



Published in final edited form as:

Nurs Clin North Am. 2011 June ; 46(2): 193–199. doi:10.1016/j.cnur.2011.02.009.

Acculturation, Depression, and Function in Individuals Seeking Pain Management in a Predominantly Hispanic Southwestern Border Community

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Synopsis

Acculturation is a construct beyond its prime. It does not inform practice in the acute or primary care setting; nor does it explain ethnic disparities in the recognition and treatment of chronic diseases, particularly chronic pain. It is a variable, like gender or ethnicity that cannot be influenced through nursing or medical practice. As clinicians, it is imperative that we recognize contributing factors, co-morbid conditions, and the impact of chronic pain on individuals and families. The purposes of this article are to present evidence that exemplifies the non-significant role acculturation plays in expression of pain and function of a predominantly Hispanic population on the border; and to identify more meaningful perspectives of culture that may lessen health disparities and improve pain management.

Keywords

acculturation; chronic pain; function; depression; Hispanic

Introduction

With the steadily increasing population growth of Hispanics in the United States, especially those of Mexican origin, comes a curiosity of the impact of acculturation on health and illness. The research focus on acculturation magnified with the conscientious inclusion of minorities in funded research. A database search of Embase, PubMed, and PsychInfo identified over 17,000 publications using the explosion of search terms “acculturation and Hispanics or Latinos” with two-thirds published between 2001–2011. Adding Boolean terms “and health or disease”, the overall number in PsychInfo through 2000 fell to 2,435 with publications in the past ten years doubling to over 5,000. In 2005, inclusion of a measure of acculturation was key to receiving funding for this research study.

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Disclosure: The authors have nothing to disclose.

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Acculturation is the process of adapting attitudes, values, customs, beliefs, and behaviors to that of a new and dominant or host culture, i.e. the Anglo culture in the United States¹⁻⁴. In studies of the impact of acculturation on health and illness of Hispanics results are mixed: Acculturation tends to be both protective and deleterious depending on the condition of interest and type of measurement⁵⁻⁷. Measurement includes formalized scales, usually language-based¹, and proxy measures, such as nativity and length of time in the U.S.⁵

In general, research related to pain and pain management in the Hispanic population is limited and almost nonexistent when acculturation is added as a research focus. Using PubMed, we found two published studies on acculturation and pain---one on cancer pain, the other on orofacial pain. Im and associates⁸ noted no relationship between cancer pain scores and acculturation level determined by a 5-point Likert scale of preferences related to food, music, customs, language, and friendship. Yet, the proxy measure nativity was correlated with the cancer pain experience: Individuals born outside the U.S. reported lower pain levels and greater function. Conversely, Riley discovered a relationship between higher levels of orofacial pain and depression and low acculturation as defined by nativity and primary Spanish language use⁹. Although we know that Hispanics have significantly worse physical health outcomes than Anglos,¹⁰ the role of acculturation in chronic pain is unclear.

As clinicians, it is imperative that we recognize contributing factors, co-morbid conditions, and the impact of chronic pain on individuals and families. The purposes of this article are to present evidence that exemplifies the non-significant role acculturation plays in expression of pain and function of a predominantly Hispanic population on the border; and to identify more meaningful perspectives of culture that may lessen health disparities and improve pain management.

Exemplar Study

Background and Significance—Chronic, persistent, or daily recurrent pain is ubiquitous, costly, and disabling, both physically and socially¹¹⁻¹³. One in four Americans suffer from chronic pain, more than twice the number afflicted with diabetes, heart disease and cancer combined¹⁴. Yet, over 75% of the time, pain is managed inadequately costing more than \$100 billion dollars a year in health care and lost productivity¹⁵⁻¹⁶.

