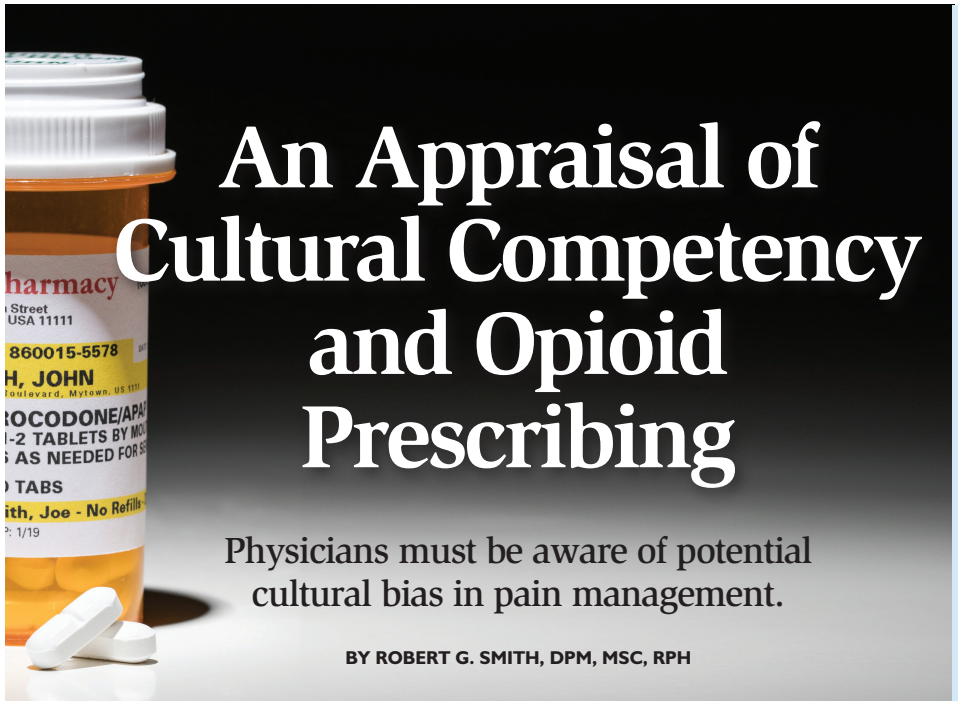

An Appraisal of Cultural Competency and Opioid Prescribing

Physicians must be aware of potential cultural bias in pain management.

BY ROBERT G. SMITH, DPM, MSC, RPH

Learning Objectives

1) Recognize published clinically-based evidence related to the paradigm shift associated with cultural competency and prescribing opioids.

2) Recognize problematic behaviors and biases towards pain assessment within the context of race.

3) Formulate mitigating strategies to assist clinicians with cultural appreciation and prescribing opioid analgesics.

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Introduction

Academically as well as anecdotally, podiatric physicians have accepted that pain is considered a major clinical, social, and economic problem in communities around the world. The experience of pain, however, is not uniformly distributed across the population. Pain is perceived by the patient; it can only be reported by them and can be challenging to describe. The International Association for the Study of Pain defines "pain" as an unpleasant sensory and emotional experience associated with actual or potential tissue damage.[1] Moreover, the American Academy of Pain Medicine describes pain to be typically classified as 'acute' where 'a one-to-one relationship exists between injury and pain; frequently, it is short-lived and self-limiting'.[2] It becomes persistent and intractable if the underlying disease or injury is prolonged or incurable, or if its activation is unavoidable, i.e., when the pain caused either by movement or weight-bearing in injuries of the spine, or in diseases such as arthritis, it is classified as chronic.[2]

Givler, et al. assert that putting pain into words requires a degree of self-awareness and is colored by the cultural backgrounds of patients.[3] Henscke, et al. have described the incidence, prevalence, and economic burden of painful conditions in children, adolescents, and adults.[4] The foundation of their investigation is grounded in electronic searches of the *MEDLINE* and *Embase* databases for articles published between January 1, 2000 through August 1, 2014, using the keywords "pain," "epide-

