

Racial and Ethnic Disparities in Pain Management

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ABSTRACT

Pain is subjective, which makes its management a complicated task. The challenge of medical decision-making associated with pain often requires health care providers to rely heavily on their individual discretion and experience. This often creates an avenue for biases to play a role in the selection of the best available and most appropriate pain management interventions. Therefore, the overall purpose of this review is to summarize the current literature related to racial and ethnic disparities in pain management. Electronic searches of four databases revealed 2,112 articles; however, only six studies met criteria for inclusion in this review. Even when the source of pain is the same, research indicates management may differ between racial or ethnic groups. While the treatment of objectively painful conditions remains relatively constant among races and ethnicities, inequities in pain management become more apparent in the treatment of conditions characterized by only subjective pain indicators. Further disparities were identified in the dosage, dosage reduction, and oversight of opioid analgesics between groups. Inequities in prescribing patterns widen existing healthcare disparities by contributing to undertreatment of pain in ethnic minorities and overtreatment of pain and subsequent risk of opioid abuse in Whites. Health care providers must use a patient-centered and evidence-based approach to combat the ambiguity of clinical decision-making regarding pain. When knowledgeable of appropriate standard of care for pain management, athletic trainers can identify when a patient's pain needs are unmet or when substance abuse interventions may be necessary.

Key Phrases

Public health, clinician-rated outcomes, patient-rated outcomes, professional standards

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CLINICAL PROBLEM AND QUESTION

According to Healthy People 2020, healthcare disparities adversely affect people who encounter substantial systemic obstacles to health based on their racial or ethnic group.¹ Healthcare disparities have been reported across the continuum of care including in the treatment and management of pain.² For example, scholars have noted Black patients receive inadequate treatment for pain conditions as compared to White patients.²⁻⁶ Primary care physicians were reported as being twice as likely to underestimate pain in Black patients as compared to all other ethnicities combined.⁴ Analgesic medications are often a principal component of pain management, and to no surprise, disparities have also been suggested to affect the prescribing patterns of these medications. Black patients have been prescribed pain medications at a lower frequency and a lower dosage than non-Black patients.^{2, 4, 5} A study of analgesic administration by nursing staff in the emergency department (ED) found African Americans received analgesics in 57% of instances and non-Hispanic Whites in 74% of cases, with no significant differences in the amount of pain reported to medical personnel.⁵

Discrepancies exist in the use of analgesic medication to manage pain between racial and ethnic groups; however, the source of inequality in pain management practices cannot be limited to a single cause. Racial disparities in pain management have been attributed to several theoretical approaches of discriminatory practices among health care providers.⁷ First, the application of bias, clinical uncertainty, inaccurate beliefs, or stereotypes contributing to health care behaviors may result in inequitable treatment.⁷

For instance, providers may make assumptions that a Black patient will be noncompliant and therefore fail to prescribe medications that align with the standard of care.^{2, 3} Second, based on stereotypes, physicians may invalidate the experience of pain allowing racial bias to contribute to the undertreatment of pain.^{4, 8, 9} Investigators have determined perceptions of hardship, internalized as strength or toughness, influence perceptions of pain and contribute to racial bias in pain perception.¹⁰ Lastly, many stereotypes of substance use and abuse in ethnic minority groups have been developed secondary to the United States (US) illegal drug epidemic of the 1990s.¹¹ A perceived potential for abuse in non-White minority groups may bias providers not to prescribe analgesic pain relievers to individuals of minoritized groups, despite the fact that non-medical use of prescription opioids is two times greater in the Whites.¹¹ These results further highlight how dominant narratives of the experiences of people of color are built on racial stereotypes and can influence the care patients in marginalized communities receive. While provider bias may have good intention to protect minoritized communities from the use and abuse of opioid analgesics, in addition to causing undertreatment non-White patients, these prescribing patterns may in turn also contribute to higher opioid-related overdose and death rates in White patients.¹¹ Racial inequities are not limited to health care or any specific medical setting, but it is important for athletic trainers to understand the types of experiences their patients have after being referred for further care. We echo the Institute of Medicine's call for all health care providers to actively eradicate contributions to racial and ethnic biases in health care.⁷

