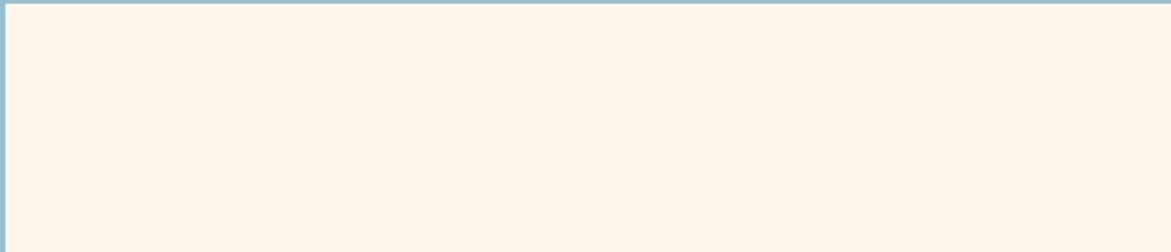
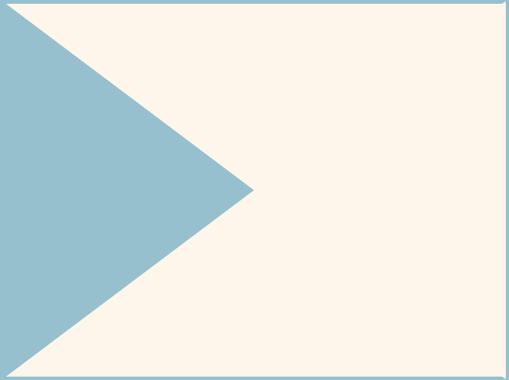


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SOPHIA L. CARLSON¹, MARIA F

1. UNIVERSITY

ABSTRACT

UNDERSTANDING THE RELATIONSHIPS BETWEEN FIBROMYALGIA AND DEPRESSION AND ANXIETY

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¹UNIVERSITY OF NEVADA, LAS VEGAS, ²WAYNE STATE UNIVERSITY

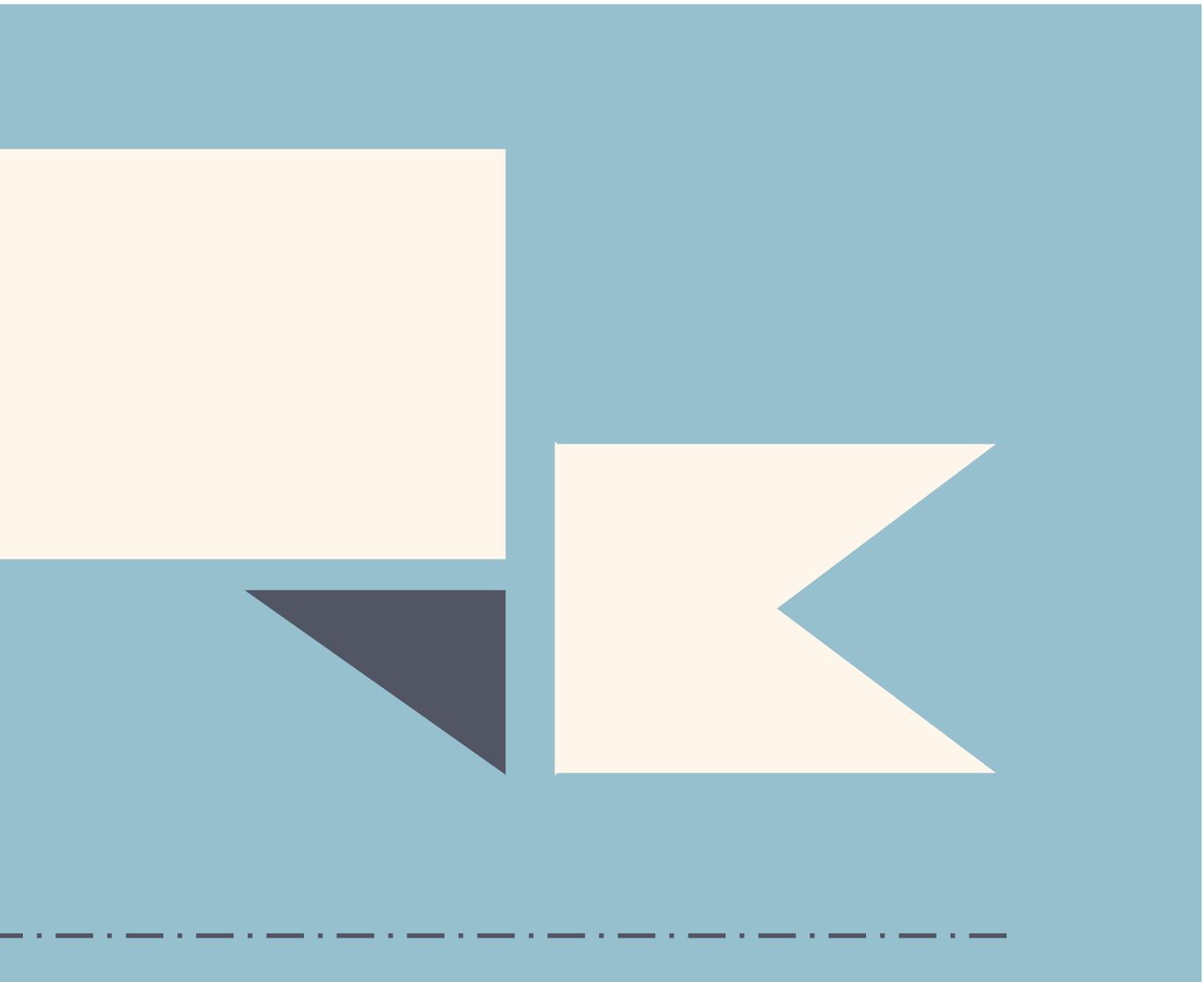
Depression Scale, the Generalized Anxiety Disorder Scale, and the Health Outcomes Measurement Information System)