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miology," "burden," "prevalence," and "incidence."[4]

The authors offer that differences in the methodology and conduct of epidemiological studies make it difficult to provide precise estimates of prevalence and incidence of pain,[4] the reason behind which may lie in cultural differences between the investigator and interpreter. On the other hand, they offer certain relative salient points—the authors state that the burden of pain is unquestionably large and improved concepts and methods need to be used to study pain from a population demographic perspective. They also postulate that there is a need for the development of pain prevention and management strategies.[4]

It has been proclaimed throughout American history that race, ethnicity, and class have influenced the public's opinion of drug use and addiction. Damiescu, et al. stress that to understand the current opioid crisis, a multifactorial approach that links approaches from pharmaceutical biology to a cultural and social perspective is necessary.[5] Moreover, they emphasize that to counteract the present crisis, it is important to consider the different perspectives of physicians, pharmaceutical companies, patients, and their relatives, as well as society at large.[5]

The seasoned astute prescriber will remember the national push for identification of pain as a primary medical disorder in 1996 and the approval of oxycodone hydrochloride, popularly known by its brand name OxyContin™, as a 'minimally addictive pain reliever' by the Food and Drug Administration (FDA) in the same year.[6-10] On July 17, 2020, Mann, relying on public data to include up-to-date government studies and new reports in medical literature, revealed that prescriptions for half of all Americans for at least one opioid are being written each year. Patients are still receiving more than twice the volume of opioids than what is considered normal before the prescribing boom began in the late 1990s.[6,7,10,11]

Given that opioids are currently being prescribed across the United States, a need arises to examine if there exist variations in pain assessment, medication treatment plans of pain management, and the opioid use disorder suffered by racial and ethnic minorities as well as women. There is also a need to investigate if this variation has a negative health outcome associated with these differences. This narrative review will first entertain the concept of cultural competency specific to prescribing medications.

Secondly, published data centered around both pain assessment and pain management treatment within the context of racial and cultural biases will be offered and examined. Lastly, tools of proactive initiatives will be offered to limit racial and/or cultural bias during this ongoing opioid epidemic.

A paramount accepted fundamental is that safe, rational, and appropriate prescription requires clear communication with attention to both verbal and non-verbal communication.

Culture and Pain

A useful and practical definition of culture is that it comprises the values, beliefs, rules of behavior, and the lifestyle practices of a particular group of people. This definition establishes the inference that culture, health, and illness are intricately linked. Cultural competence results in the ability to understand, communicate, and effectively interact with diverse populations. A universally accepted fundamental is that safe, rational, and appropriate analgesic medication prescriptions require clear communication with attention to both verbal as well as nonverbal communication.[12] Given that communication patterns vary across cultures, podiatric physicians need to individualize their approach when discussing therapeutic treatment plans with diverse patients.

Furthermore, an accepted concept holds that the cultural diversity of the populations extends beyond racial and ethnic minorities. In the United States, race has been categorized by placing people into groups based on their skin or eye color and/or hair type and is often used when conducting health research. Accumulated data from health sciences research has reported on racial differences in pain perception by healthcare providers and the process of prescribing opioids, which has facilitated discussions of cultural competence. The report will also include the concept of race as a consideration taken into view by the podiatric physician while prescribing pain medication, especially opioid products.

In the past, race was most associated with biology while ethnicity was associated with culture. Ethnicity differs from race in that it includes more than a biological identification. This biological variation in health and illness may be influenced by race, ethnicity, or environmental factors.[12]

Although genetically all humans are very much alike, research on drug responses has demonstrated that pharmacodynamics and pharmacokinetics can differ across ethnic groups and races. Ethnopharmacology focuses on the effects race and ethnicity have on the responses to medication, drug absorption, metabolism, distribution, and excretion.[12]

Prescribing medication in a manner consistent with cultural practices can facilitate proper adherence to the advised dosage. Further, to facilitate stricter adherence, it must be understood that the use of prescription medication and the acceptability of a type of medication is influenced by the patient's background and cultural beliefs.[12]