As health care providers, the goal of athletic trainers is to provide the best possible care to every patient. We must uphold the first principle of the National Athletic Trainers' Association (NATA) Code of Ethics by practicing with compassion and respecting the rights, well-being,

and dignity of others.¹² Pain is expressed differently based on personal experiences and context; therefore, providing appropriate care in those moments is central to ensuring the primacy of patient care. Advocating for patient needs can begin when athletic trainers develop a better understanding of the experience patients of color may have when seeking pain management. Research suggests that in recent years, the practices of medical professionals regarding pain management are not applied equitably among racial and ethnic groups due to personally held beliefs.¹³ In fact, the standard of care a patient receives is often influenced by their race or ethnicity.^{2, 3, 4, 5} The subjective nature of pain raises the concern of whether race or ethnicity can affect a clinician's approach to managing pain. To our knowledge, there is no published literature discussing the influence of race and ethnicity on pain management in athletic training. Therefore, this review aims to address the following research question: In patients with pain of subjective or objective origin, does race or ethnicity affect the prescription of analgesic medication?

SEARCH OF THE LITERATURE

Data Sources and Searches

A wide-ranging, electronic search of four individual databases (SPORTDiscus, EBSCOHost, PubMed, PsycINFO) was performed. Boolean terms and phrases included the following: racial bias AND pain perception AND athletes, ethnicity AND pain sensitivity AND athletes, ethnicity AND pain tolerance AND athletes, ethnicity AND pain perception AND athlete, social determinants AND pain perception AND athletes, minority AND pain perception AND athlete, pain perception AND cultural competence (**Table 1**). Additionally, reference lists were searched by hand for relevant articles.

Study Selection

Table 1. Search Terms, Databases, and Number of Articles Retrieved

Search Terms	SPORTDiscus	EBSCOHost	PubMed	PsycINFO	Total
Racial bias AND pain perception AND athletes	1	113	1	1	116
Ethnicity AND pain sensitivity AND athlete	286	8	4	0	298
Ethnicity AND pain tolerance AND athletes	710	5	4	0	719
Ethnicity AND pain perception AND athlete	323	19	4	0	346
Social determinants AND pain perception AND athletes	1	239	15	0	255
Minority AND pain perception AND athlete	192	4	4	0	200
Pain perception AND cultural competence	2	167	7	2	178
Total	1515	555	39	3	2112

Articles were included in this review if they were peer-reviewed and published in English, between 2010 and 2020, and explored pain management in ethnically diverse patients. In attempts to synthesize evidence of high methodological quality, authors aimed to include meta-analyses, systematic reviews, randomized control trials, cohort and cross-sectional studies with satisfactory design, validity, and applicability to patient care. Editorials, commentaries, and studies of non-scientific origin were excluded. Additionally, articles including patients with health conditions outside of those commonly seen in athletic training practice were also omitted.¹⁴ Furthermore, research studies that did not address the question of interest were also excluded in this review.

Succeeding the removal of duplicate articles, both authors completed a dual-step process to classify articles for inclusion. Initially, each author (NAH, SL) screened the title and abstract of each identified article, after which, a meeting was held between both authors to ensure consensus on inclusion criteria. Next, a full-text review of articles was performed by both authors (NAH, SL) followed by a meeting resulting in agreement to further constrain inclusion criteria to pain management articles included within this study. Articles were excluded if consensus on the inclusion criteria was not reached at any point during the selection process.

Assessment of Methodological Quality

The methodological quality of each study was assessed using the National Institutes of Health (NIH) Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies or the NIH Quality Assessment of Systematic Reviews and Meta-Analyses. The NIH Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies contains 14 items, 12 of which were applicable to included studies.¹⁵ Two checklist items, participation rate, and loss to follow-up, were not relevant to the retrospective nature of studies included within this manuscript. Each of the 12 items were eligible to receive a yes, no, not applicable, not reported, or cannot determine rating. Items that fulfilled ‘yes’ criteria were assigned a score of 1 point, while items that fulfilled ‘no’ criteria or that were not reported received 0 points toward a total quality score of 12.¹⁵ Items not applicable to the included study were not counted negatively toward the overall methodological quality score. Likewise, the NIH Quality Assessment of Systematic Reviews and Meta-Analyses is a checklist of 8 items.¹⁵ Each item meeting the quality standard was scored 1 point while those that did not meet the item standard or did not report sufficient information to evaluate item criterion were assigned a score of 0.¹⁵ Cohort or cross-sectional studies were eligible to achieve a maximum score of 12 and systematic reviews or meta-analyses a maximum of 8.¹⁵ For purposes of

comparison, quality assessment scores were weighted by dividing raw scores by the number of applicable items and multiplying by 10. Each study was scored using the NIH Quality Assessment Tools by both authors. Disagreement in scores between authors were resolved through discussion. Weighted scores of 6 or higher were deemed high-quality studies, while weighted scores under 6 were considered low-quality. A rating of good-quality translates into a low risk of bias.