AWARENESS

ARCHARD¹, HEATHER DOHERTY²,

Y OF MICHIGAN

ure studies should consider the relationship between
This dataset was collected from participants solely in t



culture and fibromyalgia symp-
the United States. Participants

Fibromyalgia is a muscular rheumatism in the United States (Weirwille, 2011). Emotional awareness (Mankus, Bock, Stand and identify one's own and others' emotions) research has shown that emotional awareness reduces fibromyalgia symptoms. The relationship between fibromyalgia symptoms and various psychological factors in fibromyalgia patients who completed a 12-week treatment (1990) and several symptom measurement components correlated negatively with emotional awareness remained after controlling for age and gender. Treatment to improve those subcomponents of emotional awareness reduced fibromyalgia pain and fatigue.

Fibromyalgia is associated with chronic pain, stiffness, fatigue, and impaired mental health (Kidwell, Harte, Clauw, & Williams, 2010). These symptoms are purely subjective with no objective findings (Crofford, 2004). Cognitive behavioral therapy is the most common treatment, but they are not always effective (2001; Lumley et al., 2017). Therefore, other treatments are needed.

Patients with fibromyalgia commonly experience emotional awareness (Mankus et al., 2017). Emotional awareness is the ability to identify and those of other people (Mankus et al., 2017). Emotional awareness is the ability to identify and those of other people (Mankus et al., 2017). Emotional awareness is the ability to identify and those of other people (Mankus et al., 2017). Emotional awareness is the ability to identify and those of other people (Mankus et al., 2017).

matism that afflicts approximately five million adults in
Patients with fibromyalgia commonly display deficits in
den, & Thompson, 2015), which is the ability to under-
others' emotions (Lane et al., 1990). Moreover, previous
l awareness and expression therapy (Lumley et al, 2011).
is study aimed to examine the relationship between f
aspects of emotional awareness. Participants were 2
ed the Levels of Emotional Awareness Scale (Lane et al
res. Global emotional awareness and several of its su
with pain severity and fatigue, and these relationships
and sex. Future research should determine if targeted
components of emotional awareness is able to reduce f