Both cultural and biological variations are articulated in a more precise way by using science. Pharmacogenomics analyzes how the genetic makeup of a patient affects their response to medication.[12] It evalu-

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ates the influence of acquired and inherited genetic variations on drug response in individual patients by correlating gene expression or single-nucleotide polymorphisms with drug absorption, distribution, metabolism, and elimination It also gauges the effect of the medication through a drug's biological target.[13]

The FDA today includes pharmacogenomic information on the labels of around 200 medications.[13] Adams, et al. published relative pharmacogenomic data centered on elevated uric acid, which is also of interest to a foot and ankle specialist.[14] They relayed that allopurinol is commonly prescribed to lower uric acid levels and is also believed to be one of the leading causes of drug-related severe cutaneous adverse reactions (SCARs), which includes risks of both toxic epidermal necrolysis and Steven–Johnson syndrome risk. SCARs have been associated with certain variants of the HLA-B gene from the MHClocus.[13-15]

Patients who carry at least one HLAB*58:01 allele are placed at a higher risk for SCARs due to allopurinol.[15] This allele was the first discovered in East Asian populations, and has since been detected and associated with SCARs from allopurinol in European populations as well.[16] The Clinical Pharmacogenetics Implementation Consortium (CPIC) guidelines for allopurinol, therefore, recommend against its use in patients who carry at least one HLA-B*58:01 allele.[17,18]

Assessment Bias and Pain

Comparisons of patient and physician pain ratings typically indicate that physicians are likely to underestimate the individual's reported intensity levels for both acute as well as chronic pain.[19,20] When this occurs, the extent of underestimation is greater for patients belonging to a racial/ethnic minority than for non-Hispanic whites. In a carefully designed study conducted in primary care practices, Staton, et al. observed that physicians underestimated the pain scores of African American patients by greater than 2 points on an 11-point numeric pain rating scale 47% of the time. The value for the same variable was only 33.5% for non-African Americans ($p < 0.0005$).

In contrast, overestimation of the pain ratings by physicians was twice as likely for non-African Americans than for African Americans.[21] The major contribution by physicians to such disparities appears to reflect limited awareness of their own cultural beliefs and stereotypes regarding pain, individuals belonging to minorities, as well as the use of narcotic analgesics.

Mossey, in their review, asserts that the evidence is quite consistent; inequities in the quality of pain care are observed more in racial/ethnic minority patients versus non-Hispanic whites.[22] The most consistent inequality, seen across different pain types and treatment locations, is the prescription of less effective analgesics to individuals from a racial/ethnic minority. Rather than opioid analgesics, non-steroidal anti-inflammatory agents or opioid preparations of lower doses are more likely to be prescribed to African Americans, Hispanics, and Asians than to whites even though the pain severity levels are comparable.[22] That such prescribing differences are evident in the emergency room as well as in the post-operative setting and affect both children and adults is particularly disturbing since opioid medications are administered over a relatively short time period and in a controlled setting where there is no immediate risk of abuse or diversion.[22]

Studies reveal that the greater likelihood that an individual from a racial/ethnic minority will experience considerable burden, a diminished quality of life, and a complicated clinical presentation if acute pain becomes chronic should strongly motivate both the patient and the physician to achieve optimum pain management. The tendency for individuals from a racial/ethnic minority to under-report pain levels due to feelings of intimidation because of the perceived higher social status of the physician or the culturally motivated pressure to appear 'stoic'[23,24] appears to be their main contribution to inadequate or inequitable pain management.[25] These studies advocate efforts to encourage individuals to adopt more empowered attitudes and behaviors when seeking pain care is warranted.[23-25]

Patients who carry at least one HLAB*58:01 allele are placed at a higher risk for SCARs from allopurinol.

