

The Healing Relationship in Indigenous Patients' Pain Care: Influences of Racial Concordance and Patient Ethnic Salience on Healthcare Providers' Pain Assessment

REVISED REFERENCES, 04/13/2016

Abstract

Indigenous persons suffer from among the highest rates of chronic pain in the United States. Using a relationship-centered medical decision-making framework, this study sought to examine the influence of Indigenous racial concordance and patient ethnic salience on providers' assessment of pain. From May to October 2010, pre-identified healthcare providers working exclusively with Indigenous patients in the United States were randomly assigned an online clinical case vignette presenting an Indigenous patient reporting chronic lower back pain. A 2×2 analysis of variance, between-subjects design, was conducted with the predictor variables racial concordance and patient ethnic salience on the outcome measure of providers' ratings of patient's pain on a visual analogue scale. We found a significant interactional effect between racial concordance and patient ethnic salience on providers' pain assessment ratings. Indigenous providers tended to rate the patient with higher Indigenous ethnic salience more congruently with the self-reported pain ratings, perhaps due to perceived similarities and lowered unconscious bias. This is the first known study to examine racial concordance of the healthcare provider and ethnic salience of the patient in pain care. This study informs healthcare provider practice and consideration of patients' racial/cultural attributes and possible influence on assessment bias, which may be particularly relevant among Indigenous patients. More research is needed to identify specific interventions to improve cultural awareness and sensitivity for Indigenous persons who suffer from pain.

Keywords

Indigenous health, pain, pain disparities, patient-provider relationship, racial concordance, patient ethnic salience, American Indian health, pain assessment, medical decision-making

Authors

Michelle Johnson-Jennings, PhD, (Choctaw Nation tribal member)—founding director of the Research for Indigenous Community Health (RICH) Center, Associate to the Dean for Indigenous Health, assistant professor, and License Eligible clinical health psychologist at the University of Minnesota—served as first author in developing the research design, implementing the project, and writing the manuscript.

Wassim Tarraf, PhD, assistant professor, Wayne State University, served as statistical consultant and edited the manuscript.

Hector M. González, PhD, associate professor, Michigan State University, served as senior author, offering guidance during the research design and editing the manuscript.

Acknowledgments

Gratitude and appreciation are extended to the Indian Health Services and medical health providers who served as the medical panel of experts for this study; to the Indigenous community member panel; and to Dr. Bruce Wampold and committee members at University of Wisconsin–Madison for their guidance.

This work was supported by the National Institutes of Health, National Institute of Mental Health, National Centers on Research Resources, IDEA Network Biomedical Research Excellence (P20 RR16455), National Institute of Mental Health (MH 084994 – HMG) and National Heart Lung Blood Institute (HC 65233 – HMG), NIH Native American Research Consortium on Health (NARCH) Great Lakes Intertribal Consortium Intern Funding, NIH IHART grant, and Amy Hunter Wilson Dissertation Fellowship.

Introduction

American Indian Alaska Natives, or as herein referred to, *Indigenous* populations, experience significantly higher chronic pain rates than other U.S. racial groups (Jimenez, Garrouette, Kundu, Morales, & Buchwald, 2011; Wilson et al., 2011). Pain disparities in Indigenous populations may stem from their shared history of oppression and systemic discrimination, which subsequently set a path toward health disparities for present generations (Evans-Campbell, 2008; Sotero, 2006; Yellow Horse Brave Heart, 2003). This deliberate, prolonged mass trauma inflicted on Indigenous peoples and others is commonly referred to as *historical trauma* and results in social, environmental, and psychological responses that are transmitted intergenerationally (Sotero, 2006). Not only has historical trauma disrupted Indigenous healing practices and lowered well-being, it further appears to intensify the effects of lifespan traumas leading to increased stress and stress syndromes, which have been associated with higher reports of pain (Anderberg, 1999; Buchwald et al., 2005; Gatchel, Peng, Peters, Fuchs, & Turk, 2007). Given these intergenerational effects, it is not surprising that Indigenous groups presently seek pain treatment more often than other U.S. races (Deyo, Mirza, & Martin, 2006). However, systemic barriers within Western medicine may interfere with receiving effective pain care.

Systemic Discrimination

Healthcare delivery discrimination and cultural differences can contribute to health disparities, such as with pain (Indian Health Service [IHS], 2013). During medical office visits, Indigenous patients have reported higher rates of healthcare discrimination as compared to Whites¹ (Euro-Americans), Blacks (Afro-Caribbean Americans), and Asians (Asian-Americans) (Johansson, Jacobsen, & Buchwald, 2006). Given that racial discrimination can serve as a mechanism for increased stress, and that stress increases pain rates, racial discrimination significantly correlates with higher rates of pain impairment among Indigenous groups (Chae & Walters, 2009; Johnson-Jennings, Belcourt, Town, Walls, & Walters, 2014; Walters et al., 2013). Hence, Indigenous patients seeking pain care may leave a healthcare setting in more pain than when they arrived, as found by Miner, Biros, Trainor, Hubbard, and Beltram (2006).

¹ While these are ambiguous and disjointed concepts, the racial/ethnic titles are created within the history of the US, used presently, and influence our social structure today. Each group serves as a proxy for cultural background and is used in medical clinics and on forms.

The nature of pain assessment may further introduce systemic biases. The extant research suggests that providers tend to assess Indigenous patients' pain as lower than that of other U.S. racial groups (Jimenez et al., 2011; Tait, Chibnall, & Kalauokalani, 2009). Some providers are more likely to dismiss Indigenous patients' reported pain levels or see them as overreporting their pain compared to patients from other racial groups (Bernabei et al., 1998; Miner et al., 2006). This dismissal may arise from providers struggling with the idiopathic nature of pain and attempting to categorize pain through an objective lens. However, pain is a subjectively experienced phenomenon that is culturally bound and varies cross-culturally in assigning of meaning, coping styles, and expressions of pain (Callister, 2003). Therefore, attempting to use an objective lens to assess another person's pain may dismiss cultural nuances and related barriers. The providers' pain assessments then affect their medical decision-making, and if inaccurate, patient health outcomes are likely to suffer (Miner et al., 2006). Hence, provider pain assessment for Indigenous patients requires consideration of multiple, interacting factors in the healing relationship, including cultural barriers and often hidden, unconscious biases.