INTRODUCTION

with deep musculoskeletal pain across the body, muscle
memory and concentration (Lumley, Schubiner, Lockhart
2011). The diagnosis of fibromyalgia is difficult, as the
with no pathological signs (Goldenberg, Burckhardt, &
ral therapy and pharmacological interventions are th
y lack effectiveness for most patients (Friedberg & Jas
e, improvements in fibromyalgia treatments are need
monly display deficits in emotional awareness (Lumley
ne ability to understand and identify one's own emoti
s, Boden, & Thompson, 2015). It includes clarity of emo
identify, label, and represent their own emotions), em
represent the type of emotion they experience), and c

Health Survey physical component score, and

PROCEDURES

Patients were randomly assigned to one of three treatments: (1) business and expression therapy, cognitive behavioral therapy, (2) cognitive behavioral therapy, and (3) business and expression therapy. All patients, in groups of six, met with a therapist for eight weeks. Three assessments were conducted: (1) baseline, (2) two weeks before group assignments, (3) two weeks after the final therapy session. This current study was collected two weeks before treatments began.

DATA ANALYSIS

To determine which aspects of emotional awareness symptoms, we correlated various aspects of emotional awareness symptoms. To determine if these relationships remained significant, we then calculated partial correlations between emotional awareness symptoms, controlling for age and sex.

RESULTS

Emotional awareness was found to be negatively correlated with fatigue. The relationships between emotional awareness and fatigue remained after controlling for age and sex. See Table 1.

Table 1

Correlations of Emotional Awareness with Fibromyalgia Symptoms

	Pain Severity	Fatigue	Depression	...
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the Satisfaction with Life Scale.

three types of treatment: emotional awareness therapy, and fibromyalgia education by a therapist for weekly 90-minute sessions for 12 weeks. Data were collected during the study: (1) pretreatment two weeks before the first session, (2) two weeks after the final therapy session, and (3) six months later. The current paper used only the baseline data that were collected at the beginning of the study. See Lumley et al. (2017) for more information.

Emotional awareness are related to fibromyalgia symptoms. After controlling for age and sex, we found that higher emotional awareness and fibromyalgia symptoms

RESULTS

Emotional awareness was significantly and positively correlated with pain severity and fibromyalgia symptoms. The correlation between emotional awareness and symptoms of fibromyalgia is reported in Table 2.

Symptoms

Anxiety	Sleep Quality	Physical Functioning	Satisfaction with Life
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European cultures may be more emotionally expressive. Because of this, we predict that fibromyalgia symptoms in participants than in Asian participants. This could affect emotional awareness and fibromyalgia symptoms. Within even emotional awareness and fibromyalgia symptoms (in of range). Across cultures, the relationships may be (Finley et al. (2017) found that emotional awareness and fibromyalgia symptoms. Perhaps targeting those aspects of emotional awareness particularly related to fibromyalgia pain and fatigue (specifically) could lead to even stronger reduction in symptoms.

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tion differentiation (how people report attention to emotion (the degree to which they are aware of their emotions) (Mankus & Thompson, 2015). Emotional awareness is associated with fibromyalgia symptoms (Lumley et al., 2017), but the relationship is not always significant. Therefore, this study aimed to examine the relationship between emotional awareness and several subcomponents of emotional awareness.

When examining this relationship, fibromyalgia is more likely among people aged 35 and above (Lumley et al., 2017) than to younger adults (under 35 years of age). Older adults focus less on the sources of their emotions, focus less on their own experiences and expanded vocabulary (Mankus, Boden, & Thompson, 2015). Women are more likely than men (Weirwille, 2011), and women are more likely than men (Castro-Sánchez et al., 2015) to report their emotions than men, suggesting a relationship (Lumley et al., 2015). Thus, controlling for age and sex is important.

Given the conflicting relationship between emotional awareness and sex, we hypothesized that some aspects of emotional awareness might be related to fibromyalgia symptoms. Controlling for which aspects of emotional awareness are related to fibromyalgia symptoms (controlling for sex and age) might allow researchers to better understand the relationship.

PARTICIPANTS

This paper used the same participants as the previous study (216 female fibromyalgia patients (216 female, 216 male).

present the type of emotion (they experience), and at which people deal with their emotions; Mankus, Bode, and others (2012) found that awareness and expression therapy reduces fibromyalgia symptoms, but it is unclear which aspects of the therapy are more responsible. Future research should examine the relationship between fibromyalgia symptoms and levels of emotional awareness.

