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The association of suicide risk with negative life events and social support according to gender in Asian patients with major depressive disorder

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ABSTRACT

We investigated the associations between negative life events, social support, depressive and hostile symptoms, and suicide risk according to gender in multinational Asian patients with major depressive disorder (MDD). A total of 547 outpatients with MDD (352 women and 195 men, mean age of 39.58 ± 13.21 years) were recruited in China, South Korea, Malaysia, Singapore, Thailand, and Taiwan. All patients were assessed with the Mini-International Neuropsychiatric Interview, the Montgomery–Asberg Depression Rating Scale, the Symptoms Checklist 90-Revised, the Multidimensional Scale of Perceived Social Support, and the List of Threatening Experiences. Negative life events, social support, depressive symptoms, and hostility were all significantly associated with suicidality in female MDD patients. However, only depressive symptoms and hostility were significantly associated with suicidality in male patients. Depression severity and hostility only partially mediated the association of negative life events and poor social support with suicidality in female patients. In contrast, hostility fully mediated the association of negative life events and poor social support with suicidality in male patients. Our results highlight the need of in-depth assessment of suicide risk for depressed female patients who report a number of negative life events and poor social supports, even if they do not show severe psychopathology.

1. Introduction

One of the most serious adverse events of depression is suicide. Suicide is complexed with psychological, social, biological, cultural, and environmental factors involved (WHO, 2010). The severity or duration of depression (Sokero et al., 2003, 2005; Holma et al., 2010), low level of social support (Sokero et al., 2003, 2005), negative life events (Oquendo et al., 2005; Chan et al., 2011), impulsivity and hostility (Perroud et al., 2011; Jeon et al., 2013b), feelings of worthlessness (Jeon et al., 2014), and permissive attitude toward suicide (Jeon et al., 2013a) have all been reported as suicide-risk factors in individuals with major depressive disorder (MDD). Interactions among these risk factors also seem to be important. For example, the impact of stressful experiences may be buffered by social support (Hays et al., 2001). In addition, the impact of negative life events and social support might well vary depending on the clinical state of the patient (Leskela et al., 2006).

Asian countries account for approximately 60% of the world's suicides (Beautrais, 2006; WHO, 2010). However, studies on suicidality in Asian cohorts of individuals are still very limited in numbers with very rare multinational cooperation (Chen et al.,

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2012). It is well known that the role of depression or other psychiatric conditions in Asian populations is less influential in the determinism of suicidality than in Western countries (WHO, 2010). According to a recent review by Chen et al. (2012), the frequency of depression or another diagnosable mental disorder among suicides in Asian countries derived from psychological autopsy studies ranged from 37% to 97%, which was lower than that in Western countries. This suggests that social factors such as negative life events and social support might have more significant role in the determinism of suicidality in Asia than the West.

A number of studies have indicated that women are more vulnerable and more likely to react with depression when exposed to stressful life events (Kessler, 1997; Maciejewski et al., 2001; Nazroo et al., 1997; Sandanger et al., 2004). Kessler (1997) has suggested that higher vulnerability to stressful life events in women might be caused by less psycho-social stress-buffering resources such as social support. In a longitudinal twin study, Kendler et al. (2005) have found that the lack of social support has increased the risk of depression in women, but not in men. Dalgard et al. (2006) have reported that, in general, women are not more vulnerable to negative life events than men. However, when there is no social support, women are more vulnerable than men when exposed to negative life events. These studies suggest that negative life events and social support may have more significant and direct effect on suicidality in women than in men. However, no such study has been performed to study the effect of gender on suicidality when exposed to negative life events.

Therefore, the objectives of this study were: (1) to examine the associations among negative life events, social support, and suicide risk according to gender in multinational Asian MDD patients; and (2) to determine whether the severity of depressive symptoms and the level of hostility could fully or partially mediate the relationships among negative life events, social support, and suicide risk in Asian MDD patients.

2. Methods

2.1. Subjects

This study used data from the Study on the Aspects of Asian Depression (SAAD) (Jeon et al., 2013b). This was a multi-country, cross-sectional, and observational study of depression in clinical settings carried out between 2008 and 2011. Thirteen study sites were established across 6 Asian countries: China (3 sites), South Korea (4 sites), Malaysia (1 site), Singapore (1 site), Taiwan (2 sites), and Thailand (2 sites). This study was approved by the Institutional Review Board or Ethics Committee of Asan Medical Center and the relevant review board of each study site.