Relationship Barriers in Pain Assessment

The extant literature suggests that cultural barriers in communication impede the patient-provider relationship and subsequently reduce effective pain care among Indigenous populations (Jimenez et al., 2011). Given that pain is culturally experienced and communicated (Callister, 2003; Carlsson, 1983; Cintron & Morrison, 2006; Crowley-Matoka, Saha, Dobscha, & Burgess, 2009; Gatchel et al., 2007), cultural differences between providers and patients may interfere with understanding patients' pain symptoms. While Western medicine distinguishes between physical and mental pain, some Indigenous patients may communicate pain as a function of mind, body, spirit, and social relationships (Pelusi & Krebs, 2005; Sobralske & Katz, 2005). Additionally, some Indigenous women have reported not discussing their pain due to *blocking*; that is, choosing not to verbally recognize the pain in fear that speaking of it will cause it to remain (Struthers, Savik, & Hodge, 2004). In this case, the women expected the provider to have enough empathy to recognize and assess pain levels through nonverbal communication. Meanwhile, providers may remain unaware of nonverbal cues and miss culturally bound pain symptoms. Providers may also possibly misunderstand *stoicism*, or restrained physical expressions of pain, among Indigenous patients and consequently underreport their patient's pain (Bernabei et al., 1998). On the other hand, providers who are familiar with varying Indigenous cultural groups, tribes, and languages may be more effective in assessing nonverbally communicated pain, as compared to those providers who are unfamiliar. Therefore, cultural differences between the patients and provider may create challenges in patient-provider interactions (Burgess, van Ryn, Crowley-Matoka, & Malat, 2006; Cooper, Beach, Johnson, & Inui, 2006; Laveist & Nuru-Jeter, 2002). If not adequately addressed, these challenges can create cross-cultural, diagnostic, and therapeutic difficulties (van Ryn & Burke, 2000) in pain care and the overall healing relationship.

Relationship-Centered Medical Decision-Making Framework

We propose a *relationship-centered decision-making framework* for assessing pain in Indigenous populations (see Figure 1), a framework anchored in social-cognitive theory and previous medical decision-making research (Burgess et al., 2006; Deyo, Mirza, Turner, & Martin, 2009; McCarberg, Nicholson, Todd, Palmer, & Penles, 2008; Tait et al., 2009).

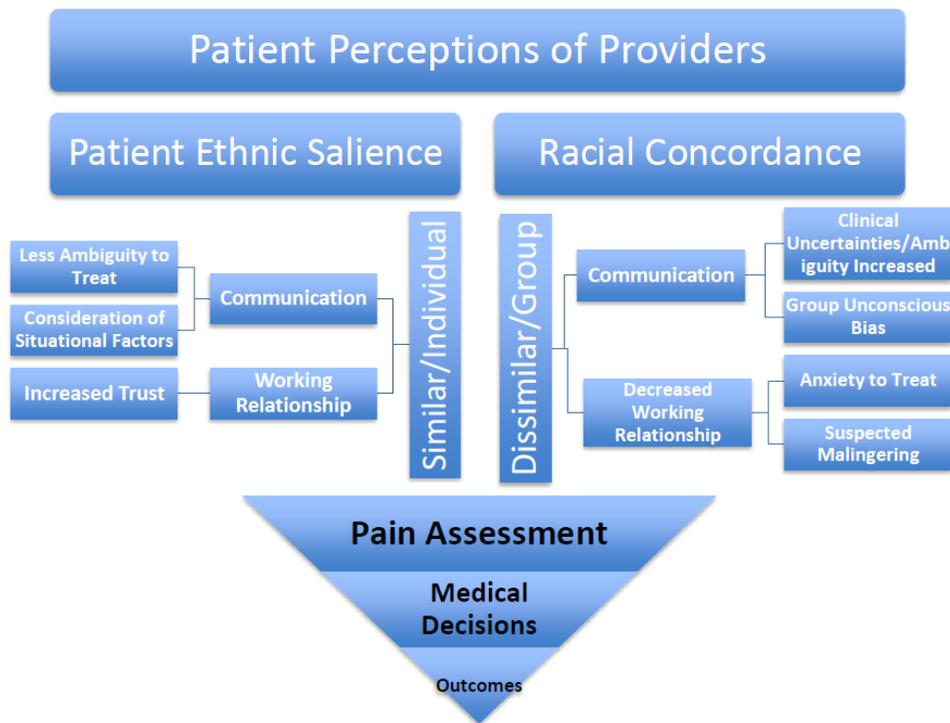


Figure 1.
Relationship-centered medical decision-making framework

This framework explains how healthcare providers may experience cognitive dissonance, stress, or fatigue, which then increases their likelihood to rely on preformed, unconscious beliefs to make sense of complex cross-cultural clinical encounters. As considered in this framework, the etiologic ambiguity of chronic pain and perceived patient–provider racial differences, including cultural and linguistic differences, are likely to contribute to increased stress and cognitive dissonance for the healthcare provider and patient. Under such stress, a provider might unknowingly rely on preformed beliefs, such as racial stereotypes (Bonham, 2001; Burgess, Fu, & van Ryn, 2004; Burgess Phelan, et al., 2014; Burgess et al., 2006; Gatchel et al., 2007; Tait et al., 2009; van Ryn & Burke, 2000). At this point, preconceived or unconscious views of Indigenous persons, or stereotypes, are often based on the media (King, 2013). If uninformed regarding tribal cultures, providers may unknowingly dismiss culturally bound pain expressions and rely on preformed stereotypes. Given the provider would likely be unaware of this unconscious action, he or she would be less able to refute unconscious biases, unless trained otherwise (Burgess et al., 2008; Burgess et al., 2004; van Ryn & Burke, 2000). Furthermore, because *race* is defined as a historical, sociopolitical construct between groups that are often identified via physical appearance and *ethnicity*, race may serve as a proxy for an individual’s cultural, national, and political affiliations (Ezenwa & Fleming, 2012). The Institute of Medicine suggests that if providers are influenced by unconscious biases, they may ignore relevant patient characteristics that are unrelated to race and could subsequently act on biased medical decision-making, particularly in assessing pain (Smedley, Stith, & Nelson, 2003). Though the Institute of Medicine described *unconscious bias* as different from direct racism or prejudice in intentionality and awareness, it nonetheless has a potentially large influence on pain care (Smedley et al., 2003).

Solutions for Unconscious Bias: Racial Concordance

The Institute of Medicine (Smedley et al., 2003) and several healthcare entities (American Medical Association, 2003; Cone, Richardson, Todd, Betancourt, & Lowe, 2003; U.S. Commission on Civil Rights, 2004) have argued that *racial concordance* (i.e., when patient and provider self-report the same race) could reduce healthcare inequities through increasing familiarity, positive communication, and overall quality of care (Saha, Komaromy, Koepsell, & Bindman, 1999; Street, O'Malley, Cooper, & Haidet, 2008). However, research is inconclusive about the influence of racial concordance on medical decision-making and patient-health outcomes (Meghani et al., 2009). Many racial concordance studies have focused on Black and Latino populations and have not included Indigenous persons (Saha, Arbelaez, & Cooper, 2003).

While racial concordance has been associated with perceived ethnic and cultural similarity (Bonham, 2001), we propose that a patient's *ethnic salience* may vary from the patient's self-reported race. We define patient ethnic salience as the provider's perception of a patient's degree or intensity of ethnic and cultural affiliation that is relevant to the exam room, applying the psychological definition of ethnic salience (Phinney & Ong, 2007). A provider may perceive two Indigenous patients quite differently based on their perception of the patient's ethnicity, especially since many Indigenous patients differ in appearance and cultural affiliation depending on the tribe, region, and personal factors. Though individual Indigenous patients may share more or less of the provider's cultural health beliefs regardless of their appearance, the *provider's perceptions* of a patient's ethnic salience may influence the provider's communication and sense of cultural similarity. Thus, patient ethnic salience may influence provider pain assessment more than race alone.

