patients and 20 healthy controls about behavioral strategies for coping stress. Behaviors examined by interviews were primarily summarized into 56 items. These items were condensed into 50 items after the discussion of clinical appropriateness by four psychiatrists and one psychologist. Three items such as stealing, gambling, use of drug and illegal substance that were not examined in the interviews, but can be important in the clinical aspects, were added into behavioral checklist. The questions were answered by 5 point Likert's scale as following: ‘No’ (0), ‘Rarely’ (1), ‘Often’ (2), ‘Frequent’ (3), and ‘Very frequent’ (4). Cronbach's alpha of all items in this survey questionnaire was 0.888 (Cronbach's alpha range: 0.883–0.891). This survey questionnaire exhibited an internal consistency with acceptable level.

2.3. Statistics

Frequencies and percentages were calculated for categorical variables, and means and standard deviations were calculated for continuous variables. In order to compare these variables between bipolar patients and healthy controls, chi-square test or Fisher's exact test was used for categorical variables, and independent *t*-test was used for continuous variables. An exploratory factor analysis was performed to determine the underlying factors of stress-coping behaviors. Principal component analysis was used to extract factors. The number of factors was determined by the examination of screen plots, the size of eigenvalues, and comprehensibility. An oblimin rotation was then made to achieve a more readily interpretable factor structure. We chose 0.35 as a cutoff for size of loading to be interpreted. We used analysis of covariance (ANCOVA) with a covariate of total scores to compare stress-coping behaviors grouped by factor analysis between bipolar patients and healthy controls. Statistical analyses were performed using the Statistical Package for Social Sciences version 18.0 (SPSS Inc., Chicago, IL, USA). In all analyses, the level of significance was set at $p < 0.05$, 2-tailed probability.

3. Results

3.1. Sociodemographic and clinical variables

Sociodemogrphic and clinical characteristics of participants in this study are shown in Table 1. Mean onset age of bipolar disorder was 33.2($\pm$10.3) years, and mean age at participating in this study was 33.2($\pm$10.2) years. Mean education levels were 13.8($\pm$2.3) years in bipolar patients, and 15.8($\pm$2.3) years in healthy controls. There was significant difference of education level between bipolar patients and healthy controls ($p < .001$). Also, there was significant difference of job between two groups ($p < .001$). Other variables had not shown the significant differences between the two groups.

3.2. Comparison of stress-coping behaviors

Bipolar patients had significantly less activities in ‘journey’ ($p < 0.001$), ‘socializing with friends’ ($p = 0.001$), ‘talking something over’ ($p = 0.006$), ‘dating’ ($p = 0.008$), ‘social club’ ($p = 0.021$), ‘going to a movie/play/concert’ ($p = 0.023$), ‘shopping at mall’

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