Racial and ethnic disparities plague Black, Indigenous, and People of Color (BIPOC) patients suffering from pain. Disparities in pain assessment and treatment stem from both the personal nature of pain experiences and provider-related racial biases regarding pain in BIPOC patients, which can lead to under-treatment of pain.[26,27] Furthermore, failure to account for the significance of cultural context in patient behavior cues and pain coping skills by clinicians hampers assessment and treatment decisions.[22]

Hoffman, et al. conducted two comparative studies to investigate racial biases and false beliefs about biological differences between blacks and whites in pain assessment and treatment recommendations.[27] The first study established that individuals without medical training endorse beliefs about biological differences between blacks and whites and demonstrate that these beliefs are related to racial biases in pain perception.[27] They recruited 121 participants, 92 of whom were white, born in the United States, and native English speakers. The participants reported the amount of pain they would feel across 18 scenarios and rated them on a Likert scale.

The participants further rated the extent to which 15 biological differences between blacks and whites are true or untrue on a six-point scale.

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Hoffman, et al. conducted all the analyses using continuous measures of false beliefs and pain ratings. Examples of false beliefs included in their study included: blacks age slowly, blacks' nerve endings are less sensitive than whites, blacks' skin is thicker than whites, and blacks have stronger and denser bones than whites. They then regressed these ratings by targeting race, false beliefs, age, gender, and self-ratings of pain and their interactions with the same.[27]

For their second study, Hoffman, et al. collected data from a total of 418 medical students and residents. After consenting, the participants read two mock medical cases about a black and a white patient and made pain ratings (scale: 0 = no pain to 10 = worst possible pain) and medication recommendations (dummy coded for accuracy: 1 = accurate, 0 = inaccurate) for each. They also completed the same measure of beliefs about biological differences between blacks and whites as in study 1.

About 50% of this group reported that at least one of the false belief items was possible, probable, or true. These percentages are noticeably lower compared to those in study 1 (50% vs. 73%); regardless, given that this sample comprised of medical students and residents, the percentages for false beliefs are surprisingly high. This sheds light on an unexplored source of racial bias in pain assessment and pain treatment recommendations within a relevant population, in a context where racial disparities are well documented. Moreover, it demonstrates that perceptions and beliefs about biological differences between blacks and whites date back to slavery and are associated with the perception that black people feel less pain than whites, resulting in inadequate treatment recommendations for black patients' pain.[27]

Tamayo-Sarver, et al. published their analysis of Black, Latino, and White patients from 1997 to 1999 in the National Hospital Ambulatory Medical Care Surveys to compare prescriptions of any analgesics and opioid analgesics by race and ethnicity.[28] They deduced that physicians were less likely to prescribe opioids to blacks, with a great disparity observed in the cases of migraines and conditions with fewer objective findings.[28]

Secondly, Goyal, et al. reported results supporting the findings of Tamayo-Sarver, et al. They suggested from their cross-sectional study that appendicitis pain is undertreated in pediatrics and that racial disparities with respect to analgesia administration exist.[29] Their results showed that black children are less likely to receive any pain medication for moderate pain and are also less likely to receive opioids for severe pain, suggesting a different threshold for treatment.[29]

Romanelli, et al. examined racial and ethnic differences in opioid prescribing and dosing for long bone fractures at emergency department discharges.

Finally, Romanelli, et al. examined racial and ethnic differences in opioid prescribing and dosing for long bone fractures in emergency departments and at the time of discharge using morphine milligram equivalents, which allows for a true understanding of opioid dosing.[30] Differences in opioid dosing were measured as morphine milligram equivalents by race/ethnicity using regression modelling with statistical adjustment for patient, fracture, and prescriber characteristics.[30]

They examined a total of 11,576 patients with long bone fractures. The study population was 64.4% non-Hispanic Whites, while 16.4%, 7.3%, 5.8%, and 5.1%, respectively, were Hispanic, Asian, Black, and of other or unknown race; out of the total, 65.6% received an opioid at discharge.[30] Racial and ethnic minority groups with long bone fractures received similar frequencies of opioid prescriptions during discharge with a small potency difference.[30]

Resolution Measures to Empower Cultural Competency

For this review, Table 1 was created and adapted from Givler, et al. to empower the podiatric physician to appreciate and be sensitive to how culturally diverse populations respond to pain stimuli.[3] Training initiatives are paramount as effective cultural sensitivity training in the healthcare sciences seems to be infrequent. Social advocates have called for the inclusion of anti-racism training within medical school curricula,[31-33] since the education of healthcare students about issues such as implicit biases, health disparities, and cultural competence has evidently been insufficient.