Overall, despite the high disease burden of pain among Indigenous groups, research including pain assessment and providers' perceptions among Indigenous patients has been neglected (Jimenez et al., 2011). Such research is needed because underestimation of patients' pain could decrease effective pain care (Green et al., 2003; Jimenez et al., 2011; Tait et al., 2009). However, a paucity of research exists for the influence of racial concordance and patient ethnic salience on pain assessment. In this study, as guided by the relationship-centered decision-making framework, we examined both patient-provider racial concordance and patient ethnic salience associations with pain assessment. We predicted, first, that under conditions of patient-provider *racial concordance*, a provider's pain assessment would be more similar to the patient's self-report (i.e., indicating a severe pain rating), regardless of patient ethnic salience. Second, we expected that *high patient ethnic salience* would be associated with lower provider pain ratings, regardless of racial concordance. Last, we expected that the combinations of *racial concordance/high patient ethnic salience* and *no racial concordance/low patient ethnic salience* would increase pain ratings to similar to the patient's self-report of severe.

Methods

To test our expectations in regards to how racial concordance and patient ethnic salience relate to providers' pain assessment, we used two secure, online case vignettes about an Indigenous patient with severe pain complaints.

Patient Ethnic Salience

Both vignettes presented the same fictitious medical record and narrative for a new Indigenous patient. Patient *Aki Turtlebear*'s name and image were designed to portray high Indigenous ethnic salience, and patient *Bob Smith*'s name and image were designed to portray

low Indigenous ethnic salience. Both digitally manipulated images were created from the same photo of an Indigenous male actor whose face is partially obscured (Figure 2).

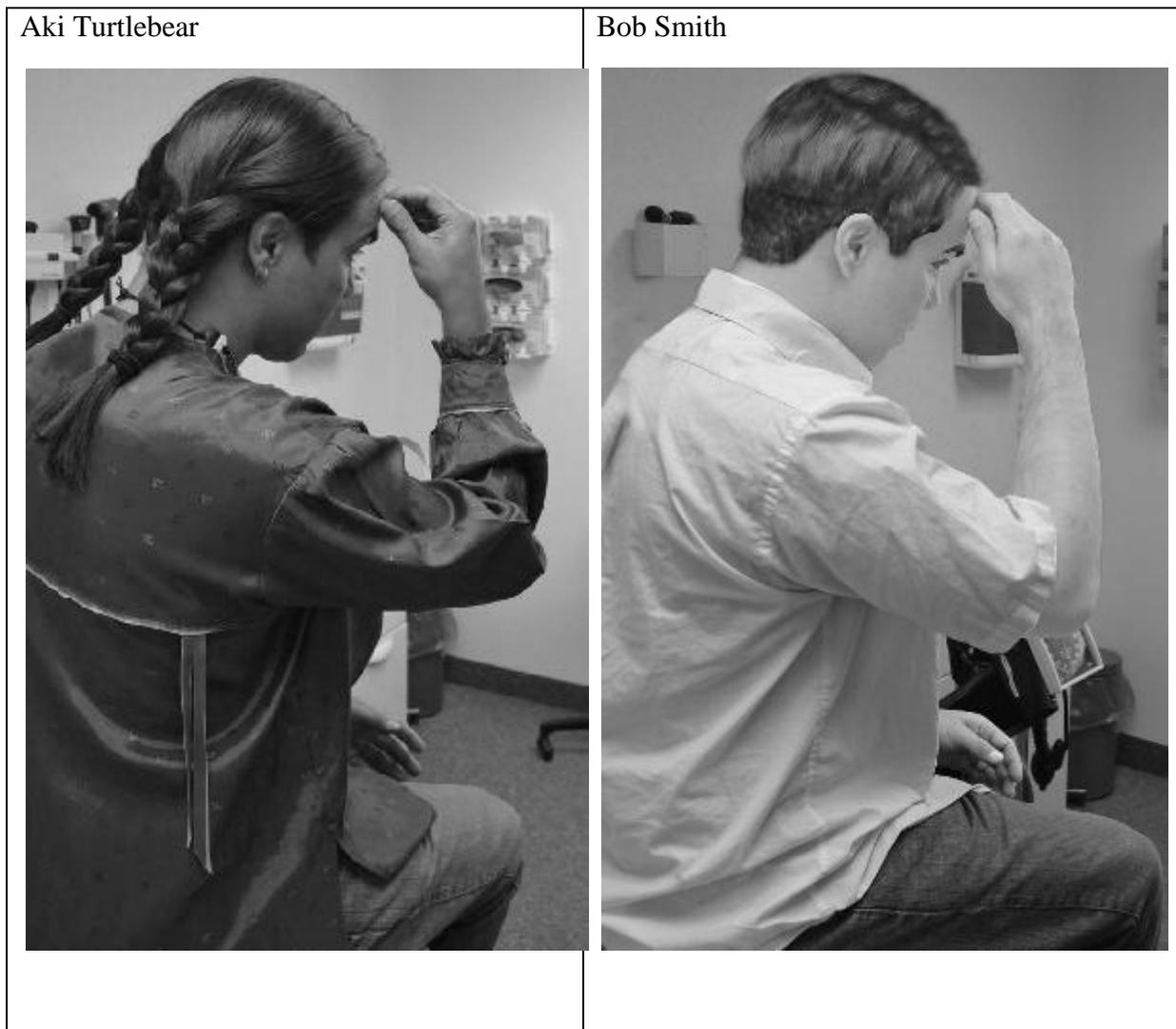


Figure 2.

Photographs of Indigenous patients with high (left) and low ethnic salience

Pilot testing of patient ethnic salience.

A panel of Indigenous and non-Indigenous social science researchers and community members ($n = 10$) confirmed the validity of ethnic salience for each photograph (Figure 2) posted online with names, by rating them from 1 (*definitely not appearing Indigenous*) to 5 (*appearing definitely Indigenous*). The high ethnic salience photo scored a mean of 4.3 out of 5, and the low salience photo scored a mean 1.5 out of 5.

Clinical Case Description

The case description followed the United States Preventive Services Task Force (Chou et al., 2007) clinical guidelines for nonspecific chronic lower-back pain management. It included the patient's gender, marital status, occupation, age, audio and text versions of a patient

narrative, and a medical chart. The medical chart displayed the patient's *present* pain as 9 out of 10 on a visual analogue scale (VAS), and for the *previous three months* varying between a 9 and 10 with concomitant occupational and social interference.

Pilot testing of clinical vignette.

