Journal of Anxiety Disorders 43 (2016) 23–31

Contents lists available at ScienceDirect

Journal of Anxiety Disorders

Synergistic effects of pain intensity and anxiety sensitivity in relation to anxiety and depressive symptoms and disorders among economically disadvantaged latinos in a community-based primary care setting

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ARTICLE INFO

Article history:
Received 11 April 2016
Received in revised form 24 June 2016
Accepted 21 July 2016
Available online 26 July 2016

Keywords:
Anxiety sensitivity
Pain intensity
Latino
Primary care
Health disparity

ABSTRACT

The present investigation examined the interactive effects of anxiety sensitivity and pain intensity in relation to anxious arousal, social anxiety, and depressive symptoms and disorders among 203 Latino adults with an annual income of less than $30,000 (84.4% female; M_{age} = 38.9, SD = 11.3 and 98.6% used Spanish as their first language) who attended a community-based primary healthcare clinic. As expected, the interaction between anxiety sensitivity and pain intensity was significantly related to increased anxious arousal, social anxiety, and depressive symptoms as well as number of depressive/anxiety disorder diagnoses. The form of the significant interactions indicated that participants reporting co-occurring higher levels of anxiety sensitivity and pain intensity evinced the greatest levels of anxious arousal, social anxiety, and depressive symptoms as well as higher levels of depressive and anxiety disorders. These data provide novel empirical evidence suggesting that there is clinically-relevant interplay between anxiety sensitivity and pain intensity in regard to a relatively wide array of anxiety and depressive variables among Latinos in a primary care medical setting.

Latinos are one of the fastest growing minority groups in the United States (U.S.) and will comprise approximately 40% of the population by 2050 (U.S. Census Bureau, 2000). Latinos experience numerous health inequalities, including mental health disparities (U.S. Department of Health & Human Services, 2001). For example, Latinos lack access to mental health services in general, and even when accessed, receive poorer quality of services compared with other ethnicities (Alegría et al., 2008; Lee, Laiewski, & Choi, 2014; Parra-Cardona & DeAndrea, 2014). From a public health perspective, primary care medical settings represent a key strategic portal to help address mental health disparities among Latinos in the U.S. because these settings are where health services are most often sought (Lagomasino et al., 2014; Vega & Lopez, 2001). Thus, intervention programming can be introduced in such settings. Although some past work has established the feasibility, and to a lesser extent, the efficacy of mental health interventions for Latinos in primary care for depression (e.g., Collado, Castillo, Maero, Lejuez, & MacPherson, 2014; Collado, Long, MacPherson, & Lejuez, 2014; Miranda, Azocar, Organista, Dwyer, & Areane, 2003; Muñoz et al., 1995) and anxiety disorders (e.g., Chavira et al., 2014), there remains little empirical data on risk factors for the onset and expression of depressive and anxiety symptoms and disorders among this population (Chapa & De La Rosa, 2004).

Pain is one factor that is both highly prevalent and frequently co-occurring with anxiety, depression, and general medical problems (Gerrits et al., 2012; Gerrits, Van Oppen, Van Marwijk, Penninx, & Van der Horst, 2014; Kato, Sullivan, Evengård, & Pedersen, 2006). For example, "pain complaints" account for more than half of

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http://dx.doi.org/10.1016/j.janxdis.2016.07.007
0887-6185/

all outpatient primary care visits (Kroenke, 2003). Primary care patients who endorse pain are also significantly more likely to suffer from anxiety or depressive disorders (Means-Christensen, Roy-Byrne, Sherbourne, Craske, & Stein, 2008), and pain severity covaries with anxious/depressive symptom severity (Bair et al., 2004; Kroenke et al., 2013). Although pain research among Latinos is highly limited (Green et al., 2003), available studies have reported that pain severity and overall distress are greater among Latinos compared to Caucasians (e.g., Gagnon, Matsuura, Smith, & Stanos, 2014). Among Latinos, pain severity has been associated with greater anxiety and depressive symptoms (Hastie, Riley, & Fillingim, 2005; Hernandez & Sachs-Ericsson, 2006) as well as disability (Edwards, Moric, Husfeldt, Buvanendran, & Ivankovich, 2005). Moreover, there is some evidence that Latinos tend to endorse a greater number of somatic symptoms associated with mental health problems relative to other cultural groups (e.g., Simon, VonKorff, Piccinelli, Fullerton, & Ormel, 1999). Yet, research has not yet examined pain severity in relation to anxiety and depressive symptoms and psychopathology among Latinos in primary care.

