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Do others really know us better? Predicting migraine activity from self- and other-ratings of negative emotion

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Abstract

Objective: The validity of self-reported negative emotion to predict health status is limited by response biases, introspection limitations, and methodological confounds. The reports of significant others about the patients' negative emotion may circumvent these limitations. This study sought to compare the validity of self- versus other-reported negative emotion as a correlate of migraine headache activity. **Methods:** On 89 patients with migraine headache (74 women and 15 men), we correlated self-ratings and significant-other-ratings of patients' negative emotion with patients' report of migraine frequency and severity, which were assessed both cross-sectionally and prospectively, 3 months later. **Results:** Other-reported negative emotion correlated with migraine activity better than did self-reported negative emotion, both cross-sectionally and prospectively. Patterns were different for women and men, however. Among women, other-reported negative emotion was positively associated with migraine activity. Among men, other-reported negative emotion was inversely associated with migraine frequency and severity. **Conclusion:** The results suggest that it may be valuable to obtain significant-other-ratings when assessing negative emotion in patients and that the genders may differ in how others' ratings are related to the patients' health.

Keywords: Migraine; Headache; Pain; Negative emotion; Self-report; Other-report

Introduction

The role of negative emotions in aggravating chronic pain and other conditions is an active area of investigation [1]. Migraine headaches have long been linked with the experience of stress and negative emotions. Although early personality models of the etiology of migraine [2] are no longer viewed as tenable, current research suggests a reciprocal relationship between negative emotion and the presence, frequency, or severity of migraine headaches. For example, headache activity (e.g., frequency and severity) is positively related to negative emotional states, such as anxiety and depression [3,4], and the presence of migraine headaches is predicted by prior depression [5]. Therapies directed at reducing negative emotion, such as cognitive/behavioral therapy [6], have been found to reduce migraine headaches.

Limitations of self-reported negative emotions

Our understanding of how negative emotions are related to health is constrained by assessment limitations. One barrier found in most research studies and clinical practice is that the measurement of negative emotions, such as anxiety and depression, typically is limited to obtaining patients' own reports. Yet, the use of self-reported negative emotion as a predictor of health status has some problems.

Several methodological problems can artificially inflate the correlations observed between self-reported negative emotion and health status. Shared method variance associated

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with the use of self-report for both negative emotions and health status yields inflated correlations, and correlations between self-reports are often confounded by the broad trait of neuroticism [7]. Symptom overlap ("transdiagnostic symptoms") between the self-reported emotion measure and the health measure also may inflate observed relationships, such as when depression or anxiety measures include the symptoms of the health condition being studied [8]. Finally, the timing of assessment can bias results. For example, the correlation between emotion and headache activity measures is increased if respondents are currently experiencing head pain when they provide their reports [9].

In contrast, observed correlations can be reduced or attenuated by biases or limitations in patients' reports of their negative emotions. The model of emotional expression of Kennedy-Moore and Watson [10] describes three such limitations. First, some patients are repressors, unconsciously motivated to minimize the recognition and report of their negative affect, presumably to protect self-worth [11,12]. Second, some patients are alexithymic, confused about their emotional state and unable to label accurately their internal emotional experience [13]. Third, some patients volitionally minimize or suppress their report of negative emotions, often out of concerns about stigmatization or social desirability [14]. In addition, men and women may differ in these biases.

Other-reported negative emotion as an alternative method of measurement

Clinicians and researchers often obtain reports of collateral informants or significant others when the validity of the patients' reports is questionable. Yet, this approach typically is used with children and cognitively impaired adults, but not when the patient is viewed as a competent adult. A few studies in the field of cardiovascular disease, however, have found that reports of significant others (e.g., spouses) about patients' emotional states are better predictors of disease-relevant measures than are patients' self-reports [15,16]. Ketterer et al. [17] developed an emotion assessment instrument that instructs the patient to select a knowledgeable informant ("choose someone who knows you well") to complete the instrument with reference to the patient's emotional status. Studies using this instrument have shown that other-reports of the patient's emotional status are superior to self-reports as predictors of coronary artery disease severity [18], atypical chest pain [19], and chest pain at 5-year follow-up [20]. A recent study showed that other-reports of negative emotion correlated with age at initial diagnosis for coronary artery disease for men but not for women [21].

Goals of this study

We know of no studies comparing the validity of self- versus other-reported negative emotion as a correlate of chronic pain, generally, or migraine activity (frequency of migraines and pain severity), specifically. Therefore, we assessed patients' negative emotion via self-report, as well as via independent reports from significant others. Self- and other-ratings of negative emotion were examined both separately and simultaneously as correlates of migraine activity. In addition, we examined the relationships between these two negative emotion reports and migraine activity both cross-sectionally, as well as prospectively (over the subsequent 3 months). This approach permitted a replication test of the relationships and reduced the potential confound of simultaneously assessing negative emotion and migraine activity, which may inflate correlations artificially. Finally, we conducted exploratory analyses to test whether the self- and other-reports of male and female patients' negative emotion differed in their relationships to migraine activity.

Method

Patients

Patients in this study were new referrals to a headache clinic in a neurology department. Included patients were those diagnosed with migraine headache by a board-certified neurologist according to International Headache Society criteria [22]. Exclusion criteria for this study were cognitive impairment (e.g., dementia), illiteracy, psychosis, or participation in a clinical trial, but no patient had to be excluded for any of these reasons. Of 103 consecutive patients approached for recruitment, 3 declined to participate, and 11 provided only self-report but not other-report data; thus, they were excluded, leaving a final sample of 89 patients.

The sample included 74 women (83.1%) and 15 men (16.9%), was 88.8% Caucasian and 7.9% African American, had a mean age of 39.3 years (range=18 to 66) and a mean education of 13.9 years (i.e., approximately 2 years of college), and 75.3% were employed. Regarding marital status, 60.7% were currently married, 21.3% were never married, and 18.0% were separated, divorced, or widowed. Of the 89 patients, 65 (73.0%) were diagnosed with migraine without aura, 17 (19.1%) had migraine with aura, and 7 (7.9%) had both types of migraines. Ten patients (11.2%) also had menstrual-related migraines, and 2 (2.2%) also had hemiplegic migraines. Patients had been experiencing their current migraines for a median of 7 years.

Procedures

Patients provided written consent to the protocol, which was approved by the institutional review board, and they were enrolled in the study at their first appointment to the clinic. The measures assessing self-reported negative emotion and baseline migraine activity were sent to the patient by mail as part of the intake (baseline) procedure just prior to the first clinic visit and were brought to the clinic