Grade of Recommendation

Recommendations resulting from the conclusions of this manuscript were graded using the Strength of Recommendation Taxonomy (SORT). The SORT was first used to classify the level evidence provided to each individual study.¹⁶ Level 1 evidence is demarcated by good-quality studies such as meta-analyses and systematic reviews which are patient-oriented, while Level 2 evidence is patient-oriented but lacks quality or consistency in findings.¹⁶ Level 3 is used to categorize disease-oriented evidence or evidence derived from case series and studies.¹⁶ After a level of evidence was assigned to each individual study, we used the SORT to provide a weighted grade for the collective strength of evidence supporting each conclusion. Grades of A were reserved for conclusions constructed from Level 1 evidence with consistent results across studies.¹⁶ A grade of B was given to conclusions resulting from studies of Level 2 evidence.¹⁶ Conclusions formulated from Level 3 evidence were given a grade of C. Grade B and C recommendations should be incorporated into clinical practice on an individualized and case-by-case basis.¹⁶

Data Extraction, Analysis, and Synthesis

The study design, participants, sources of pain, outcome measures, interventions, results and conclusions were extracted from all included studies (**Table 2**). Data were analyzed by authors using the NIH quality assessment tools¹⁵ and

SORT¹⁶ based on study content and context relevant to the research question. Data synthesis was expressed using a qualitative synthesis of the context of findings relevant to the research question. Synthesis of medication administration based on patient demographics was grouped by treatment setting and prescribing patterns of analgesic drugs.

SUMMARY OF FINDINGS

Search Results and Study Inclusion

Our preliminary search resulted in a total of 2,112 articles for potential inclusion in this review. Of these articles, there were 1,496 that were identified as duplicates and subsequently excluded. The remaining 561 were screened by title after which 518 were excluded for being irrelevant for the subject of this paper. The abstracts of the remaining for 43 articles were screened by authors for inclusion. After appraising abstracts, an additional 8 articles were excluded for study designs that failed to assess the use of analgesic medication for the management of pain. Therefore, 35 articles persisted to full-text evaluation and data extraction (**Figure 1**). An additional 29 articles were excluded during the data extraction process: 7 studies featured experimental pain; 5 studies did not adequately answer the research question; 5 studies investigated only the assessment of pain; 3 studies focused on linguistic barriers; 2 studies did not report the source of pain; 2 studies did not address pain as an outcome; 2 articles did not report race or ethnicity; 1 article did not provide age range data; 1 article had pain outside the professional scope of athletic training; and 1 study looked at incidence or prevalence/trends. A total of six articles remained from which data was extracted and summarized into findings.¹⁷⁻²²

General Characteristics of Included Studies

This review included one meta-analysis,¹⁸ two studies presenting with cross-sectional designs,^{21,22}

