## **Original Article**

# Is Race/Ethnicity Related to the Presence or Severity of Pain in Colorectal and Lung Cancer?

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#### Abstract

**Context.** Developing interventions to address racial/ethnic cancer pain disparities requires exploration of the role of socioeconomic status, health status, and pain severity from the time of diagnosis.

**Objectives.** To examine patterns of disparities in cancer pain by evaluating differences by race/ethnicity in the odds of reporting pain and in pain severity, controlling for key patient-level covariates.

**Methods.** This study used data from a nationally representative cohort of colorectal and lung cancer patients. Multivariable logistic regression was conducted to examine the relationship between race/ethnicity and reporting pain. Multivariable linear regression was then conducted, among those who reported pain, to determine differences in pain severity by race/ethnicity.

**Results.** The cohort included 5761 individuals (14% black, 7% Hispanic/Latino, 6% Asian or Pacific Islander, and 3% multiracial), among whom 48% reported pain. The adjusted odds of reporting differed only for multiracial patients, who were more likely to report pain than whites (odds ratio: 1.54; P = 0.036). However, among those with pain, severity was higher for black patients ( $\beta = 6.6$ ;  $P \le 0.001$ ) and multiracial patients ( $\beta = 4.5$ ; P = 0.036) relative to white patients. Lower educational attainment, depressed affect, and lower levels of wealth also were associated with higher pain severity.

**Conclusion.** Although the odds of experiencing pain differed only for multiracial patients, among those reporting pain, both blacks and multiracial individuals reported higher pain severity than whites. Sociodemographic status, health status, and depression were associated with severity but did not explain the disparity. Interventions to address these disparities will need to focus on reported severity and patient-level factors. J Pain Symptom Manage 2014;48:1050–1059. *Published by Elsevier Inc. on behalf of American Academy of Hospice and Palliative Medicine.* 

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#### Key Words

Cancer pain, health disparities, patient-reported outcomes, quality of life, colorectal cancer, lung cancer

#### Introduction

In 2013, at least 1.6 million Americans received a new diagnosis of cancer. With increasingly sensitive modes of detection and aging of the population, this number will continue to rise. 1 Although these individuals experience a range of symptoms related to their tumor load and therapeutic interventions, pain is not only the most common symptom but also the most feared.<sup>2</sup> A recent systematic review estimated that approximately 60% of individuals undergoing anticancer therapy experience prevalent pain.<sup>2</sup> Despite the ubiquity of cancer pain and the availability of effective pain management therapies, undertreatment of cancer pain has been widely reported in the literature.<sup>3,4</sup> High levels of cancer-related pain often result in diminished quality of life for patients.<sup>5,6</sup> Additionally, high levels of pain may be associated with avoidable utilization of ambulatory care and emergency department services and may delay or lead to the discontinuation of cancer therapy, possibly resulting in higher cancerspecific mortality.8

The distribution of pain among cancer patients is not uniform in the U.S. population. Studies in the 1990s found that nonwhite individuals experience more cancer-related pain than their white counterparts. 9,10 increased burden of cancer symptom experience of underrepresented racial and ethnic groups was then highlighted in the 2002 Institute of Medicine report "Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care." The Institute of Medicine identified the increased burden of cancer pain among underrepresented racial and ethnic groups as a priority for further research.<sup>11</sup> More recent studies have found that disparities in cancer pain burden persist. 12–18 However, studies have been limited size, 12,13,15,18 have not evaluated patientreported factors that could influence patterns of pain-particularly health status, coexisting depression, and socioeconomic status<sup>17</sup>—or have addressed prevalent pain in populations

including large proportions of survivors far out from treatment.<sup>17</sup> Moreover, prior research in this arena has been limited because these studies only include individuals reporting pain and as yet have not examined differences in the propensity to report pain by patient factors or clinical characteristics. As a result, it remains unclear to what extent racial and ethnic disparities in cancer pain can be explained by the differential reporting of pain overall versus differences in pain severity.

Therefore, the purpose of this analysis was to examine racial and ethnic differences in patterns of pain, including both the presence of pain and pain severity, among two diverse and nationally representative cohorts of cancer patients near the time of cancer diagnosis, controlling for patient-reported sociodemographic, cancer, and health status factors.

#### Methods

Study Population and Survey Methods

Participants for this study came from the Cancer Care Outcomes Research and Surveillance Consortium (CanCORS) data set, a prospective cohort study of newly diagnosed colorectal and lung cancer patients in the U.S. CanCORS is a joint collaboration between the National Cancer Institute and the Department of Veterans Affairs that aimed to examine ways in which patients, providers, caregivers, and health systems influence the experience of cancer care and outcomes. 19 Patients were identified between 2003 and 2005 through seven geographically diverse Can-CORS Primary Data Collection and Research Sites, representing a variety of delivery systems. The CanCORS data set has been shown to be equivalent to the Surveillance Epidemiology and End Results Registry in terms of national representativeness of the sample.<sup>20</sup>

Patients were identified via rapid case ascertainment. Immediately after diagnosis, pathology reports of new cases were reviewed to determine eligibility. Within three months of

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