Pain is a multifaceted syndrome with physiological and psychosocial contributing factors and expression. Physiologically, pain and depression share common neurological pathways and impact the same neurotransmitters¹⁷⁻¹⁸. Individuals with pain often develop depression; and individuals with depression have poorer outcomes when they experience pain¹³. Culture, health beliefs and behavior influence health outcomes in this population¹⁹⁻²⁰. For example, although Hispanics tend to have worse health outcomes than Anglos¹⁰, they are at lower risk for depression²¹.

Purpose—Research is limited in the role of acculturation in depression and sparse in comorbidity studies of depression and pain. Therefore, the purpose of this exploratory, correlational study was to explore the associations among acculturation, depression, and physical functioning in a predominantly Hispanic population with chronic pain. Sample size was set at 85 based on *a priori* power analysis to detect a medium size effect size of acculturation on pain, function, and depression (α of 0.05 with power of .80)²².

Material and Methods—To protect human rights, we observed university policies and procedures related to human subjects, received Institutional Review Board approval from The University of Texas at El Paso prior to data collection, and followed HIPAA regulations to ensure privacy. All data were de-identified and reported in aggregate form thus maintaining confidentiality and anonymity. Data were collected in 2006 and 2007.

A trained research assistant and clinic staff distributed informed consents and surveys in the participants' primary language. Once informed consent was obtained, participants were enrolled in the study. After the completion of the surveys, participants received \$5.00 to compensate for their time. Data collection process is described in Table 1 and measurement in Table 2.

Sample and Setting—Through convenience sampling, we recruited 92 participants seeking treatment at a specialty clinic in Texas along the U.S./Mexico border with bilingual staff. The specialty clinic is the practice of the second author. All participants received patient-centered care and individualized, multi-modal treatment pain management based on best practices. The clinician, blinded to participant status, reviewed the history and conducted a thorough physical exam (PE) and designed a pain management plan in partnership with the patient according to evidence-based practice guidelines²³.

Analysis—From October through December 2007 we extracted, coded, cleaned, and imported data into a computerized statistical program (SAS version 9.1) for analysis by a university statistician. The statistician calculated descriptive statistics and conducted Pearson correlation coefficients to determine associations among acculturation, depression, and physical functioning using SAS statistical program and manually calculated z-test for difference between correlations. Post hoc analysis consisted of linear regression, ANOVA and MANOVA

Analysis and Results—The sample reflects the general³⁰ and pain³¹ population of the Texas community bordering Mexico. The majority (75%) of participants lived in the United States along the border for 10 years or more; and was Hispanic of Mexican-American origin (79%), married (55%) and female (60%). On average, the sample experienced daily pain levels of 6 with physical functioning below the norm for most Americans²⁹ and was mildly depressed with almost 25% scoring in the moderate to severe range for depression²⁹.

The relationship between acculturation and pain level, depression, or function depression was not significant ($p>0.05$) even when controlling for socioeconomic status, i.e. income and education. Post hoc analysis, revealed that gender, nativity or place of birth (Mexico or United States), and income were correlated to depression and function. These findings are supported by a qualitative project that discovered social roles of women (culture of gender) in this same population played a significant part in the expression and management of pain. In conclusion, nativity, gender, and income may be more predictive of function and depression in this bi-national, border population than acculturation.

Discussion

The findings of this study support the conclusion of other scholars and researchers. Acculturation as a descriptor or demographic tells us little about behaviors grounded in individual or group beliefs and attitudes that impact health^{33–36}. When acculturation is associated with health behaviors, it does not impact overall health outcomes. For example, Ghaddar et al. identified that less acculturated Hispanic-Americans ate more fruits and vegetables (not necessarily the daily recommended five servings) and were less active than those Hispanics who scored higher in acculturation. However, level of acculturation did not change outcomes in terms of obesity or diabetes³⁷.

Acculturation does not inform practice in the acute or primary care setting; nor does it explain ethnic disparities in the recognition and treatment of chronic diseases, particularly chronic pain^{8·9}. It is a variable, like gender or ethnicity that cannot be influenced through nursing or medical practice. As such, it is not useful as a focus for intervention. In era of

globalization, the concept reinforces or maintains stereotyping and the notion that the dominant, i.e. Anglo culture, is preferred².