Aggressive proactive measures should be taken to increase the number of BIPOC healthcare professionals engaged in pain management. Given the data indicating that physician–patient race/ethnicity concordance increases patient trust and adherence,[34-37] a national effort to produce more BIPOC physicians in primary care and medical specialties is essential as our nation's population continues to become increasingly diverse.

Given that the concerns regarding adherence associated with opioid analgesics continue to be prominent, such efforts become even more imperative in pain medicine management. Accordingly, consideration should be given to incentivize both undergraduate medical students as well as residency and fellowship training programs to increase the ranks of BIPOC trainees. Such incentives include direct financial incentives, scholarships, educational loans with service requirements, loan repayment programs, and service-option educational loans.[38]

Incentivizing physicians regarding where to practice, however, has proven easier than incentivizing them regarding what to practice.[38]

Consequently, calls for a more direct financial benefit are being

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made[39], with Ahmed and Carmody recently disclosing that providing financial compensation or expanding loan forgiveness programs for physicians entering practice in the most-needed specialties or areas would create a powerful incentive to encourage doctors to work where there is greatest societal need.[40] Given the relative shortage of BIPOC pain physicians, such direct financial incentivization for BIPOC physicians to enter pain medicine training programs will be imperative as a step toward reducing systemic racism in pain medicine and improving the care that patients receive.

Correspondingly, BIPOC nurses, physician assistants, physical therapists, podiatric physicians, students in these fields, as well as all others who treat chronic pain should also be directly incentivized to level the practice arena. More needs to be done and courses covering systemic racism and strategies for overcoming racial/ethnic bias must be provided to both undergraduate and graduate healthcare students.

TABLE 1
Observe Responses to Pain per an Individual's Culture

Culture	Pain Belief
African-American	May avoid the use of pain medicine due to fear of addiction
Amish	Very high pain tolerance
Arab	Very expressive
East Asian	Maybe stoic, look for non-verbal signs
East Indian	Will accept pain medicine for severe pain
Egyptian	Will accept pain medications but require being alert near death
Filipino	Often express as "cold" or "heat"
Ghanaian	Often described as emotional or spiritual
Gypsy Roma	Accepting of pain medicine
Haitian	Accepting of pain medicine
Hispanic	May not complain of pain and may only provide nonverbal clues
Indonesian	May request no pain medicine near death
Iranian	Tend to express pain loudly
Jamaican	Highly variable
Japanese	Maybe very stoic
Kenyan	Usually, they avoid pain medicine
Korean	Maybe stoic. May accept pain medicine as well as herbal
Libyan	May accept pain medicine up until bearing death when they prefer to be alert
Native American	Maybe under-treated and only expressed privately to family or friends
Native Hawaiian	May only accept treatment for severe pain. Nonverbal cues may be the only way to appreciate pain level.
South African	Accepts pain medicine
Vietnamese	Maybe stoic

Adapted from Givler A, Bhatt H, Maani-Fogelman PA. The Importance of Cultural Competence in Pain and Palliative Care. 2020 Dec 1. In: StatPearls [Internet]. Treasure Island (FL): StatPeals

Another strategy is enhancing communication between providers and BIPOC patients by enhanced utilization of culturally competent interpreters when needed. The importance of interpreters having a degree of medical competence as well as bilingual fluency is essential if they are to be effective.[41-44] Doing so can foster trust and engender collaborative treatment decisions, which has been found to be particularly challenging for white providers treating BIPOC patients.[41-44]

Physicians and other pain care professionals should also be aware of the availability of several other useful tools that can aid organizations in bridging language and communication gaps. Such tools, cross-cultural communication with BIPOC patients, include

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the Culturally and Linguistically Appropriate Services (CLAS) standards and the National Institutes of Health's HealthReach program for health information in multiple languages.