The two vignettes were pilot tested by a team of primary care medical experts that included a convenience sample of eight physicians (four Indigenous and four non-Indigenous) in various specialties (i.e., family practice, internal medicine, and pediatrics). Based on the experts' feedback, the simulated patient's symptoms and medical history were manipulated reflecting a consensually agreed upon presentation of *severe*, chronic lower-back pain.

Study Participants

G*Power software (Faul, Erfelder, Lang, & Buchner, 2007) computation required a sample size of 88 to detect a moderate effect size of 0.67, with a critical $F(1, 85) = 3.95$ (Cohen, 1977). IRB approval from UW-Madison and the national federal Indian Health Service (IHS) was received. From May to October 2010, healthcare providers (i.e., physicians, nurse practitioners, and physician assistants) who work exclusively with Indigenous patients were recruited in IHS service facilities across the United States, including 15 IHS hospitals, 221 health centers, 34 urban clinics, and 176 Alaska village clinics (Wilson et al., 2011). To help maximize anonymity and expand the study's geographic range of provider representation, IHS headquarters sent a recruitment email to district chief medical officers, who asked clinical directors to forward the message to providers. In all, 145 providers completed questionnaires, and 109 completed the pain assessment questions (Table 1).

Table 1

Demographics for Health Care Providers Working in Indian Health Service Facilities, Responding to an Online Clinical Case Vignette Questionnaire on Provider Assessment and Treatment of Chronic Pain

| | Racially non-concordant | | Racially concordant | | Total | |
|--------------------------------|-------------------------|------|---------------------|------|----------|------|
| | <i>n</i> | % | <i>n</i> | % | <i>N</i> | % |
| Medical Provider Status | | | | | | |
| Physician's assistant | 4 | 3.6 | 2 | 6.1 | 6 | 4.1 |
| Nurse practitioner | 19 | 17.0 | 2 | 6.1 | 21 | 14.5 |
| Medical doctor (MD, DO) | 82 | 73.2 | 25 | 75.8 | 107 | 73.8 |
| Student, other | 7 | 6.3 | 4 | 12.1 | 11 | 7.6 |
| Gender | | | | | | |
| Male | 54 | 48.2 | 11 | 33.3 | 65 | 44.8 |
| Female | 58 | 51.8 | 22 | 66.7 | 80 | 55.2 |
| Race/Ethnicity | | | | | | |
| Hispanic/Latino | 6 | 5.4 | — | — | 6 | 4.1 |
| East Indian | 2 | 1.8 | — | — | 2 | 1.4 |
| Black | 1 | 3.6 | — | — | 4 | 2.8 |

| | | | | | | |
|-----------------------|----|------|----|-------|----|------|
| Non-Hispanic White | 52 | 75 | — | — | 84 | 57.9 |
| Asian, Pacific Island | 4 | 5.4 | — | — | 6 | 4.1 |
| Other | 6 | 8.9 | — | — | 10 | 6.9 |
| American Indian | — | — | 33 | 100.0 | 33 | 22.8 |
| Age | | | | | | |
| 18–30 years | 3 | 2.7 | 4 | 12.1 | 7 | 4.8 |
| 31–40 years | 19 | 17.0 | 11 | 33.3 | 30 | 20.7 |
| 41–50 years | 36 | 32.1 | 7 | 21.2 | 43 | 29.7 |
| 51–60 years | 38 | 33.9 | 11 | 33.3 | 49 | 33.8 |
| 61–75 years | 16 | 14.3 | 0 | 0.0 | 16 | 11.0 |

Data Collection

Instruments were available online through a university-affiliated Qualtrics software site (Qualtrics Labs, Provo, UT), and all participant responses were anonymous. Practicing providers selected the embedded link leading to the questionnaire website. On average, participation required 8 to 15 minutes to complete, simulating the average time allocated for patient–provider encounters (Mechanic, McAlpine, & Rosenthal, 2001). After giving informed consent, providers were randomly assigned to the vignette with either high or low ethnic saliency (see Table 2).

Table 2

Assignment of Healthcare Providers to Online Clinical Case Vignettes for an Indigenous Patient

| Racial concordance | | | |
|---------------------------|-----------------------|-------------------|--------------------|
| Ethnic saliency | Non-Indigenous | Indigenous | Total N (%) |
| | <i>n</i> | <i>n</i> | |
| Low | 36 | 11 | 47 (43.1) |
| High | 49 | 13 | 62 (56.9) |
| Total N (%) | 85 (78.0%) | 24 (22.0%) | 109 (100.0) |

Participants completed a demographic questionnaire, including racial self-identification; viewed one of two randomly generated “Indigenous patient” clinical case vignettes; and completed a pain assessment scale for the patient and pharmacological medical decisions that exceed the scope of this paper. Participant incentive was a \$1 donation to a scholarship fund for each completed questionnaire.

Outcome measures.

The outcome measure was the providers' perception of patient pain on an 11-point visual analogue scale (VAS) ranging from 0, *no pain*, to 10, *most severe pain*, as is commonly used to quantify patient pain levels in medical clinics (Chibnall, Tait, & Ross, 1997; Zalon, 1993). The Cronbach's alpha for a VAS is .83 and has high internal (Guyatt, Townsend, Berman, & Keller, 1987) and external validity and reliability (Carlsson, 1983). Provider perceptions of patient pain on the VAS were measured by comparing providers' ratings of the patient's *present* pain with the patient's self-report.

Primary predictors.

Patient-provider racial concordance and ethnic salience were the study's primary predictors. The self-identified Indigenous providers were considered *racially concordant*, with all other providers being considered *non-concordant*. *Patient Indigenous ethnic salience* referred to the varying vignette conditions for the Indigenous patient; that is, *high: Aki Turtlebear* or *low: Bob Smith*.

Data Analysis

A 2×2 analysis of variance (ANOVA), between-subjects design, was conducted. Patient-provider racial concordance was the first independent variable. Patient Indigenous ethnic salience, the second independent variable, was determined by randomly assigning providers to the vignette with either high or low Indigenous ethnic salience. Independent-variable main and interaction effects were assessed on the outcome measure of providers' VAS ratings of the patient's pain.

Results

Pain Rating (Providers' Perceptions of the Patient's Pain VAS)

The providers rated the patient's pain at a grand mean of 4.32 (1.54 *SD*). This result demonstrated that all providers, regardless of race or patient ethnic salience, rated the patient's pain on the VAS lower than the patient's *current* self-rating of 9 out of 10. The racially concordant, or Indigenous, providers showed no significant difference from the non-Indigenous providers on their ratings of either Aki Turtlebear or Bob Smith. Furthermore, the providers did not significantly differ in pain assessment for Aki Turtlebear or Bob Smith, regardless of patient ethnic salience. However, as seen in Table 3 and Figure 3, the interactional effect between racial concordance and ethnic salience on provider pain assessment was significant ($F = 4.56$ for a moderate effect and $\eta^2 = 0.04$ nearing a medium effect size [Cohen, 1977]). Racially concordant (Indigenous) providers rated the high ethnic salience patient, Aki Turtlebear's, pain higher than that of the low ethnic salience patient, Bob Smith.

