

# Perceived Injustice Predicts Stress and Pain in Adults with Sickle Cell Disease

■ ■ ■ *Miriam O. Ezenwa, PhD, RN,\* Robert E. Molokie, MD,<sup>†</sup> Diana J. Wilkie, PhD, RN, FAAN,\* Marie L. Suarez, PhD,\* and Yingwei Yao, PhD\**

From the \*Department of Biobehavioral Health Science, University of Illinois at Chicago, College of Nursing and Comprehensive Sickle Cell Center; <sup>†</sup>University of Illinois at Chicago, College of Medicine Department of Medicine, Division of Hematology/Oncology College of Pharmacy Department of Biopharmaceutical Sciences, and Comprehensive Sickle Cell Center, Chicago, Illinois.

Address correspondence to Miriam O. Ezenwa, PhD, RN, Assistant Professor, Sickle Cell Scholar, and Mayday Fellow, University of Illinois at Chicago, College of Nursing, 845 S. Damen Ave., Room 636, Chicago, IL 60612-7350. E-mail: [moezenwa@uic.edu](mailto:moezenwa@uic.edu)

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## ■ ABSTRACT:

Research evidence shows that perceived injustice is a context-based unfair treatment that has negative influence on health outcomes. We examined the contribution of patients' perceived injustice regarding interactions with health care providers to stress and pain in adults with sickle cell disease (SCD). This study was a cross-sectional correlational pilot study. Included in the study were adults with SCD who received their care from a university-affiliated comprehensive sickle cell clinic. Participants were 52 adults whose mean age was  $34 \pm 11$  years (minimum [min] 20 years, maximum [max] 70 years). Most of the patients were African American ( $n = 48, 92\%$ ) and female ( $n = 41, 79\%$ ). Forty-eight patients (92%) reported having a high school diploma or higher. Participants completed the perceived injustice questionnaire, perceived stress questionnaire, and the PAINReportIt, which includes questions to measure pain and demographics. We analyzed the data using the linear regression analyses. Perceived injustice from doctors was a significant predictor of perceived stress ( $p < .001$ ) and pain ( $p = .002$ ). Perceived injustice from nurses also was a significant predictor of perceived stress ( $p < .001$ ) and pain ( $p = .02$ ). The procedural, distributive, and informational domains of perceived injustice attributed to both doctors and nurses consistently predicted patients' perceived stress, but only the procedural and distributive domains of perceived injustice consistently predicted patients' pain. Findings suggest that perceived injustice was negatively associated with stress and pain in adults with SCD and warrant further investigation in a larger sample.

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Sickle cell disease (SCD) is an inherited blood disorder that afflicts about 100,000 people in the United States, and pain is its hallmark symptom, but the contribution of perceived injustice to the inadequate control of pain in adults with SCD is unknown. Perceived injustice is a perceived unfairness of the treatment that a person receives from others deemed important (e.g., friend, spouse, employer,

or healthcare provider) and is based on one's perception that others breached agreements (formal or informal) made between them (Colquitt, Conlon, Wesson, Porter, & Ng, 2001; Elovainio et al., 2009; Jackson, Kubzansky, & Wright, 2006). Perceived injustice is a multidimensional concept comprised of four domains: procedural, distributive, interpersonal, and informational (Table 1) (Colquitt, 2001) and could be a concept within the model of perceived unfairness (Jackson et al., 2006). The model of perceived unfairness posits that perception of unfairness, such as perceived injustice, initiates stress responses, which over time may accumulate to adversely affect health (Jackson et al., 2006) such as intensifying the pain of SCD (Fig. 1). To our knowledge, there has been no systematic study of perceived injustice by people with SCD. Researchers have focused some attention on the influence of perceived injustice on stress and pain (Judge & Colquitt, 2004; McParland & Knussen, 2010; Sullivan et al., 2008), but not in those with SCD. The purpose of this pilot study was to examine the association of perceived injustice with stress and pain experiences in adults with SCD.

