Predictors of suicidal thoughts: Mood instability versus neuroticism

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ABSTRACT

The personality trait neuroticism predicts depression and suicidal thoughts. Neuroticism is also linked to mood instability (MI)[1] that is common in patients with depression. This study investigated (a) whether MI predicts suicidal thoughts in depressed patients and (b) the relationship of MI to neuroticism. All 129 patients with Major Depression (MINI interview) were assessed on MI (Affective Lability Scale), neuroticism (Short Eysenck Neuroticism Scale), depression (Beck Depression Inventory), and suicidal thoughts (Beck Scale for Suicidal Ideation). Participants also completed the Perceived Stress Scale, Mood Disorder Questionnaire and five clinical questions on MI. Factor analysis of the Eysenck Neuroticism Scale revealed unstable moods as one of three main factors. Only depression severity and MI predicted suicidal thoughts once other variables including neuroticism were controlled. Mediation analyses showed that MI mediated the relationship between neuroticism and suicidal thoughts. These results suggest that MI as measured by the Affective Lability Scale typifies the type of depression that predicts suicidal thoughts and that MI may be more directly associated with suicidal thoughts than neuroticism. This demonstrates the clinical value of assessing MI rather than neuroticism in the treatment of patients with depression with suicidal thoughts.

1. Introduction

This study investigates the association between mood instability (MI) and neuroticism and how these traits relate to suicidal thoughts. To borrow an analogy from Ebner-Priemer, Eid, Kleindienst, Stabenow, and Trull (2009), think of the weather as an analogy for moods. Suppose that you go to a resort that has unpredictable rain for half the days over two weeks while your friend goes to a resort that has one week of rain and then a week of sunshine. The holiday experiences will be different for the two of you even though the amount of rainfall might have been the same. Just like reporting the average rainfall, depression is usually evaluated with interview schedules (Sheehan et al., 1998) and scales (Beck, Steer, & Garbin, 1988) that ask patients to mentally average their experience of depression over two weeks. The negative bias to depression tends to outweigh fluctuations in mood (Solhan, Trull, Jahng, & Wood, 2009), resulting in a response that is slanted towards more severe continual depression.

In contrast, studies that incorporate prospective, frequent measurements reveal that the depressive experience varies within the day or every few days (Bowen, Baetz, Hawkes, & Bowen, 2006; Trull et al., 2008). These fluctuations are described as mood instability (MI) that is defined as "extreme and frequent fluctuations of mood over time" (Trull et al., 2008). MI has been described in depression occurring alone or comorbid with other conditions including borderline personality disorder (Ebner-Priemer et al., 2009), alcohol abuse (Bowen, Block, & Baetz, 2008), anxiety (Bowen et al., 2006) or depression with mood swings (MI) (Bowen, Mahmood, Milani, & Baetz, 2011). This literature indicates that MI and depression are separate but related concepts and that current formulations of depression do not adequately account for the MI component.

Frequent, unpredictable, sudden descents in mood are distressing (Craske, Brown, Meadows, & Barlow, 1995) and are associated with suicidal thoughts in patients with depression (Trull et al., 2008). This might occur by affecting how people perceive events, their perceived control over emotions, or their event attributions (DeNeve & Cooper, 1998). MI has been found to be a significant predictor of suicidal acts in university students and in diverse groups of patients with depression, personality disorders and bipolar disorder (MacKinnon, Potash, McMahon, Simpson, & DePaulo, 2005; Sampson, Mukherjee, Ukoumunne, Mullan, & Bullock, 2004; Witte, Fitzpatrick, Joiner, & Schmidt, 2005; Yen et al., 2004). Conversely, emotional stability that has been conceptualized as the reverse of the Eysenck Neuroticism Scale is an important predictor of happiness (Eysenck & Eysenck, 1985; Hills & Argyle, 2001; Vitterso, 2001), and minor and major depression are associated with higher emotional reactivity (Bowen, Clark, &

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[1] Mood instability/variability.

Baetz, 2004; Bylsma, Taylor-Clift, & Rottenberg, 2011). These observations suggest that measures of MI may be clinically relevant in studies of depression and suicide (Trull et al., 2008).

Eysenck derived his concept of neuroticism from mathematical clustering studies but interestingly, he used the term to refer to unstable moods (Eysenck & Eysenck, 1985). Cullen in the 1700s first used the term neurosis to mean a class of diseases that could not be explained physiologically (Kendell, 1991) and Freud and his followers later used it as an explanation for symptoms related to unconscious conflicts (Makari, 2008). Neuroticism and similar traits of negative affect or emotional instability are a large first component of most common personality inventories (Costa & McRae, 1992; Trull et al., 2008). More recently the term neuroticism has been used as a superordinate organizing concept linking anxiety and depressive syndromes (Krueger, 1999).