Table 3

Healthcare Providers' Pain Ratings on a Visual Analogue Scale (VAS) for an Indigenous Patient Presenting With Pain: 2 × 2 Interaction Effect for Racial Concordance and Patient Ethnic Saliency

| Source | Partial SS | df | MS | F | Prob > F |
|--------------------------------------|------------|----|-------|-------------------|----------|
| Model | 15.80 | 3 | 5.27 | 2.3 | .08 |
| Racial Concordance | 3.65 | 1 | 3.65 | 1.59 | .21 |
| Ethnic Saliency | 2.23 | 1 | 2.23 | 0.97 | .33 |
| Racial Concordance × Ethnic Saliency | 10.45 | 1 | 10.45 | 4.56 ^a | .04 |
| Residual | 219.96 | 96 | 2.29 | | |
| Total | 235.76 | 99 | 2.38 | | |

^aCritical $F = 2.70$, $N = 96$. Total variance accounted for $\omega^2 = 0.03$; $\eta^2 = 0.04$ nearing a medium effect size (Cohen, 1977)

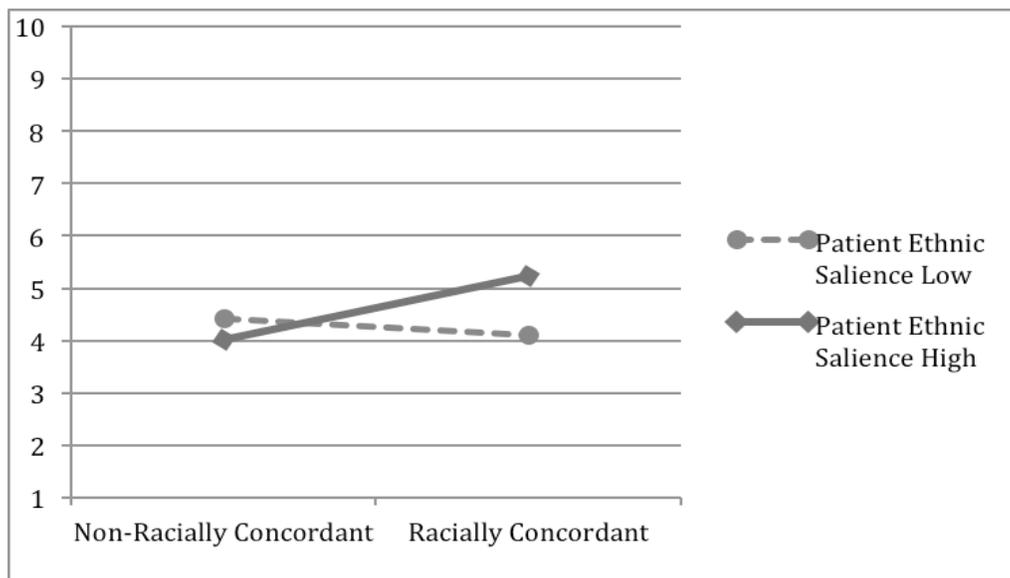


Figure 3.

Healthcare providers' pain assessment for an online clinical vignette for an Indigenous patient presenting with pain: interaction effect for racial concordance and patient ethnic saliency

Discussion

Due to historical trauma and ongoing oppression and marginalization, Indigenous populations experience higher levels of pain than other populations, consequently elevating the need for effective pain care (Jimenez et al., 2011). This is the first known study to examine the relationship between healthcare provider racial concordance and patient ethnic saliency in pain care, particularly among U.S. Indigenous patients. Healthcare providers often rely on well-informed methods, such as the VAS pain scales, to make quick clinical decisions and ensure high-quality care for patients of all races. Our findings imply that shared race and the degree to

which a patient appears Indigenous, or patient ethnic saliency, does not appear to affect pain assessment alone. Overall, all providers ranked the Indigenous patient's pain lower than the patient's VAS. This finding suggests that Indigenous patients' self-reported pain may be discounted by providers, regardless of the provider's race and patient's ethnic saliency in the exam room. However, when the provider and patient are both Indigenous, providers may be more likely to perceive highly identifiable Indigenous patients' pain as more congruent with their pain report, as opposed to patients who may be perceived as belonging to another racial/ethnic group(s). Our findings support the relationship-centered decision-making framework in that providers may vary in their assessment of severe pain based on provider-perceived similarities, as suggested by other researchers (Burgess et al., 2004; Burgess et al., 2006; Tait et al., 2009). As guided by the relationship-centered decision-making framework, our findings suggest that a provider's tendency to underrate a patient's pain may be influenced by unconscious bias, which has been seen to negatively affect quality of care. Hence in order to provide unbiased, effective pain care, providers must consider the historical and cultural variables that influence pain care decision-making.

Historical Systemic Variables

Providing culturally appropriate pain care to Indigenous persons may be impeded by historical and present cultural barriers in the healthcare system. During the 19th century Indigenous healing methods were deemed illegal and Western medicinal treatment was used as a tool of assimilation, thereby increasing mistrust and poor patient-provider relationships (Warne & Frizzell, 2014). Throughout the years Indigenous healthcare has vastly improved and is often administered through or in partnership with tribal entities seeking to increase culturally appropriate care. However, cultural barriers may still exist between present Indigenous health beliefs and Western medicine approaches (Warne & Frizzell, 2014).

Culturally Bound Variables

Because Indigenous and Western cultural beliefs differ, providers may have difficulty in assessing Indigenous cultural expressions of pain and providing culturally appropriate treatment. Several Indigenous health frameworks stress the importance of relational aspects in healing, including respect, connection, trust, and spirituality (Cross, 2003; Hovey, Delormier, & McComber, 2014; Lowe & Struthers, 2001). First, Indigenous traditional healing practices often emphasize collective, holistic approaches for healing mind, body, and spiritual pain, which may differ from Western medicine that often focuses on the individual and physical aspects alone (Struthers, Eschiti, & Patchell, 2004). Additionally Indigenous patients may not express high ratings on a pain scale if they believe pain is a natural part of life (Sobralke & Katz, 2005). As a result, providers may lower their pain ratings for such patients. This thereby lowers the providers' perceived need for treatment. Second, Indigenous verbal descriptions of pain symptoms (e.g., using metaphors referring to relationships between objects in the environment) may differ from descriptions typical of Western medicine, (Gahlinger, 2006). This cultural expression demonstrates the Indigenous patient's interconnectedness with the world, which does not easily fit into a linear pain scale like the VAS. Thus, Indigenous patients' pain may go undetected, be misunderstood, or be underrated (Gahlinger, 2006). When an Indigenous person's pain report is not understood or trusted by their provider, both the provider's and patient's perception and trust of one another are likely to suffer. Providers must remain aware of these differences in culturally bound pain expressions when making treatment plans. Providers may reduce barriers in pain assessment and build their healing relationship if they inquire about

cultural healing beliefs and practices and consider the influence of pain on the mind, body, and spirit.