Acculturation is a construct beyond its prime. It is time to move away from this concept to cultural perspectives of the clinician and the person with pain that do influence health disparities and inform practice. As clinicians, we can provide patient-centered care and incorporate patient beliefs and preferences into clinical decision-making³⁸. We can identify and measure outcomes in our practice that do make a difference.

Living on the border, I (KMR) learned Spanish to eliminate the language barrier and promote goodwill with Hispanic patients who prefer to speak Spanish. I find that the more I speak Spanish, the more they speak English; and we can come to a mutually satisfying history, exam, and plan of care. In other instances, I rely on clinicians who are fluent in Spanish to assist me.

Acknowledgments

Funded in part by the National Institutes of Health, National Center on Minority Health and Health Disparities (Grant #P 20 MD000548) A joint venture of The University of Texas at El Paso and The University of Texas Health Science Center at Houston School of Public Health

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Table 1

Data Collection Process

- A bilingual clinic staff member or research assistant recruited patients **prior** to being seen by the clinician (PI or co-PI) who was blinded to participation status.
 - Individuals meeting inclusion criteria (English or Spanish speaking adults ≥ 18 years of age requesting treatment of pain who were residents along U.S./Mexico border and able to give informed consent) were asked to participate in the study.
 - Participants were reassured that participation was voluntary and decision would not affect quality of care as clinician.
 - Disadvantages and advantages of participation were explained and informed consent obtained in patient's primary language
- Once consent form was signed, demographic information and scales for pain, acculturation, and functioning were completed in patient's primary language with assistance
- A bilingual staff member or research assistant reviewed forms for completion. If needed, this trained staff person assisted the individual with completion of the forms.

Table 2

Data Collection Methods

Variable	Description	Reliability & Validity
Demographic data	Self-reported gender, date and place of birth, marital status, length lived in US	Questions designed specifically for study
Socioeconomic status	Self-reported annual income, occupation, level and place of education (part of demographic data)	
Acculturation	Short Acculturation Scale for Hispanics (SASH) consists of 12 items that tap language use, media preferences, and ethnic social relations. Possible scores range from 12 (low) to 60 (high acculturation) 24.	Strong internal consistency (coefficient alpha = .92) and validity for Hispanic and Non-Hispanic samples ²⁴
Pain severity	Equidistant 0–10 numerical rating scale (NRS) (from no pain to worst pain possible) ²⁵	Reported ²⁵
Depression	Beck Depression Inventory-II (BDI-II) consists of 21 items that measure various symptoms of depression. Possible scores range 0–63, with the higher the number indicating higher level of depression ²⁶ .	High reliability and validity reported for English ²⁶ and Spanish ²⁷ versions
Function	SF-36 short form version 2 (SF-36v2) measures quality of life and overall functioning. It provides two summary scores (physical component summary or PCS and mental component summary or MCS), and scores for 8 individual scales ²⁸ . Norm-based scoring allows comparison across general and specific adult populations including the elderly ²⁹ . Only the PCS was used for this study,	Demonstrated reliability using test-retest and internal consistency methods ($\alpha \geq 0.80$ for subscales and 0.90 for component scores) and content, concurrent, criterion, construct, and predictive validity for English and Spanish versions ²⁹

Table 3

Descriptive Statistics (n=92)

Gender	Age	Ethnicity	BDI	SASH	SF36v2 PCS
55 Women (60%) 37 Men (40%)	\bar{x} = 48.8 range 20–83	73 Hispanic (79%) 19 Non-Hispanic (31%)	\bar{x} = 14.5 range 3–26	\bar{x} = 34.5 range 20.1–48.9	\bar{x} = 39.8 range 25.6–53.9