In longitudinal studies it is clear that neuroticism predicts both depression (Caspi, Moffitt, Newman, & Silva, 1996; Quilty, Sellbom, Tackett, & Bagby, 2009) and suicidal thoughts (Brezo, Paris, & Turecki, 2006; ten Have et al., 2009). MI is less well researched than neuroticism, but is also associated with depression (Bowen et al., 2011) and suicidal thoughts (Links, Eynan, Heisel, & Nisenbaum, 2008). Neuroticism has been directly linked to MI but most relevant studies on this topic were done with student or general population samples rather than with patients (Eysenck & Eysenck, 1985; Miller, Vachon, & Lynam, 2009; Murray, Allen, & Trinder, 2002). Therefore, the question of whether MI forms an essential component of neuroticism in patients with depression has not been addressed.

In this study, we investigated the relationship between MI, neuroticism, depression and suicidal thoughts in a group of depressed patients. We postulated that MI is the essential component of neuroticism accounting for the association between neuroticism and suicidal thoughts, and that MI would predict suicidal thoughts even after controlling for neuroticism.

2. Methods

2.1. Participants

Consecutive inpatients and outpatients from two general hospital psychiatric units who complained of depression were screened using the BDI and those with a score greater than 10 were invited to participate. Following written consent, the Mini International Neuropsychiatric Interview (MINI) (Sheehan et al., 1998) was conducted and participants were provided with a package of self-report questionnaires to complete. We excluded individuals who were involuntary admissions, psychotic, neurologically impaired, unable to complete the questionnaires, or who were dependent on substances within the past 6 months to preclude confusion of withdrawal symptoms with MI.

2.2. Measures

The scales described below were used to assess depression, suicidal thoughts, MI, neuroticism, stress, and hypomania in each participant. With the exception of the five mood instability questions, these are commonly used tools.

2.2.1. Major depression diagnoses

The Mini-International Neuropsychiatric Interview (MINI) is a short structured diagnostic interview for DSM-IV and ICD-10 psychiatric disorders (Sheehan et al., 1998).

2.2.2. Depression severity

The Beck Depression Inventory (BDI) (Beck et al., 1988) is a self-report 21-item questionnaire that emphasizes cognitive rather than somatic symptoms of depression over the past 2 weeks.

2.2.3. Suicidal ideation

The Beck Scale for Suicidal Ideation (BSI) (Beck & Steer, 1991) is a 21-item self-report instrument for detecting and measuring the patients' specific attitudes, behaviors, and plans to commit suicide during the past week (suicidal thoughts).

2.2.4. Mood instability (MI)

The Affective Lability Scale-Short Form (ALS) (Oliver & Simons, 2004) is an 18-item measure of sudden mood changes between depression, high mood, anxiety, and anger. These changes are consistent with the definition of MI, and so this scale is used as the measure of MI. Scores correlate highly with those from the longer version ($r = 0.94$) and the short form has a similar relationship with other scales as the long version.

2.2.5. Neuroticism (N-EPQ (Eysenck & Eysenck, 1985))

We used the 12 items from the Neuroticism Scale of the short Eysenck Personality Questionnaire (Roberts & Kendler, 1999).

2.2.6. Perceived stress

The Perceived Stress Scale (PSS) is a 10-item version of a self-report scale for measuring the degree to which situations in one's life are viewed as stressful (Cohen, Kamarck, & Mermelstein, 1983). Stressful life events are associated with suicidal ideation (ten Have et al., 2009).

2.2.7. Hypomanic symptoms

The Mood Disorder Questionnaire (MDQ) is a sensitive screen for lifetime hypomanic and manic symptoms. We used the sum of the 13 symptom questions as a measure of severity of hypomanic symptoms (Hirschfeld et al., 2000). Hypomanic symptoms are common among people with mood disorders and are associated with suicide attempts (Merikangas et al., 2007).

2.2.8. Mood swings

Five questions were included to test the clinical relevance of the ALS and were used in the correlation analysis only. The first two were modified from a published report (Benazzi & Akiskal, 2005) and the rest were generated from patients' self-reports. The questions were rated on a visual analogue scale (VAS) and inquired about "frequent ups and downs in moods", "mood swings that occur for no reason", "other people complain about my mood swings", "having trouble following through with plans because of mood swings", and "not making commitments because moods might change".

2.3. Participant characteristics

The study sample comprised 185 participants, but only 129 of these completed the ALS that was introduced when we became aware of it. All analyses included 129 participants that completed the ALS and the other scales, except for the factor analysis of the Eysenck Neuroticism Scale that included all 185 participants. The characteristics of the 129 patients including the main diagnoses are presented in Table 1.

The distribution of the Beck Scale for Suicidal Ideation total was positively skewed with 36 participants reporting no suicidal thoughts, but the distribution for the remaining 93 participants with suicidal thoughts was approximately normal. When the analyses were repeated with only the 93 participants who reported suicidal thoughts and compared to the analyses with 129 participants no significant differences were found, so we used the larger number. The distributions of the other scales including the ALS (median = 43, std. error of skewness = .213) were approximately normal, probably because this was a fairly ill patient sample.