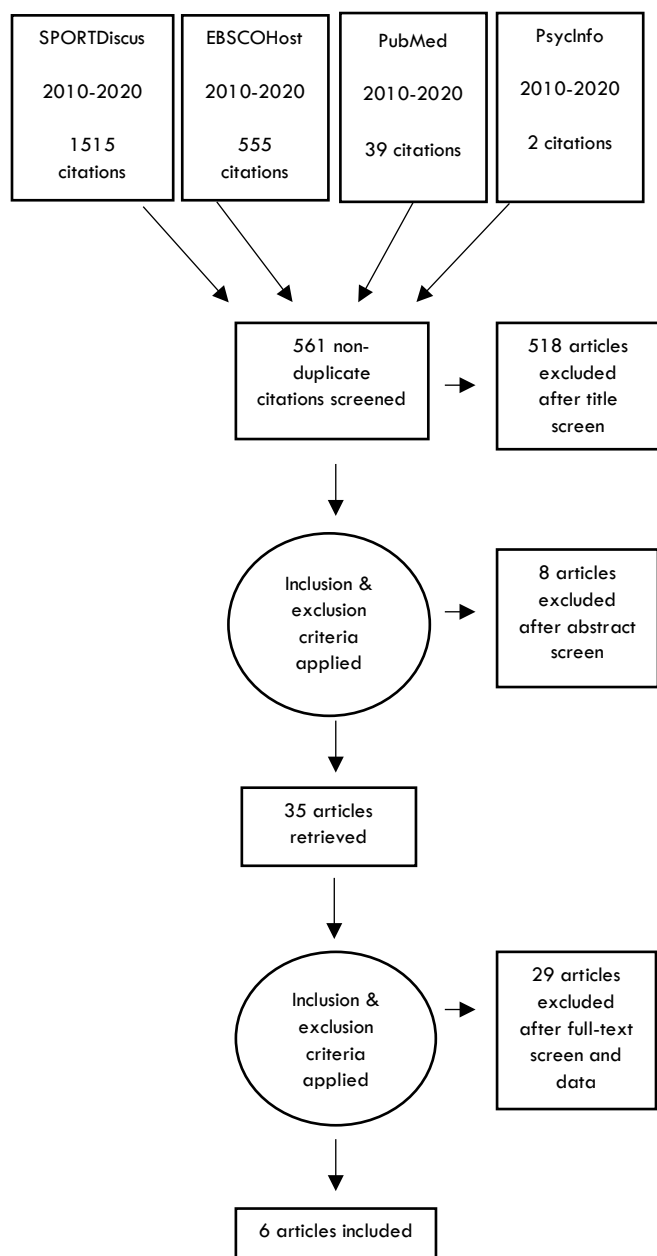


Figure 1. Study Selection Process

and three studies categorized as retrospective cohorts^{17, 19-20} (Table 2). All study participants were adults, age 18 or older, presenting to the ED or an outpatient clinic for pain-related conditions. A majority of the studies were conducted with White, Non-Hispanic, Black/African American, and Hispanic Latinos. Demographic variables

including age, gender, and race/ethnicity were collected from participants across all studies in addition to the source of pain. Pain sources included non-definitive conditions such as toothache, back pain, and abdominal pain, as well as definitive conditions such as long bone fracture, kidney stones, appendicitis, or gallbladder disease.

Furthermore, a range of outcomes were reported within the included studies regarding the prescription and receipt of analgesic drugs. Outcome measures focused on the prescription, administration, and dose reduction of opioid and non-opioid analgesic medications. Opioid medications included, but were not limited to, fentanyl, morphine, oxycodone, hydrocodone, methadone, tramadol with or without acetaminophen, aspirin, and ibuprofen combinations. Likewise, non-opioids involved non-steroidal anti-inflammatory drugs, salicylates, analgesics combinations, anti-migraine agents, and COX-2 inhibitors. Additional outcomes included total dosage of analgesic medication, type of insurance, wait time to see a provider, length of visit in the ED, concurrent benzodiazepine prescription, and total medications overall. A single study¹⁷ investigated the outcome of dose reduction of opioid pain relievers within a two-year follow-up period.

Data Synthesis Summary

In regard to non-opioid medications, no racial or ethnic differences in the prescription of analgesics were found in the ED or ambulatory settings.¹⁸ Specifically, when the use of opioids for the management of pain-related complaints in the ED was investigated, no racial or ethnic disparities were found to exist in prescription or administration for definitive and objectively painful conditions such as toothaches and kidney stones.¹⁹ Additionally, no statistically significant interactions were discovered between race or ethnicity and opioid administration for individuals presenting to the ED with definitive pain confirmed

EVIDENCE-TO-PRACTICE REVIEW

Table 2. Summary of Included Studies (n=6)