In this study, we controlled for differences in age and sex. Fibromyalgia prevalence increases over the age of 50 (Weirwille, 2011). In contrast, older adults (60+) generally have better emotional awareness compared to younger adults (of age), as older participants are able to identify the causes of their emotions on negative thoughts and emotions, and use their life experiences and vocabularies to more accurately express their emotions (Lumley et al., 2015). In addition, women are more likely to get fibromyalgia than men, and women with fibromyalgia tend to have higher pain levels (Lumley et al., 2012). In contrast, women are generally more attentive to their emotions and report higher levels of emotional awareness (Mankus et al., 2012). Therefore, sex is important.

The purpose of this study was to explore the relationship between symptoms of fibromyalgia and emotional awareness with age and sex. We hypothesized that the aspects of emotional awareness would continue to be related to fibromyalgia symptoms after controlling for these variables. Understanding the relationship between these variables are related to fibromyalgia symptoms (after controlling for age and sex) will help researchers to improve treatments and thus quality of life for people with fibromyalgia.

METHODS

The study included 100 participants as Lumley et al. (2017). The participants were 200 (100 female, 100 male), who were recruited for a study on fibromyalgia.

LEAS Hand scores	-.15*	-.09	-.05
Highest 20-Unique	-.19*	-.15*	-.03
Highest-4	-.12	-.09	-.01
Specificity	-.09	-.14*	-.04
Complexity	-.12	-.09	.01
Granularity	-.15*	-.13	-.02
Verbosity	-.06	-.04	.02

* $p < .05$.

Table 2

Partial Correlations of Emotional Awareness with Fibromyalgia

Emotional Awareness	Pain Severity	Fatigue	Depression
LEAS Hand scores	-.17*	-.11	-.08
Highest 20-Unique	-.21*	-.16*	-.04
Highest-4	-.14*	-.11	-.04
Specificity	-.10	-.15*	-.05
Complexity	-.14*	-.11	-.02
Granularity	-.17*	-.15*	-.04
Verbosity	-.06	-.05	.01

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<i>nyalgia Symptoms, Controlling for Age and Sex</i>				
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Anxiety	Sleep Quality	Physical Functioning	Satisfaction with Life	gra
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				Lumley
				Em
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-.06	-.06	.03	.03	doi
-.04	-.01	.04	.02	Manku
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				<i>cin</i>
.04	.01	-.07	-.02	D

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n with fibromyalgia. *Pain Medi-*

more young patients (20-30 years), treatments. Ages ranged from 20 – participants disclosed their ethnicity did not provide information about t

MEASURES

The LEAS was scored using Pro (2013) and Wordlist 2.5 (Barchard, 2010; Barchard & Picker, in press) h valid as LEAS hand scoring. This awareness (Highest-4 and Highest nents (Complexity, Granularity, Spe

The primary outcome measures Pain Inventory, the Pittsburgh Sleep

74 (mean 49.12, standard deviation 12.24). 227 of the
y, with 219 being white and 8 being black. 3 participants
their ethnicity.

gram for Open-Ended Scoring (POES; Leaf & Barchard
2013). Previous research (Barchard, Bajgar, Leaf, & La
as shown that POES produces scores that are at least
study used POES to calculate both overall emotion
(20-Unique) and four emotional awareness subcom
cificity, and Verbosity).

for the study include: the pain severity index of the
p Quality Index, the Center for Epidemiological Stud

* $p < .05$.

DISCUS

The purpose of this research was to determine which linguistic features are related to fibromyalgia symptoms and how these relationships change when controlling for age and sex. We found that overall, emotional complexity, and granularity were all related to greater emotional verbosity. However, emotional verbosity was not related to fibromyalgia symptoms. We encourage fibromyalgia patients to talk about their emotions a lot and use a lot of words: describing their emotions using specific words and using different words to describe their emotions in different contexts.

SSION

determine which aspects of emotional awareness—whether these relationships remain after overall emotional awareness, specificity, counter pain and fatigue. On the other hand, allgia symptoms. It is not sufficient for fibromyalgia. Instead, they must use the right kinds of words rather than vague ones, and using different circumstances.

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