Sickle cell pain is recurrent, unpredictable, and disabling; for many, it requires frequent contact with healthcare providers. Pain was the key reason for the 109,344 SCD emergency department (ED) encounters and hospitalizations between 2005 and 2006 in the United States (Brousseau, Owens, Mosso, Panepinto, & Steiner, 2010). As groups, African Americans with SCD had a 7-30 times higher hospitalization rate and 2-6 times higher rate of ED visits than African Americans without SCD (Shankar et al., 2005). Further, 33.4% of patients with SCD are rehospitalized within 30 days of discharge (Brousseau et al., 2010). Extensive use of acute care services is common for some adults with SCD who have pain and likely includes many instances of ineffective interactions with healthcare providers (Johnson, Saha, Arbelaez, Beach, & Cooper, 2004; Ratanawongsa et al., 2009). Patients' experiences with ineffective interactions with healthcare providers may be stressful and may also be perceived as unjust. For example, many hematologists and ED physicians are reluctant to use opioids for control of SCD pain because they believe that SCD patients abuse drugs, which leads them to not believe the patient's report of pain (Haywood et al., 2009; Labbe, Herbert, & Haynes, 2005; Shapiro, Benjamin, Payne, & Heidrich, 1997; Wright & Adeosum, 2009; Zempsky, 2009). Patients could perceive this provider reluctance and belief as unjust. Understanding the relationships among perceived injustice, stress, and SCD pain could lead to interventions for reducing

the \$2.4 billion annual SCD-associated healthcare costs (Lanzkron, Carroll, & Haywood, 2010).

Perceived injustice is not a new concept. Perceived injustice, perceived discrimination, and prejudice are forms of unfairness (Jackson et al., 2006). Perceived injustice is less studied in relation to health outcomes, especially in the United States where researchers have almost exclusively focused on perceived discrimination (Jackson et al., 2006) because of the history of slavery and racism in the United States. Studies of perceived injustice are more prevalent in Europe. Early studies examining the influence of perceived injustice on health issues focused on sleep disorders (Elovainio et al., 2009; Elovainio, Kivimaki, Vahtera, Keltikangas-Jarvinen, & Virtanen, 2003), cardiovascular diseases (Elovainio et al., 2006; Kivimaki et al., 2005), psychological and psychiatric disorders (Francis & Barling, 2005; Rousseau, Salek, Aube, & Morin, 2009), heavy drinking (Kouvonen et al., 2008), and sickness absence (Kivimaki, Elovainio, Vahtera, & Ferrie, 2003).

Of particular interest to our work are the studies that examined the relationship of perceived injustice to psychological (stress) and physiologic (pain) consequences. Investigators examining stress reported that perceived injustice was related to stress in a sample of faculty members from 23 universities in the United States (Judge & Colquitt, 2004). Similarly, Francis and Barling (2005) found that perceived injustice was independently related to psychological strain in government employees (Francis & Barling, 2005). Others report a similar effect of perceived injustice on psychological distress in workers at a correctional institution (Rousseau et al., 2009). Regarding pain, investigators found that the perception of injustice predicted frequent headaches in middle- and secondary-school adolescents and it was an independent predictor of frequent headaches (Santinello, Vieno, & De Vogli, 2009). The findings of the association between perceived injustice and poor health outcomes in the work setting were so compelling that healthcare settings investigators took notice as evidenced by studies of perceived injustice in people with a medical condition (McParland & Knussen, 2010; Sullivan et al., 2009).

Recently, some researchers began to focus on the influence of perceived injustice on health outcomes among people with medical conditions (McParland & Knussen, 2010; Sullivan et al., 2009). In patients with whiplash, perceived injustice was an independent predictor of posttraumatic stress symptoms (Sullivan et al., 2009). Similarly, in a sample of patients with chronic pain, the researchers found that perceived injustice was related to psychological well-being

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