Source	Study Design	Participants	Source of Pain	Outcome Measures	Interventions	Results	Key Conclusions
Meghani, Byun, and Gallagher	Meta-analysis	N/A	Traumatic/surgical (bone fracture, postoperative); non-traumatic, non-surgical (migraine, back pain, abdominal pain, osteoarthritis); cancer pain; and mixed pain.	Prescription of any analgesic, opioid analgesic, and non-opioid analgesic medications.	Opioid and non-opioid analgesic medications	No disparities were found in prescription of any analgesia for Hispanics/Latinos, but Hispanics/Latinos were 22% less likely than Whites to receive opioids treatment. Blacks/African Americans were 22% less likely than Whites to receive any analgesia and 29% less likely than Whites to receive opioid treatment for similar painful conditions. No disparities were found in prescription of opioids to Hispanics/Latinos for traumatic/surgical pain, but strong differences were found in prescription of opioids for non-traumatic/nonsurgical pain types for which Hispanics were 30% less likely than Whites to receive opioids. Blacks/African Americans were 34% less likely to be prescribed opioid medication for non-traumatic/nonsurgical pain.	Opioid treatment disparities are present between Hispanic/Latinos and Black/African Americans which present health care safety and quality concerns.
Rasu and Knell	Cross-sectional	Adults (n=690,205,290) aged 18 or older treated for Chronic Problem-Routine or Chronic Problem-Flare up visits in US outpatient settings.	Non-Malignant Chronic Pain (NMCP) of neuropathic, inflammatory, muscle, mechanical/compressive, or general chronic pain origin.	Opioid prescribing; age, gender, ethnicity, pain diagnosis, number of total medications, region of prescribing, payment type, physician	Opioids including morphine, codeine, fentanyl, hydrocodone, hydromorphone, levorphanol, meperidine, methadone, oxycodone, propoxyphene, and tramadol with or without acetaminophen, aspirin, and ibuprofen.	Hispanics and patients with private insurance were less likely to receive opioids for chronic pain management.	Differences exist between those prescribed and not prescribed opioids. Further research is needed on prescription and monitoring of opioids to diminish

Author(s)	Study Design	Population	Conditions	Outcomes	Interventions	Findings	Conclusions
Singhal, Tien, and Hsia	Retrospective cohort	Adults (n=16,428) age 18-65 with non-definitive or definitive pain conditions	Non-definitive conditions including toothache, back pain and abdominal pain as well as definitive conditions involving long-bone fractures and kidney stones.	specialty, and patient relationship with provider. Numerical pain score (0-10); Race/ethnicity (non-Hispanic white, non-Hispanic black, Hispanic and non-Hispanic other); age, sex, type of insurance, location of the ED. Point of care: opioid prescribed at emergency department (ED) discharge, administered in the ED, or both.	Opioids including narcotic analgesics or narcotic analgesic combinations. Non-opioids included nonsteroidal anti-inflammatory agents, salicylates, analgesic combinations, anti-migraine agents, and COX-2 inhibitors.	Non-Hispanic Blacks were less likely to received opioid prescription at ED discharge for back pain and abdominal pain, but not for toothache, fractures, and kidney stones as compared to non-Hispanic Whites.	treatment disparities. Racial/ethnic disparities in opioid prescription and administration exist for most non-definitive conditions but not for definitive conditions. Differential prescription of opioids by race/ethnicity may lead to widening of existing health disparities and the burden of opioid abuse among non-Hispanic whites.
Buonora et. al.	Retrospective cohort	Adults (n=1,097) aged 18 or older prescribed with 3 or more opioid pain relief prescriptions at least 21 days apart with stable dosage.	Non-cancer related pain	Opioid pain relievers (OPR) dose reduction within two years following the end of each patient's baseline period. Reduction was defined as a reduction in daily OPR dose of at least 30% in any 6-month follow-up period relative	Opioid dose or concurrent benzodiazepine use.	Black race and female gender were associated with greater odds of opioid dose reduction.	Clinical decision-making regarding OPR dose reduction may be influenced more by social factors such as race and gender rather than clinical factors such as dosage and concurrent drug use which may indicate actual risk.

