

Ambiguous Pain: The Link Between Emotional Awareness and Fibromyalgia

Ray E. López^a, Aika K. Dietz^a, Ying Huang^a, Jennifer Frazee^a, Kimberly A. Barchard^a, Heather Doherty^b, David Williams^c, and Mark Lumley^b

- a. University of Nevada, Las Vegas
- b. Wayne State University
- c. University of Michigan

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Contact Information: Kimberly A. Barchard, Department of Psychology, University of Nevada, Las Vegas, 4505 S. Maryland Parkway, P.O. Box 455030, Las Vegas, NV, 89154-5030, USA, kim.barchard@unlv.edu

Abstract

We explored relationships between emotional awareness and fibromyalgia in 230 patients. Inability to distinguish emotions predicted higher pain severity. Low emotional awareness and using vague emotional descriptions was associated with fatigue. These relationships remained after controlling for age and sex, suggesting emotional awareness improvement as a target for fibromyalgia treatment.

Introduction

Fibromyalgia syndrome is primarily characterized by chronic pain throughout the body, fatigue, sleep disturbance, cognitive dysfunction, emotional disturbances, and general diminished quality of life (Lumley et al., 2017; Mease, 2008) and affects 2-4% of adults (Lumley et al., 2017). Chronic pain and the negative effects associated with fibromyalgia have been linked with other negative physical and psychological health consequences, such as heart disease, inflammation, poor immune function and depression disorders (Hawkley & Cacioppo, 2010). However, positive emotionality is an integral part of undoing these negative effects (Fredrickson & Levenson, 1998). Pain tolerance and emotional resilience diminish in times of hyperarousal (Zautra, Johnson, & Davis, 2005). Therefore, fibromyalgia sufferers can ameliorate symptoms if they develop a persistent positive affect and have the ability to recognize and combat negative emotions (Zautra, Johnson, & Davis, 2005).

Emotional awareness is the cognitive skill that allows one to accurately recognize and describe the emotions of one's self and those of others (Lane & Schwartz, 1987). The ability to identify emotions could decrease fibromyalgia symptoms and chronic sympathetic hyperarousal (Lumley et al., 1996). Indeed, emotional awareness expression therapy reduces fibromyalgia symptoms more than cognitive behavioral therapy (Lumley et al., 2017). The goal of the current study is to determine which aspects of emotional awareness are related to fibromyalgia symptoms. Understanding which aspects of emotional awareness influence fibromyalgia symptoms would allow researchers to target those areas during therapy.

Any examination of the relationship of emotional awareness to fibromyalgia must take into account sex and age. Women are more likely to have fibromyalgia (Lumley et al., 2017) and women with fibromyalgia have more severe pain than men, but less disability and shorter symptom duration (Castro-Sánchez et al., 2012). Older fibromyalgia patients report longer-lasting pain and more frequent pain, but younger patients report less ability to decrease pain and lower physical functioning and overall well-being (PeñAcoba, Velasco, Écija, Cigarán, & McKenney, 2013). This discrepancy may be due to a stigma of persistent malignance among younger patients – this stigma may reduce coping and increase distress (PeñAcoba et al., 2013). Because fibromyalgia symptoms vary with sex and age, we controlled for these variables in our study.

Method

Participants

Two hundred and thirty fibromyalgia patients (216 women, 14 men) participated in this study. Their mean age was 49.1 years, with a standard deviation of 12.2 years (range 20 – 74). Participants identified primarily as White (179 people) and Black (41 people). The participants were recruited via advertisements that were distributed to rheumatologists, fibromyalgia organizations, informational workshops, and throughout the community in general. Respondents to the fliers were screened medically and psychologically; upon confirmation of fibromyalgia status, those for whom fibromyalgia was

not their primary condition of concern were excluded. Participants completed three rounds of data collection. The data for the current paper were collected at baseline, before treatments began. These participants and procedures are described in more detail in Lumley et al. (2017).

Measures

The Levels of Emotional Awareness Scale (Lane, Quinlan, Schwartz, Walker, & Zeitlin, 1991) contains 20 items, but only 10 of these items (short form A) were administered at baseline. Each item includes an open-ended scenario involving two people: oneself and a hypothetical person (i.e. a spouse, boss, or stranger in line at the bank) (Barchard et al., 2011). These scenarios are meant to evoke emotional responses of anger, happiness, sadness, or fear (Barchard et al., 2011). Participants are required to answer two questions: “How would you feel?” and “How would the other person in the scenario feel?” (Barchard et al., 2011).