Conclusion

This narrative review first entertained the concept of cultural competency specific to prescribing medications like opioids. Secondly, published data centered on both pain assessment and pain management treatment within the context of racial and cultural bias has been offered and examined. Finally, proactive initiatives tools were offered to limit racial and/or cultural bias during this ongoing opioid epidemic and in pain management. **PM**

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Dr. Smith is in private practice in Ormond Beach, FL.

CME EXAMINATION

SEE ANSWER SHEET ON PAGE 157.

1) Patients who carry at least one _____ allele are placed at a higher risk for SCARs from allopurinol.

- **A) HLAC*60:01**
- **B) HLAB*44:09**
- **C) HLAD*56L02**
- **D) HLAB*58:01**

2) Cultural competence results in an ability to perform all the below actions with diverse populations except:

- **A) understand**
- **B) continue with bias beliefs.**
- **C) communicate with**
- **D) effectively interact.**

3) A paramount accepted fundamental is that safe, rational, and appropriate prescription requires clear communication with attention to _____ communication.

- **A) verbal**
- **B) non-verbal**
- **C) commanding**
- **D) both verbal and non-verbal**

4) Hoffman et al. conducted two comparative studies to investigate racial biases in pain assessment and treatment recommendations, and false beliefs about biological differences between blacks and whites between laypersons and _____

- **A) nursing students**
- **B) pharmacy students**
- **C) medical students**
- **D) physical therapy students**

5) Romanelli, et al. examined racial and ethnic differences in opioid prescribing and dosing for _____ at emergency department discharges.

- **A) back injuries**
- **B) headaches**
- **C) soft tissue injuries**
- **D) long bone fractures**

6) In Mossey's investigation, the most consistent inequality seen across different pain types and treatment locations is the prescription of _____ to racial/ethnic minority individuals.

- **A) more effective analgesic**
- **B) less effective analgesic**
- **C) higher doses of opioid per "mme"**
- **D) more frequent prescribed opioids**

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7) Types of incentives to both undergraduate medical students as well as both residency and fellowship training programs to increase the ranks of BIPOC trainees include:

A) direct financial incentives
B) service-requiring scholarships
C) educational loans with service requirements
D) all answers are correct

8) Goyal, et al. reported results supporting the findings of Tamayo-Sarver et al. from their cross-sectional study, suggesting that appendicitis pain is undertreated in _____and that racial disparities with respect to analgesia administration exist.

A) pediatrics
B) elderly
C) mature onset diabetics
D) teenagers

9) The tendency for racial/ethnic minority individuals to underreport pain levels may stem from feelings of intimidation because of the perceived higher social status of the physician or the culturally motivated pressure to appear '_____'.

A) happy
B) elated
C) stoic
D) smiling

10) Another strategy is increasing communication between providers and BIPOC patients by enhancing the utilization of culturally _____ when needed.

A) competent supervisor
B) competent attorney
C) competent surgeon
D) competent interpreters

SEE ANSWER SHEET ON PAGE 157.

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Over, please

ENROLLMENT FORM & ANSWER SHEET *(continued)*

EXAM #9/21
An Appraisal of Cultural Competency and Opioid Prescribing
(Smith)

Circle:

1.	A	B	C	D	6.	A	B	C	D
2.	A	B	C	D	7.	A	B	C	D
3.	A	B	C	D	8.	A	B	C	D
4.	A	B	C	D	9.	A	B	C	D
5.	A	B	C	D	10.	A	B	C	D

Medical Education Lesson Evaluation

Strongly agree [5]	Agree [4]	Neutral [3]	Disagree [2]	Strongly disagree [1]

1) This CME lesson was helpful to my practice ____

2) The educational objectives were accomplished ____

3) I will apply the knowledge I learned from this lesson ____

4) I will makes changes in my practice behavior based on this lesson ____

5) This lesson presented quality information with adequate current references ____

6) What overall grade would you assign this lesson?

A B C D

7) This activity was balanced and free of commercial bias.

Yes _____ No _____

8) What overall grade would you assign to the overall management of this activity?

A B C D

How long did it take you to complete this lesson?

_____hour _____minutes

What topics would you like to see in future CME lessons ? Please list :

_____

_____

_____

_____

_____