Rosenbloom et al.	Retrospective cohort	Patients (n=553) aged 12-55 visiting emergency department (ED)	Appendicitis or gallbladder disease	to baseline. Clinical variables included baseline daily OPR dose and concurrent benzodiazepine prescription and race/ethnicity and gender.	Race/ethnicity; sex; receipt of opioid analgesic medication; receipt of non-opioid medications anti-emetic medications, wait time to see a provider (in minutes) and length of visit in the ED (in minutes). Opioids included fentanyl, morphine, hydromorphone/Dilaudid, oxycodone, hydrocodone, hydrocodone-acetaminophen/Vicodin, tramadol, and oxycodone-acetaminophen/Percocet. Non-opioids included acetaminophen/Tylenol, ibuprofen/Motrin, and ketorolac/Toradol. Antiemetics included ondansetron/Zofran, famotidine/Pepcid, and metoclopramide/Reglan.	No interaction was identified between sex and race/ethnicity on the odds of receiving opioids. No significant difference in opioid administration was found between non-Caucasians as compared to Caucasians. Non-Caucasians did not differ from Caucasians on receipt of non-opioid analgesics or antiemetics. Wait time to see provider nor length of hospital also did not differ between ethnicity.	No statistically significant interaction between race/ethnicity and sex for administration of opioid analgesia to patients presenting to ED for appendicitis or gallbladder disease.
Romanelli et al.	Cross sectional	Patients (n=11,576) aged 18 or older with emergency department (ED) discharge diagnosis of long bone fracture.	Long bone fracture on a single limb	Prescription for an opioid analgesic at ED discharged; total morphine milligram equivalent (MME) units or oral medications.	Opioids including oral hydrocodone, parenteral hydromorphone, parenteral morphine.	Rates of opioid prescribing were no different by race/ethnicity however among patients with an opioid prescription, total MME units prescribed were less for Hispanics, blacks, and Asians relative to non-Hispanic whites.	Racial and ethnic minorities received similar frequencies of opioid prescribing for cases of long bone fracture, but small potency differences exist. More research is needed on why potency differences exist.

to originate from the appendix or gallbladder.²⁰ Moreover, two studies confirmed the frequency of opioids prescribed at discharge was similar between racial and ethnic groups for patients presenting to the ED for long bone fracture.^{19, 21}

In contrast, racial and ethnic disparities were established for non-definitive and more subjectively painful conditions such as back and abdominal pain where a distinct source of pain was not always clearly identifiable.¹⁹ Chronic pain conditions are associated with drug-seeking behavior; therefore, it is worth investigating how this knowledge may affect providers decisions on drug administration. Previous research has found that non-Hispanic Whites have a higher frequency of opioid addiction.^{17,19} However, despite this fact, both Hispanics/Latinos and Black/African American patients remain at significant risk of under-prescribing. Hispanics/Latinos were less likely receive opioids for the treatment of non-definitive pain conditions when visiting ambulatory care facilities.^{18, 22} Likewise, Non-Hispanic Blacks were less likely to receive a prescription for opioid pain medication at discharge despite lower opioid abuse and addiction rates as compared to non-Hispanic Whites.¹⁹ Specifically, Black/African Americans were 22% less likely to receive any analgesic and 29% less likely to receive opioid analgesics as compared to White counterparts with similar pain conditions.¹⁸ Similarly, with respect to patient reported sex, Black and female patients had greater odds of dose reduction of opioid pain relievers as compared to White and male patients within the same urban academic health system.¹⁷ These findings are in line with previous research indicating that Black patients received tighter oversight as compared to Whites undergoing treatment with opioid medications.²³ This is suggestive of a reverse disparity in the strategies used to monitor opioid use between racial and ethnic groups.²³

Methodological Quality Results

Five of the six included studies were rated as high-quality (**Table 3**). The mean quality score for the six included studies was 7.92, indicating overall good methodological quality. One study¹⁹ failed to clearly state the research question. Likewise, one study²² failed to clearly define independent variables. Two studies^{20,21} failed to assess exposure(s) more than once over time and examine different levels of exposure as related to the outcome. One study²¹ did not adjust for key confounding variables, while all studies failed to blind the exposure status of the participants.¹⁷⁻²²

Table 3. Methodological Quality

Source	Quality Assessment Score	Quality Rating
Meghani, Byun, and Gallagher	10	High
Rasu and Knell	5.83	Low
Singhal, Tien, and Hsia	8.33	High
Buonora et. al.	9.16	High
Rosenbloom et al.	7.5	High
Romanelli et al.	6.67	High

Table 4. Level of Evidence

Source	Level of Evidence Rating
Meghani, Byun, and Gallagher	1
Rasu and Knell	2
Singhal, Tien, and Hsia	1
Buonora et. al.	1
Rosenbloom et al.	2
Romanelli et al.	2

Grade of Recommendation

Conclusions regarding racial and ethnic disparities in pain management were graded using the SORT (**Table 5**). Conclusions have been allocated into 5 primary areas: non-opioid analgesic treatments, opioid analgesics for the treatment of objective sources of pain, opioid analgesics for the treatment of subjective sources of pain, opioid

tapering or dose reduction, and risk of opioid abuse or overdose death.