In this study, the LEAS responses were scored by hand and with Program for Open-Ended Scoring (POES; Leaf & Barchard, 2013) using Wordlist 2.5 (Barchard, 2013). Hand scores are calculated in a three-step process (Barchard et al., 2011). First, individual words and phrases are assigned scores from 0 to 3, with higher scores indicating more precise emotions. Second, Self and Other scores are calculated as the highest word-level scores for the emotions attributed to that person. However, if two non-synonymous level-3 words are given, the score is 4. Third, the Item score is calculated as the maximum of the Self and Other scores, unless both of these are 4 and describe non-identical emotional responses. In this latter case, the Item score is 5.

POES (Leaf & Barchard, 2013) was used to calculate six measures of emotional awareness. Highest-4 is a measure of overall emotional awareness and was calculated as the sum of the word scores that had the highest value for each item. The word scores were then summed across the entire set of 10 items. Highest-20 Unique is a measure of overall emotional awareness and was calculated as the sum of the word scores for the 20 words with the highest word scores across the entire set of items. Emotional Specificity is the tendency to use precise emotional words rather than vague ones and was calculated as the maximum word score of all emotional words in an item. If a response contained no emotion words, it was given a score of 0. Specificity was then summed across items. Emotional Complexity is the tendency to describe one’s emotions using a variety of emotional words and was calculated as the number of unique emotion words for each item and then summed across items. Emotional Granularity is the tendency to distinguish similar emotions; if respondents used different emotional words in different items, they obtained higher scores. It was calculated as the number of unique emotion words across all items. Finally, Emotional Verbosity is the tendency to talk at length about emotions and was calculated as the total number of words across the 10 items.

The Brief Pain Inventory (BPI; Cleeland, 2009) short form was used to assess clinical pain. Participants rated the severity of their pain at four times: their worst pain, least pain, average pain, and pain now. They also rated how much pain interfered with daily function, averaged across seven daily activities: general activity, walking, work, mood, enjoyment of life, relations with others, and sleep. Higher scores indicate higher levels of interference.

The Patient-Reported Outcomes Measurement Information System (PROMIS) Fatigue Short Form created by Cella et al., (2007) was based on the World Health Organization framework of mental, physical, and social health. The fatigue short form contains five domains; 1) Physical functioning; 2) Fatigue; 3) Pain; 4) Emotional Distress; 5) Social Role Participation. These domains each have either 4, 6, or 8 items designed to analyze one’s ability to execute daily activities (see Cella et al. [2007] for further details).

The Center for Epidemiological Studies-Depression Scale (Radloff, 1977) is a 20-item self-report scale. Items are rated as using a four-point frequency scale: rarely or none (0), some or a little (1), occasionally or a moderate amount of time (2), and most or all the time (3). The possible scores range from 0 to 60, which higher scores indicating greater depressive symptomatology.

The Generalized Anxiety Disorder Scale-7 (Spitzer, Kroenke, Williams, & Lowe, 2006) was used. Items were rated using a four-point scale: Not at all (0), Several days (1), More than half the days (2), and Nearly every day (3). These scores were then added into an aggregate score.

The Pittsburgh Sleep Quality Index (Buysse, Reynolds, Monk, Berman, & Kupfer, 1989) assesses sleep quality during the previous month and consists of 19 self-rated questions and five questions rated by the bedpartner or roommate; the latter five questions are used for clinical information only. These 19 items are then grouped into seven component scores weighed on a 0-3 scale, which is then summed to yield a global PSQI score with a range of 0-21; higher scores indicate poorer sleep quality.

The Short-Form Health Survey (Ware, Kosinski, & Keller, 1996) is a subset of 12 items from the SF-26 Health Survey, which was designed to measure physical functioning. Higher scores indicate a higher level of physical functioning.

The Satisfaction with Life Scale (Diener, Emmons, Larsen, Griffin, 1985) is a five-item scale used to measure life satisfaction as a cognitive-judgmental process. Items are scored from 1 to 7 (strongly disagree to strongly agree); thus, the range of scores is from 5 to 35. Higher scores indicate higher levels of life satisfaction.