Beyond pain severity, there has been an increasing recognition of the importance of understanding how one reacts to emotional distress in the expression of aversive internal states, including pain as well as anxiety/depressive symptoms and psychopathology. In the context of personal threat, anxiety sensitivity marks the extent to which one attends to, and perceives, anxiety-relevant and other aversive, internal sensations (e.g., somatic perturbation) as harmful, dangerous, and indicative of catastrophic consequences (Taylor, 2003). In fact, work on primarily European American samples indicates that anxiety sensitivity is a risk factor for the acquisition and maintenance of anxiety and depressive psychopathology (Olatunji & Wolitzky-Taylor, 2009). For instance, prospective (Li & Zinbarg, 2007; Norris, Murphy, Baker, & Perilla, 2004; Schmidt, Zvolensky, & Maner, 2006) and laboratory (Brown, Smits, Powers, & Telch, 2003; Rapee & Medoro, 1994; Zinbarg, Brown, Barlow, & Rapee, 2001; Zvolensky, Feldner, Eifert, & Brown, 2001) studies suggest that anxiety sensitivity is related to an increased risk for more intense anxiety symptoms and anxiety and depressive psychopathology. Importantly, anxiety sensitivity is a relatively stable, but malleable, construct which serves as an explanatory mechanism in the treatment of anxiety psychopathology (e.g., Smits, Berry, Rosenfield et al., 2008; Smits, Berry, Tart, & Powers, 2008). Although anxiety sensitivity has not been extensively studied among Latinos, available, albeit highly limited, evidence suggests it may be related to mental health processes in a manner largely similar to that reported among Caucasian samples (Pina & Silverman, 2004; Varela, Weems, Berman, Hensley, & De Bernal, 2007; Zvolensky et al., 2007; Zvolensky et al., 2015). Other studies indicate that anxiety sensitivity is strongly associated with fearful appraisals of pain intensity in European Americans (Ocañez, Kathryn, McHugh, & Otto, 2010), although such associations have not been explored among Latinos.

Theoretically, pain intensity and anxiety sensitivity may operate with one another to confer greater anxiety and depression vulnerability among Latinos. Research led by Asmundson and colleagues among largely European American samples, for example, suggests individuals with higher levels of anxiety sensitivity report higher levels of negative emotional symptoms as a function of pain severity (Asmundson & Norton, 1995). Accordingly, greater levels of anxiety sensitivity among individuals experiencing more pain could reinforce maladaptive compensatory behaviors, such as pain-related escape and avoidance (Asmundson & Norton, 1995). By extension, greater levels of escape/avoidance behavior may, in turn, be related to increased probability of negative emotional symptoms (Asmundson, & Taylor, 1996; Carleton, Abrams, Asmundson, Antony, & McCabe, 2009; Olthuis, Watt, Mackinnon, Potter, & Stewart, 2015). Collectively, these processes (anxiety sensitivity and pain intensity) may theoretically function synergistically to confer greater risk for the expression of anxiety and depressive-relevant symptoms and disorders. To illustrate, a Latino individual experiencing higher pain intensity symptoms who has high (versus low) levels of anxiety sensitiviy may be at an increased risk of experiencing more severe anxiety and depressive symptoms because of their perception of personal threat for somatic perturbation. That is, the high anxiety sensitive Latino person may be more emotionally reactive to the pain symptoms. From this perspective, a formative next research step is to further explore the potential interplay of pain intensity and anxiety sensitivity as an integrative explanatory process for the expression of anxiety and depressive symptoms and disorders among Latinos in primary care.

The present investigation sought to test an interactive model of pain intensity and anxiety sensitivity among an economically disadvantaged Latino sample in primary care. It was predicted that higher levels of pain intensity would be associated with greater degrees of anxiety/depression when co-occurring with higher levels of anxiety sensitivity. Additionally, it was predicted that the interactive effect would be evident above the main effects and apparent after adjusting for gender, age, years being in U.S., marital status, education, employment, and negative affectivity.

1. Method

1.1. Participants

Participants ($N = 203$; 84.2% female; $M_{age} = 38.9$, $SD = 11.3$ and 98.6% used Spanish as their first language and self-identified as Latino) were attendees of a community-based primary care integrated healthcare clinic in Houston, Texas. All participants had a household income of less than $30,000 per year. Inclusion criteria for this study included: ability to read, write, and communicate in Spanish and being between 18–64 years old. Participants were excluded based on the following criteria: limited mental competency (inability to produce coherent speech, understand the study, and read the information given) and inability to provide informed, voluntary, written consent; endorsement of current or past psychotic-spectrum symptoms via structured interview screening. Please see Table 1 for a descriptive summary of the study sample's demographic characteristics. All measures were in Spanish (language).

As determined by the baseline Mini International Neuropsychiatric Interview 6.0 (M.I.N.I.), 26.6% of the sample met criteria for current (past year) Axis I psychopathology. Among participants with current psychopathology, the average number of diagnoses per participant was 2.3 ($SD = 1.83$). See Table 1.

1.2. Measures

1.2.1. Demographics Questionnaire

Demographic information collected included sex, age, ethnicity, educational level, marital status, and employment status.

1.2.2. International Neuropsychiatric Interview 6.0 (MINI; Lecrubier et al., 1997)

Trained, Spanish-speaking staff administered the MINI, a time-efficient diagnostic assessment, under the supervision of an independent doctoral-level rater. The MINI has demonstrated satisfactory inter-rater reliability, test-retest reliability and validity (Sheehan et al., 1997) and has been deemed applicable for use in research settings (Lecrubier et al., 1997). A random selection of interviews (approximately 12%) was checked for accuracy with no cases of diagnostic disagreement noted. In this study, number