Implications for Pain Care Decision-Making

Pain assessment remains of high importance because it determines medical decision-making for pain care, including whether or not a provider prescribes analgesic medications (Bartfield, Salluzzo, Raccio-Robak, Funk, & Verdile, 1997) or makes referrals. However, the more a provider trusts a patient and the reported pain level, the more she or he may bridge cultural differences and empathize, which has been argued to moderate potential biases in provider pain assessments (Drwecki, Moore, Ward, & Prkachin, 2011; Tait et al., 2009). Some researchers have promoted building *cultural empathy* to improve healthcare, which involves drawing from knowledge about the patient and his/her culture and building skills to remain aware of cultural differences in health beliefs, communication regarding health, and expectations for care. All the while, the provider focuses on becoming empathetic to a patient in order to bridge cross-cultural differences to provide effective treatment (Dyche & Zayas, 2001). Through more research among other tribal groups and healthcare providers, effective pain care strategies can be identified.

Limitations

Several limitations existed within this study. First, the online case vignette design may lack external generalizability to clinical settings given the small sample size. Second, as is common with Internet-based questionnaires, this study used a convenience sample of providers working only with Indigenous patients and having high patient loads. This selection likely decreased response rates and increased the possibility of sampling bias, even though participants were randomly assigned to the vignettes. Third, the results were examined as aggregated data by design; however, regional, tribal, and clinical differences may exist. Last, only providers' self-reported race, not *ethnic identity* and degree of cultural adherence, was measured, which may have influenced the responses. Despite these limitations, this is the first known study investigating the influences of racial concordance and patient ethnic salience on pain assessment among chronic pain patients and among Indigenous patients.

Conclusions

We found that providers' assessment of a patient's pain varied according to *if the provider is Indigenous and* by the patient's ethnic salience. Our findings imply that Indigenous healthcare providers and patient ethnic salience interact and affect providers' assessment of Indigenous patients' pain, perhaps related to unconscious biases. This study informs provider practice by considering the relationship-centered medical decision-making framework and the potential influence of providers' race, potential unconscious biases, and the patient's ethnic salience, which may be uniquely relevant when providers treat Indigenous patients. Given that cross-cultural trainings and educational interventions for healthcare providers can lower occurrences of unconscious bias related to race/ethnicity (Davis, 2009; Edwards, Davies, & Edwards, 2009; Tait et al., 2009), providers require training to build skills to identify, address, and lower unconscious biases. This could then increase effective care for Indigenous patients and other racial ethnic minorities. Hence, future research on other tribal populations, the patient experience, and barriers to the healing relationship is needed to identify mechanisms to reduce pain disparities. Furthermore, awareness of the clinical decision-making complexities introduced

The Healing Relationship in Indigenous Patients' Pain Care: Influences of Racial Concordance and Patient Ethnic Saliency on Healthcare Providers' Pain Assessment • Michelle Johnson-Jennings, Wassim Tarraf, Hector M. González

during time-pressured conditions and by cultural dissimilarity may help mitigate the untoward effects of healthcare disparities among Indigenous populations.

References

- American Medical Association. (1999). *Cultural competence compendium*. Chicago, IL 1999.
- Anderberg, U. M. (1999). Stress kan ge neuroendokina störningar och smarttillstånd. [Stress can induce neuroendocrine disorders and pain]. *Läkartidningen*, 96(49), 5497–5499.
- Bartfield, J. M., Salluzzo, R. F., Raccio-Robak, N., Funk, D. L., & Verdile, V. P. (1997). Physician and patient factors influencing the treatment of low back pain. *Pain*, 73(2), 209–211.
- Bernabei, R., Gambassi, G., Lapane, K., Landi, F., Gatsonis, C., Dunlop, R., . . . Mor, V. (1998). Management of pain in elderly patients with cancer. *JAMA*, 279(23), 1877–1882. doi:10.1001/jama.279.23.1877
- Bonham, V. L. (2001). Race, ethnicity, and pain treatment: Striving to understand the causes and solutions to the disparities in pain treatment. *Journal of Law Medicine & Ethics*, 29(1), 52–68. doi:10.1111/j.1748-720x.2001.tb00039.x
- Buchwald, D., Goldberg, J., Noonan, C., Beals, J., Manson, S., & Team, A.-S. (2005). Relationship between post-traumatic stress disorder and pain in two American Indian tribes. *Pain Medicine*, 6(1), 72–79. doi:10.1111/j.1526-4637.2005.05005.x
- Burgess, D. J., Crowley-Matoka, M., Phelan, S., Dovidio, J. F., Kerns, R., Roth, C., . . . van Ryn, M. (2008). Patient race and physicians' decisions to prescribe opioids for chronic low back pain. *Social Science & Medicine*, 67(11), 1852–1860. doi:10.1016/j.socscimed.2008.09.009
- Burgess, D. J., Fu, S. S., & van Ryn, M. (2004). Why do providers contribute to disparities and what can be done about it? *Journal of General Internal Medicine*, 19(11), 1154–1159. doi:10.1111/j.1525-1497.2004.30227.x
- Burgess, D. J., Nelson, D. B., Gravelly, A. A., Bair, M. J., Kerns, R. D., Higgins, D. M., . . . Partin, M. R. (2014). Racial differences in prescription of opioid analgesics for chronic noncancer pain in a national sample of veterans. *The Journal of Pain*, 15(4), 447–455. doi:10.1016/j.jpain.2013.12.010
- Burgess, D. J., Phelan, S., Workman, M., Hagel, E., Nelson, D. B., Fu, S. S., . . . van Ryn, M. (2014). The effect of cognitive load and patient race on physicians' decisions to prescribe opioids for chronic low back pain: A randomized trial. *Pain Medicine*, 15(6), 965–974. doi:10.1111/pme.12378