Data Analysis

Overall emotional awareness and each of its subcomponents were correlated with the eight measures of fibromyalgia symptoms. Bivariate correlations were used to determine if any relationships existed between emotional awareness and fibromyalgia symptoms. Partial correlations were used to see if the relationships remained after controlling for sex and age.

Results

Greater pain severity was associated with lower overall emotional awareness (as measured by LEAS hand scores, Highest-20 Unique) and granularity (the ability of a respondent to distinguish between similar emotions). See Table 1. These three relationships were still statistically significant when age and sex were controlled. In addition, the partial correlations of greater pain severity with lower overall emotional awareness (as measured by Highest-4) and lower complexity were significant. See Table 2.

Greater fatigue was associated with lower overall emotional awareness (as measured by Highest-20 Unique) and specificity (the tendency to use more precise words, like happy, rather than vague ones such as, good). See Table 1. These two relationships remained statistically significant after controlling for age and sex. In addition, the partial correlation of greater fatigue with lower granularity was statistically significant. See Table 2.

The other fibromyalgia symptoms had no significant correlations with emotional awareness or its subcomponents. Interestingly, emotional verbosity had no significant relationships with any of the fibromyalgia symptoms.

Table 1

Bivariate Correlation Between Measures of LEAS and Measures of Fibromyalgia

Emotional Awareness	Pain Severity	Fatigue	Depression	GAD	Sleep Quality	Physical Functioning	Satisfaction with Life
Hand Scoring	-.15*	-.09	-.05	-.05	-.01	.06	.06
Highest-20 Unique	-.19**	-.15*	-.03	-.04	-.05	.04	.03
Highest-4	-.12	-.09	-.01	.00	.02	.06	.04
Specificity	-.09	-.14*	-.03	-.05	-.01	.02	.01
Complexity	-.12	-.09	.01	.04	.00	.04	.03
Granularity	-.15*	-.13	-.02	.00	-.04	.05	.05
Verbosity	-.06	-.04	.02	.05	.02	-.07	-.01

* $p < .05$. ** $p < .01$.

Table 2

Partial Correlation Between Measures of LEAS and Measures of Fibromyalgia

Emotional Awareness	Pain Severity	Fatigue	Depression	GAD	Sleep Quality	Physical Functioning	Satisfaction with Life
Hand Scoring	-.17*	-.11	-.08	-.09	-.03	.04	.04
Highest-20 Unique	-.21*	-.16*	-.04	-.06	-.06	.03	.03
Highest 4	-.14*	-.11	-.04	-.04	-.01	.04	.02
Specificity	-.10	-.15*	-.05	-.07	-.02	.01	.00
Complexity	-.14*	-.11	-.02	.01	-.02	.02	.01
Granularity	-.17*	-.15*	-.04	-.02	-.06	.03	.03
Verbosity	-.06	-.05	.01	.04	.01	-.07	-.02

* $p < .05$.

Discussion

Emotional awareness expression therapy reduces fibromyalgia symptoms (Lumley et al., 2017), but it is not clear which aspects of the therapy are responsible for its success. Therefore, the purpose of this research was to examine the relationship of fibromyalgia symptoms to various aspects of emotional awareness. Pain severity was associated with lower overall emotional awareness and granularity, while fatigue was associated with lower overall emotional awareness and

specificity. These relationships remained statistically significant after controlling for age and sex. In contrast, verbosity was not related to symptom expression. Symptoms are not lower in those who talk about emotions a lot. Reduced symptoms are only found among fibromyalgia patients who use the specific emotion words that provide rich descriptions of individual emotional experiences and that distinguish the emotions in one situation from the emotions in another. Interventions that target emotional specificity and granularity may further reduce the pain and fatigue in fibromyalgia patients.

Future research should determine if the relationships of emotional awareness with fibromyalgia symptoms differ across racial or ethnic groups (perhaps due to genetic variations, environmental factors, or how cultural groups experience and cope with trauma). Our research was unable to conduct separate analyses within each racial group because our sample did not include sufficient numbers of people from several groups. However, if further research shows that the relationships depend upon racial/ethnic group then treatments can be developed to target the relevant emotional awareness components for each group.

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