Non-opioid Analgesic Medications

1. Racial/ethnic inequalities appear to exist in the prescription of non-opioid analgesic medications. Black/African Americans are less likely to receive prescription of any analgesic medication as compared to White counterparts with similar subjectively painful, non-specific conditions.¹⁸ (Grade = A)

Opioid Analgesics for Treatment of Objective Sources of Pain

2. There is no apparent racial or ethnic disparity in opioid prescription nor administration for treatment of objectively painful conditions. The frequency of opioid prescription is similar between races/ethnicities for conditions resulting from verified pain sources such as toothaches, kidney stones or gallstones, long bone fractures, and appendicitis.^{19, 20, 21, 22} (Grade = B)

Opioid Analgesics for Treatment of Subjective Sources of Pain

3. Disparities seem to exist between races/ethnicities for the prescription of opioids for the treatment of conditions in which the source of pain may not be readily verifiable. Both Blacks/African Americans and Latinos/Hispanics are significantly less likely to receive an opioid medication for the treatment of non-traumatic or non-surgical pain conditions such as non-specific back or abdominal pain.^{18, 19} (Grade = A)

Opioid Abuse Risk

4. Racial/ethnic inequalities may occur in the tapering and reduction of opioid doses.

Black/African American have greater odds of opioid dose reduction as compared to Non-Hispanic Whites.¹⁷ (Grade = A)

5. There are evident racial/ethnic disparities in the risk of opioid abuse and opioid overdose death. Non-Hispanic Whites have a higher risk of opioid abuse and opioid related overdose death.^{17, 19} (Grade = A)

DISCUSSION AND CLINICAL IMPLICATIONS

Findings of this review suggest racial and ethnic minorities are at significant risk for the undertreatment of pain conditions. This is evident by the fact that disparities exist in the prescribing of analgesic pain medication. While inequalities were less stark for Hispanic/Latino patients, Black/African American patients were significantly less likely to receive prescription of any analgesic medication to treat their pain at discharge from the ED.¹⁸ However, when pain type was considered, these disparities were eliminated for conditions with objective sources of pain such as surgery or trauma; yet disparities persisted for subjectively painful conditions in which a source of pain could not be clearly identified.¹⁸

These findings extended to the prescription and administration of opioid pain relievers. We concluded, with good confidence, that there are no apparent racial or ethnic disparities in the administration of opioid pain relievers in the ED or at ambulatory discharge for patients with definitive conditions such as toothaches and kidney stones¹⁹, long bone fracture^{19, 21}, or from the appendix or gallbladder.²⁰ All of the previously mentioned conditions have a clear diagnostic process that can be confirmed with objective data, which could also influence why disparities were unfounded. To the contrary, racial and ethnic disparities emerge in the prescription of opioid analgesic medications for

Table 5. Grades of Recommendation

Conclusion	Source(s)	Grade
Racial/ethnic inequalities appear to exist in the prescription of non-opioid analgesic medications.	Meghani et al.	A
No apparent racial/ethnic disparities exist in opioid prescription or administration for treatment of objectively painful conditions.	Singhal et al; Rosenbloom et al; Romanelli et al.	A
Racial/ethnic disparities are present in the prescription of opioid analgesics for subjectively painful conditions.	Singhal et al; Meghani et al.	A
Racial/ethnic inequalities may occur in the tapering and reducing of opioid doses.	Buonora et al.	B
There are evident racial/ethnic disparities in the risk of opioid abuse and opioid overdose death.	Buonara et al.	A

subjectively painful conditions.^{18, 19} Both Hispanic/Latino and Black/African American

patients were less likely to be prescribed an opioid medication for the treatment of back pain, abdominal pain, or migraine headache.¹⁸ In instances where the provider was required to extend trust to the patient regarding conditions reliant on subjective confirmation racial disparities were apparent. Racial and ethnic differences in the management of pain using opioid pain appraise the severity of the patient’s pain as well

as judge their risk of misuse or abuse by their sociocultural characteristics.¹⁷

Over and above the fact that Black/African American patients obtained fewer opioid prescriptions, we also concluded that this population received lower doses of medication plus tighter oversight when compared to non-Hispanic Whites with equivalent diagnoses.^{17, 21} Specifically, the odds of dose reduction were 82% higher in Black/African American patients when compared to White patients within the same time interval.¹⁷ Inconsistencies in the prescription and administration of these drugs between ethnicities may suggest implicit biases on part of the health care provider. Again, evidence suggests racial and ethnic inequalities in pain management may be reflective of a health care provider’s ability to appraise the severity of pain in Latino/Hispanic and Black/African American patients.¹⁷ Failure in appraisal may lead providers to underestimate the severity of symptoms and be conservative in the prescription of opioid medications to non-White patients in medically ambiguous situations.¹⁹ This unconscious bias leads to a pattern of discrimination which denies vulnerable patient populations access to pain relief. ¹⁸ Undertreatment of pain has the potential to accelerate existing health disparities and further promote poor health outcomes in racial and ethnically diverse communities that already experience greater barriers to obtaining appropriate health care.^{17, 19}