Participants who were prospectively enrolled in the study were recruited from outpatients who sought psychiatric treatment at study sites. After the study details had been fully explained, written informed consent was obtained from each participant. The inclusion criteria were as follows: (i) age 18–65 years; (ii) a positive response ("yes") to the Mini-International Neuropsychiatric Interview (MINI) (Sheehan et al., 1998) question A1 (depressed mood) and/or A2 (loss of interest); and (iii) a diagnosis of MDD according to the DSM-IV criteria (American Psychiatric Association, 1994) that was assessed by the MINI. The exclusion criteria were as follows: (i) unstable medical condition; (ii) mood disorder due to medical conditions and/or substance abuse; (iii) psychotic or bipolar disorder; (iv) clinically significant cognitive impairment; (v) treatment with psychotropic medication within previous month; (vi) treatment with a benzodiazepine drug within previous week; and (vii) treatment with a long-acting antipsychotic medication within previous 3 months. All other psychiatric and comorbid conditions were permitted. Participants completed several self-report questionnaires in the presence of a study coordinator. A face-to-face diagnostic evaluation was then conducted with the site investigator before the participant met with their treating clinician.

2.2. Suicidality

Suicide ideation and behaviors were assessed with the MINI suicidality module (Sheehan et al., 1998). The suicidality module comprised six questions. Each item had a different score: wish for death with a score of 1, wish for self-harm with a score of 2, suicidal thought with score of 6, suicide plan with a score of 10, suicide attempt in the past month with a score of 10, and lifetime suicide attempt with a score of 4. Three questions began with 'In the past month'. Question of 'Did you think about suicide?' was used to test suicidal ideation. Question of 'Did you have a suicide plan?' was used to examine suicidal plan. Question of 'Did you attempt suicide?' was used to examine suicide attempts. Question of 'Did you ever make a suicide attempt in your lifetime?' was used to examine lifetime suicide attempt. The scores of the six questions were added together to quantify suicide risk. Total scores ranged from 0 (no current risk) to 1–5 (low), 6–9 (moderate), and 10 or more (high). Suicide risk was then coded as 0 if the total scores indicated no current risk. It was coded as 1 if the risks were low, as 2 if they were moderate, and as 3 if they were high.

2.3. Negative life events

Negative life events were assessed with the List of Threatening Experiences (LTE) questionnaire (Brugha and Cragg, 1990), a 12-item instrument to measure common life events that tend to be threatening. The 12 items were: serious illness or injury to subject, serious illness or injury to a close relative, death of a close relative, separation due to marital difficulties, broke off a steady relationship, serious problem with a close friend or relative, unemployment, subjects sacked from job, change of residence, major financial crisis, problem with police and court appearance, and something valuable lost or stolen. Respondents were asked to select life events that had occurred within 12 months prior to the onset of their depressive symptoms. Each life events was scored dichotomously (yes/no) with the exact month of the year in which it occurred. LTE was found to have high test–retest reliability (Cohen's kappa=0.96) and good agreement with informant information (Cohen's kappa=0.84).

2.4. Social support

Perceived social support was assessed with the Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet et al., 1990), a 12-item scale to measure perceived social support from family, friends, and a significant other. Respondents answer items on a 7-point Likert-type scale (options ranging from 'very strongly disagree' to 'very strongly agree'). MSPSS was found to have good internal reliability (Cronbach's coefficient alpha=0.92) and strong factorial validity, confirming the three-subscale structure of the MSPSS (factor loading of 0.74–0.85 for family subscale, 0.87–0.89 for friends subscale, and 0.72–0.88 for a significant other subscale).

2.5. Depression severity

Depression severity was assessed with the Montgomery–Asberg Depression Rating Scale (MADRS) (Montgomery and Asberg, 1979), a 10-item depression rating scale to assess core symptoms of depression. Each item was scored 0 to 6, with 0 denoting the absence of symptoms, while 6 indicating the presence of the most severe form of symptoms. MADRS was found to have high inter-rater reliability (r=0.89). It had significant correlation with the Hamilton Rating Scale (r=0.70, p=0.001).

2.6. Hostility

Hostility was assessed with the Hostility subscale of the Symptoms Checklist 90-Revised (SCL-90-R) (Derogatis, 1997). It was rated from 0 (no distress) to 4 (extreme distress). The Hostility subscale of SCL-90-R was found to have good internal reliability (Cronbach's coefficient alpha=0.84) and high test–retest reliability (r=0.78).

2.7. Statistical analysis

Differences between male and female participants were compared using t-test for continuous variables and Chi-squared test for categorical variables. Multiple regression analysis was conducted to determine the association between independent variables (depression severity, hostility, social support, and negative life events) and suicide risk (dependent variable) in female or male participants. All independent variables were concurrently entered into the model. AMOS software (version 18.0; SPSS Inc., Chicago, IL) was used for path analyses. To evaluate the direct effect of negative life events and poor social support on suicidality and their indirect effect via depression severity and hostility, we ordered the variables as follows: negative life events/social support→depression/hostility→suicidality. All statistical analyses except the path analyses were performed using SPSS (version 21.0; SPSS Inc., Chicago, IL). Statistical significance was considered when p value was less than 0.05.

3. Results

Of 2,023 outpatients who were screened for eligibility, 637

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