

## Critical Review

# Differences in Pain Coping Between Black and White Americans: A Meta-Analysis

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**Abstract:** Compared with white individuals, black individuals experience greater pain across clinical and experimental modalities. These race differences may be due to differences in pain-related coping. Several studies examined the relationship between race and pain coping; however, no meta-analytic review has summarized this relationship or attempted to account for differences across studies. The goal of this meta-analytic review was to quantify race differences in the overall use of pain coping strategies as well as specific coping strategies. Relevant studies were identified using electronic databases, an ancestry search, and by contacting authors for unpublished data. Of 150 studies identified, 19 met inclusion criteria, resulting in 6,489 participants and 123 effect sizes. All of the included studies were conducted in the United States. Mean effect sizes were calculated using a random effects model. Compared with white individuals, black individuals used pain coping strategies more frequently overall (standardized mean difference [ $d$ ] = .25,  $P < .01$ ), with the largest differences observed for praying ( $d = .70$ ) and catastrophizing ( $d = .40$ ). White individuals engaged in task persistence more than black individuals ( $d = -.28$ ). These results suggest that black individuals use coping strategies more frequently, specifically strategies associated with poorer pain outcomes. Future research should examine the extent to which the use of these strategies mediates race differences in the pain experience.

**Perspective:** Results of this meta-analysis examining race differences in pain-related coping indicate that, compared with white individuals, black individuals use coping strategies more frequently, specifically those involving praying and catastrophizing. These differences in coping may help to explain race differences in the pain experience.

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**Key words:** Pain, coping, race.

Chronic pain affects approximately 100 million Americans and is associated with \$635 billion in annual medical treatment and lost productivity.<sup>44</sup> Although differences in the pain experience have been documented across many racial and ethnic groups,

most of the literature focuses on differences between black and white individuals. The current meta-analytic review reflects this focus by examining black and white differences in pain-related coping. Because racial terminology varies across studies (eg, black vs African American, white versus Caucasian), we will adopt the terms used in the source articles throughout this introduction.

Compared with Caucasian, African American individuals report higher levels of pain for a number of conditions including AIDS, glaucoma, arthritis, postoperative pain, postspinal fusion pain, and low back pain.<sup>7,20,29,80,82,98</sup> Further, African American individuals show a lower pain tolerance and report higher pain intensity and unpleasantness than non-Hispanic white individuals during experimental pain tasks.<sup>11,15,24,25,71,81,96,100</sup> Race differences in clinical and experimental pain may be due

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to psychosocial factors such as pain coping. Coping is broadly defined as the use of behavioral and cognitive techniques to manage stress.<sup>58</sup> Differences in coping strategy use are associated with differences in pain intensity, adjustment to chronic pain, and psychological and physical functioning.<sup>45,46,53</sup> For example, several studies found that ignoring strategies are associated with less pain, whereas praying and hoping and catastrophizing are associated with higher pain levels.

Individual coping strategies may also be grouped into conceptual categories. The 3 most common categorizations will be discussed in this article. One conceptualization of pain coping differentiates cognitive from behavioral strategies. This conceptualization served as the basis for the Coping Strategies Questionnaire (CSQ), a widely used measure of 6 cognitive (diverting attention, reinterpreting pain, coping self-statements, ignoring pain, praying/hoping, and catastrophizing) and 2 behavioral (increasing activity level and increasing pain behaviors) coping strategies.<sup>75</sup>

Another conceptualization of coping differentiates active from passive strategies. Active coping refers to strategies to control pain or to function despite pain by using one's own resources, and passive coping involves relinquishing control of pain to others.<sup>9</sup> Studies have linked active coping strategies to positive affect, better psychological adjustment, and decreased depression, and passive strategies are linked to poor outcomes such as increased pain and depression.<sup>10,43</sup> The Vanderbilt Pain Management Inventory was designed to differentiate active and passive coping strategies. In addition, the strategies measured using the CSQ and Pain Coping Inventory can be classified into active and passive categories.<sup>9,56,84</sup>

Coping can also be classified into problem-focused versus emotion-focused strategies. Problem-focused approaches involve direct attempts to deal with pain, whereas emotion-focused approaches involve managing the emotional reactions to pain.<sup>30</sup> There is some evidence suggesting emotion-focused coping is associated with worse pain and functioning in individuals with chronic pain.<sup>2,10,27,34</sup>

In a topical review, Edwards and colleagues<sup>25</sup> discussed mechanisms of race and ethnic differences in pain, including differences in pain-related coping. Unfortunately, only 1 study had examined the relationship between race and pain coping at that time,<sup>50</sup> preventing the authors from making strong conclusions. Since their review, a number of studies have examined the relationship between race and pain coping, with inconsistent results, perhaps because of differences in conceptualization of coping across studies. To date, however, no critical or meta-analytic reviews have summarized the relationship between race and pain coping or attempted to account for the differences observed across studies. Further, few studies (Forsythe et al<sup>31</sup> and McIlvane<sup>63</sup> are notable exceptions) have examined the interactions between race and other putatively important demographic variables, such as sex and age, which are known to be independently associated with pain.<sup>18,63,72,100</sup> It is reasonable to speculate that the

relationship between race and pain coping differs on the basis of sex and age.

## The Current Study

The goal of this meta-analytic review was to quantify race differences (black vs white) in the use of pain coping strategies to better understand one possible mechanism of race differences in the pain experience. Such an understanding may inform chronic pain care and support an individually tailored treatment approach. We had the following hypotheses: 1) black and white individuals would differ in their use of pain coping strategies overall, 2) consistent with the topical review by Edwards and colleagues,<sup>25</sup> black individuals would report using hoping/praying strategies more than white individuals, 3) race differences in coping would vary across different conceptualizations of coping, and 4) the relationship between race and coping would vary across age and sex.

## Methods

### Search Methods

An exhaustive literature search of published studies was conducted using PubMed, PsychInfo, PsychArticles, Embase, Ovid, and Web of Science to find articles published through August 2014. Searches were defined by all possible keyword combinations of the terms for and variations of 1) pain, 2) coping, and 3) race. Additional search terms are presented in Table 1. Although different studies used different terms for race, for the sake of clarity, from this point forward we use "black" and "white," which are the broadest terms for these racial groups. After the online search, an ancestry search was

**Table 1. Alternative Search Terms**

<i>PAIN</i>	<i>COPING</i>	<i>RACE</i>
Nociception	CSQ	African American
	Catastrophizing	Black
	Chronic Pain Coping Inventory	Ethnicity
	Coping self statements	
	Distraction	
	Diverting attention	
	Guarding	
	Hoping	
	Ignoring	
	PCS	
	Pain Coping Inventory	
	Pain Coping Questionnaire	
	Praying	
	Reinterpreting pain	
	Relaxation	
	Seeking social support	
	Stone and Neale Daily	
	Coping Inventory	
	Transformation	
	Vanderbilt Multidimensional	
	Pain Coping Inventory	
	Wishful Thinking	

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