Inequity in pain management does not only affect ethnic minorities. In the case of opioid monitoring, it appears that non-Whites actually receive care that is more in-line with that of expert recommendations, while Whites experience inappropriate laxity in the monitoring of their opioid treatment and the implementation of risk reduction strategies.²³ The use of opioids for pain management presents high potential for addiction and abuse of these medications in non-Hispanic Whites.¹⁹ The fact that these individuals are much

more likely to be administered and prescribed high-dose opioid medications for long-term duration is a potential contributing factor to why Whites have an age-adjusted death rate that is more than three times that of non-Hispanic Blacks.¹⁹ Ethnic disparities in prescribing practices may contribute not only to undertreatment of pain in non-Hispanic Blacks, but also promote the misuse, abuse, and potential opioid overdose death in non-Hispanic Whites.¹⁹ These findings suggest the assessment of a patient's treatment risks may rely on the clinician's interpretation of the patient's self-reported pain and the clinician's judgement about the patient's potential misuse of opioids.¹⁹ The highly subjective nature of these decisions and the influence of implicit bias leave room for assumption and unchallenged misconceptions to play a role in the selection of pain management interventions. To combat this, we advocate for a universal approach to the prescription of opioid analgesics medications as well as in the management and risk-reduction for patients with definitive and non-definitive pain conditions.²³

The treatment of pain is complicated by its inherently subjective nature, but identification and acknowledgement of implicit racial or ethnic biases, as well as use of an evidence-based approach, may assist health care providers in clinical decision-making during times of medical ambiguity. Individual patient factors such as cultural traditions, religious beliefs, and previous lived experiences need to be valued by clinicians for their potential to affect the pain experience in patients from various racial and ethnic backgrounds.²⁴ Likewise, all providers within the interdisciplinary health care team should be knowledgeable regarding current and appropriate standards of care. When properly educated on the standard of care and health inequities, athletic trainers can serve as vital patient advocates.²⁵ Furthermore, we can evaluate and document the effectiveness of these analgesic medications to determine when a

patient's pain needs are not being met or when intervention for substance misuse or abuse may be warranted.²⁶

CLINICAL BOTTOM LINE

Clinicians have a responsibility to act in their patients' best interest and provide high-quality patient care. Therefore, they need to remain aware of the role implicit bias may play in treatment decisions. Analgesic medications are often a principal component of pain management. Findings of this review concluded equity exists in the prescription of analgesics for definitive injuries such as long bone fractures, yet disparities are present in the prescription of analgesic drugs for more subjective conditions like back or abdominal pain between racial and ethnic groups.^{18, 19, 20, 21} Furthermore, evidence suggests that ethnic minorities may suffer from lower medication dosing and stricter opioid oversight from prescribing providers.^{17, 21} Racial and ethnic disparities in prescribing of these drugs may contribute not only to the inadequate management of pain for non-White communities but contribute to the high rates of abuse and overdose-related death characteristic of the opioid epidemic within the non-Hispanic White population.¹⁷

Respect for the patient's values, preferences and subjective reports of pain are important factors for all clinicians to consistently consider during clinical decision-making. It is particularly important that athletic trainers be aware of the current standards of care for managing pain through the use of analgesic medications. Furthermore, we should be knowledgeable and actionable regarding the signs of opioid misuse, abuse, and addiction. This will require acknowledging pain in patients, detecting the source of pain, evaluating pain at routine intervals, and developing an interdisciplinary plan with physicians and other health care professionals for successful pain management.²⁶ Because athletic trainers regularly work with

patients recovering from surgery and other painful conditions in which analgesics are prescribed, future research directions should specifically investigate racial and ethnic disparities in the prescription, administration, and abuse of these medications in the athletic population.

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