- The Healing Relationship in Indigenous Patients' Pain Care: Influences of Racial Concordance and Patient Ethnic Saliency on Healthcare Providers' Pain Assessment • Michelle Johnson-Jennings, Wassim Tarraf, Hector M. González
- Burgess, D. J., van Ryn, M., Crowley-Matoka, M., & Malat, J. (2006). Understanding the provider contribution to race/ethnicity disparities in pain treatment: Insights from dual process models of stereotyping. *Pain Medicine*, 7(2), 119–134. doi:10.1111/j.1526-4637.2006.00105.x
- Callister, L. (2003). Cultural influences on pain perceptions and behaviors. *Home Health Care Management & Practice*, 15(3), 207–211. doi:10.1177/1084822302250687
- Carlsson, A. M. (1983). Assessment of chronic pain. I. Aspects of the reliability and validity of the visual analogue scale. *Pain*, 16(1), 87–101. doi:10.1016/0304-3959(83)90088-x
- Chae, D. H., & Walters, K. L. (2009). Racial discrimination and racial identity attitudes in relation to self-rated health and physical pain and impairment among two-spirit American Indians/Alaska Natives. *American Journal of Public Health*, 99(Suppl 1), S144–151. doi:10.2105/ajph.2007.126003
- Chibnall, J. T., Tait, R. C., & Ross, L. R. (1997). The effects of medical evidence and pain intensity on medical student judgments of chronic pain patients. *Journal of Behavioral Medicine*, 20(3), 257–271. doi:10.1023/A:1025504827787
- Chou, R., Qaseem, A., Snow, V., Casey, D., Cross, J. T., Shekelle, P., & Owens, D. K. (2007). Diagnosis and treatment of low back pain: A joint clinical practice guideline from the American College of Physicians and the American Pain Society. *Annals of Internal Medicine*, 147(7), 478–491. doi:10.7326/0003-4819-147-7-200710020-00006
- Cintron, A., & Morrison, R. S. (2006). Pain and ethnicity in the United States: A systematic review. *Journal of Palliative Medicine*, 9(6), 1454–1473. doi:10.1089/jpm.2006.9.1454
- Cohen, J. (1977). *Statistical power analysis for the behavioral sciences* (2nd ed.). New York, NY: Academy Press.
- Cone, D. C., Richardson, L. D., Todd, K. H., Betancourt, J. R., & Lowe, R. A. (2003). Health care disparities in emergency medicine. *Academic Emergency Medicine*, 10(11), 1176–1183.
- Cooper, L. A., Beach, M. C., Johnson, R. L., & Inui, T. S. (2006). Delving below the surface: Understanding how race and ethnicity influence relationships in health care. *Journal of General Internal Medicine*, 21(Suppl 1), S21–27. doi:10.1111/j.1525-1497.2006.00305.x
- Cross, T. L. (2003). Culture as a resource for mental health. *Cultural Diversity & Ethnic Minority Psychology*, 9(4), 354–359. doi:10.1037/1099-9809.9.4.354
- Crowley-Matoka, M., Saha, S., Dobscha, S. K., & Burgess, D. J. (2009). Problems of quality and equity in pain management: Exploring the role of biomedical culture. *Pain Medicine*, 10(7), 1312–1324. doi:10.1111/j.1526-4637.2009.00716.x

- The Healing Relationship in Indigenous Patients' Pain Care: Influences of Racial Concordance and Patient Ethnic Saliency on Healthcare Providers' Pain Assessment • Michelle Johnson-Jennings, Wassim Tarraf, Hector M. González
- Davis, M. (2009). A perspective on cultivating clinical empathy. *Complementary Therapies in Clinical Practice, 15*(2), 76–79. doi:10.1016/j.ctcp.2009.01.001
- Deyo, R. A., Mirza, S. K., & Martin, B. I. (2006). Back pain prevalence and visit rates: Estimates from U.S. national surveys, 2002. *Spine, 31*(23), 2724–2727. doi:10.1097/01.brs.0000244618.06877.cd
- Deyo, R. A., Mirza, S. K., Turner, J. A., & Martin, B. I. (2009). Overtreating chronic back pain: Time to back off? *Journal of the American Board of Family Medicine, 22*(1), 62–68. doi:10.3122/jabfm.2009.01.080102
- Drwecki, B. B., Moore, C. F., Ward, S. E., & Prkachin, K. M. (2011). Reducing racial disparities in pain treatment: The role of empathy and perspective-taking. *Pain, 152*(5), 1001–1006. doi:10.1016/j.pain.2010.12.005
- Dyche, L., & Zayas, L. H. (2001). Cross-cultural empathy and training the contemporary psychotherapist. *Clinical Social Work Journal, 29*(3), 245–258. doi:10.1023/A:1010407728614
- Edwards, M., Davies, M., & Edwards, A. (2009). What are the external influences on information exchange and shared decision-making in healthcare consultations: A meta-synthesis of the literature. *Patient Education and Counseling, 75*(1), 37–52. doi:10.1016/j.pec.2008.09.025
- Evans-Campbell, T. (2008). Historical trauma in American Indian/Native Alaska communities: A multilevel framework for exploring impacts on individuals, families, and communities. *Journal of Interpersonal Violence 23*(3), 316–338. doi:10.1177/0886260507312290
- Ezenwa, M. O., & Fleming, M. F. (2012). Racial disparities in pain management in primary care. *Journal of Health Disparities Research and Practice, 5*(3), 12–26.
- Faul, F., Erfelder, E., Lang, A., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*(2), 175–191. doi:10.3758/BF03193146
- Gahlinger, P. M. (2006). Existential pain: Impressions from an American Indian reservation. *Journal of Pain & Palliative Care Pharmacotherapy, 20*(2), 41–52. doi:10.1080/j354v20n02_09
- Gatchel, R. J., Peng, Y. B., Peters, M. L., Fuchs, P. N., & Turk, D. C. (2007). The biopsychosocial approach to chronic pain: Scientific advances and future directions. *Psychological Bulletin, 133*(4), 581–624. doi:10.1037/0033-2909.133.4.581
- Green, C. R., Anderson, K. O., Baker, T. A., Campbell, L. C., Decker, S., Fillingim, R. B., . . . Vallerand, A. H. (2003). The unequal burden of pain: Confronting racial and ethnic disparities in pain. *Pain Medicine, 4*(3), 277–294. doi:10.1046/j.1526-4637.2003.03034.x

- The Healing Relationship in Indigenous Patients' Pain Care: Influences of Racial Concordance and Patient Ethnic Saliency on Healthcare Providers' Pain Assessment • Michelle Johnson-Jennings, Wassim Tarraf, Hector M. González
- Guyatt, G. H., Townsend, M., Berman, L. B., & Keller, J. L. (1987). A comparison of Likert and visual analogue scales for measuring change in function. *Journal of Chronic Diseases*, *40*(12), 1129–1133. doi:10.1016/0021-9681(87)90080-4
- Hovey, R., Delormier, T., & McComber, A. (2014). Social-relational understandings of health and well-being from an Indigenous perspective. *International Journal of Indigenous Health*, *10*(1), 35–54.
- Indian Health Service (IHS). (2013). *Disparities* [Fact sheet]. Retrieved May 6, 2013, from <http://www.ihs.gov/newsroom/factsheets/disparities/>
- Jimenez, N., Garrouette, E., Kundu, A., Morales, L., & Buchwald, D. (2011). A review of the experience, epidemiology, and management of pain among American Indian, Alaska Native, and Aboriginal Canadian peoples. *The Journal of Pain*, *12*(5), 511–522. doi:10.1016/j.jpain.2010.12.002
- Johansson, P., Jacobsen, C., & Buchwald, D. (2006). Perceived discrimination in health care among American Indians/Alaska Natives. *Ethnicity & Disease*, *16*(4), 766–771.
- Johnson-Jennings, M. D., Belcourt, A., Town, M., Walls, M. L., & Walters, K. L. (2014). Racial discrimination's influence on smoking rates among American Indian Alaska Native two-spirit individuals: Does pain play a role? *Journal of Health Care for the Poor and Underserved*, *25*(4), 1667–1678. doi:10.1353/hpu.2014.0193
- King, C. R. (2013). *Unsettling America: The uses of Indianness in the 21st century*. Lanham, MD: Rowman & Littlefield.
- Laveist, T. A., & Nuru-Jeter, A. (2002). Is doctor-patient race concordance associated with greater satisfaction with care? *Journal of Health and Social Behavior*, *43*(3), 296–306. doi:10.2307/3090205
- Lowe, J., & Struthers, R. (2001). A conceptual framework of nursing in Native American culture. *Journal of Nursing Scholarship*, *33*(3), 279–283. doi:10.1111/j.1547-5069.2001.00279.x
- McCarberg, B. H., Nicholson, B. D., Todd, K. H., Palmer, T., & Penles, L. (2008). The impact of pain on quality of life and the unmet needs of pain management: Results from pain sufferers and physicians participating in an Internet survey. *American Journal of Therapeutics*, *15*(4), 312–320. doi:10.1097/mjt.0b013e31818164f2
- Mechanic, D., McAlpine, D. D., & Rosenthal, M. (2001). Are patients' office visits with physicians getting shorter? *The New England Journal of Medicine*, *344*(3), 198–204. doi:10.1056/nejm200101183440307

- The Healing Relationship in Indigenous Patients' Pain Care: Influences of Racial Concordance and Patient Ethnic Saliency on Healthcare Providers' Pain Assessment • Michelle Johnson-Jennings, Wassim Tarraf, Hector M. González
- Meghani, S. H., Brooks, J. M., Gipson-Jones, T., Waite, R., Whitfield-Harris, L., & Deatrck, J. A. (2009). Patient-provider race-concordance: Does it matter in improving minority patients' health outcomes? *Ethnicity & Health, 14*(1), 107–130. doi:10.1080/13557850802227031
- Miner, J., Biros, M. H., Trainor, A., Hubbard, D., & Beltram, M. (2006). Patient and physician perceptions as risk factors for oligoanalgesia: A prospective observational study of the relief of pain in the emergency department. *Academic Emergency Medicine, 13*(2), 140–146.
- Pelusi, J., & Krebs, L. U. (2005). Understanding cancer—understanding the stories of life and living. *Journal of Cancer Education, 20*(Suppl 1), 12–16.
- Phinney, J. S., & Ong, A. D. (2007). Conceptualization and measurement of ethnic identity: Current status and future directions. *Journal of Counseling Psychology, 54*(3), 271–281. doi:10.1037/0022-0167.54.3.271
- Saha, S., Arbelaez, J. J., & Cooper, L. A. (2003). Patient-physician relationships and racial disparities in the quality of health care. *American Journal of Public Health, 93*(10), 1713–1719. doi:10.2105/ajph.93.10.1713
- Saha, S., Komaromy, M., Koepsell, T. D., & Bindman, A. B. (1999). Patient-physician racial concordance and the perceived quality and use of health care. *Archives of Internal Medicine, 159*(9), 997–1004. doi:10.1001/archinte.159.9.997
- Smedley, B. D., Stith, A. Y., & Nelson, A. R. (Eds.) (2003). *Unequal treatment: Confronting racial and ethnic disparities in health care*. Institute of Medicine of the National Academies. Retrieved from The National Academies Press website: <http://www.nap.edu/openbook.php?isbn=030908265X>
- Sobralse, M., & Katz, J. (2005). Culturally competent care of patients with acute chest pain. *Journal of the American Academy of Nurse Practitioners, 17*(9), 342–349. doi:10.1111/j.1745-7599.2005.00061.x
- Sotero, M. M. (2006). A conceptual model of historical trauma: Implications for public health practice and research. *Journal of Health Disparities Research and Practice, 1*(1), 93–106.
- Staton, L. J., Panda, M., Chen, I., Genao, I., Kurz, J., Pasanen, M., . . . Cykert, S. (2007). When race matters: Disagreement in pain perception between patients and their physicians in primary care. *Journal of the National Medical Association, 99*(5), 532–538.
- Street, R. L., O'Malley, K. J., Cooper, L. A., & Haidet, P. (2008). Understanding concordance in patient-physician relationships: Personal and ethnic dimensions of shared identity. *The Annals of Family Medicine, 6*(3), 198–205. doi:10.1370/afm.821

The Healing Relationship in Indigenous Patients' Pain Care: Influences of Racial Concordance and Patient Ethnic Saliency on Healthcare Providers' Pain Assessment • Michelle Johnson-Jennings, Wassim Tarraf, Hector M. González

- Struthers, R., Eschiti, V. S., & Patchell, B. (2004). Traditional indigenous healing: Part I. *Complementary Therapies in Nursing and Midwifery Journal*, 10(3), 141–149. doi:10.1016/j.ctnm.2004.05.001
- Struthers, R., Savik, K., & Hodge, F. S. (2004). American Indian women and cardiovascular disease: Response behaviors to chest pain. *Journal of Cardiovascular Nursing*, 19(3), 158–163. doi:10.1097/00005082-200405000-00003
- Tait, R. C., Chibnall, J. T., & Kalauokalani, D. (2009). Provider judgments of patients in pain: Seeking symptom certainty. *Pain Medicine*, 10(1), 11–34. doi:10.1111/j.1526-4637.2008.00527.x
- U.S. Commission on Civil Rights. (2004). *Broken promises: Evaluating the Native American health care system*. Retrieved from <http://www.usccr.gov/pubs/nahealth/nabroken.pdf>
- van Ryn, M., & Burke, J. (2000). The effect of patient race and socio-economic status on physicians' perceptions of patients. *Social Science & Medicine*, 50(6), 813–828. doi:10.1016/s0277-9536(99)00338-x
- Walters, K., Mohammed, S., Evans-Campbell, T., Beltran, R., Chae, D., & Duran, B. (2013). Bodies don't just tell stories, they tell histories. *Du Bois Review*, 8(1), 179–189. doi:10.1017/s1742058x1100018x
- Warne, D., & Frizzell, L. B. (2014). American Indian health policy: Historical trends and contemporary issues. *American Journal of Public Health*, 104(Suppl 3), S263–267. doi:10.2105/ajph.2013.301682
- Wilson, R. T., Giroux, J., Kasicky, K. R., Fatupaito, B. H., Wood, E. C., Crichlow, R., . . . Cobb, N. (2011). Breast and cervical cancer screening patterns among American Indian women at IHS clinics in Montana and Wyoming. *Public Health Reports*, 126(6), 806–815.
- Yellow Horse Brave Heart, M. (2003). The historical trauma response among Natives and its relationship with substance abuse: A Lakota illustration. *Journal of Psychoactive Drugs*, 35(1), 7–13. doi:10.1080/02791072.2003.10399988
- Zalon, M. L. (1993). Nurses' assessment of postoperative patients' pain. *Pain*, 54(3), 329–334. doi:10.1016/0304-3959(93)90033-L