



Editorial

The need for ecological validity in studies of pain and ethnicity

Interest in individual differences in pain has often focused on such characteristics as sex, age, and pain history, but there has also been concern about the role of race, culture, religion, socioeconomic level, family structure, language, urban–rural upbringing, and ethnicity—the full spectrum of often ill-defined variables that fall under the umbrella of ‘ethnocultural factors’.

Many studies of ethnocultural factors are, unfortunately, based upon small samples of convenience. Early reports often assessed participants living in some American city whose families came from various backgrounds and made broad statements about how ‘British’, ‘Jewish’, or ‘Italian’ people behave (Wolff, 1985).

Lipton and Marbach (1984) proposed a multifactorial model of individual differences incorporating sensory experiences, emotional and cognitive responses, and pain behaviors. Applying the model to patients at a large urban hospital identified some patterns that were more likely to occur in certain ethnic groups, but the similarities between African American, Irish, Italian, Jewish, and Hispanic patients were more noteworthy than the differences, particularly since many of them were third-generation Americans.

This issue of *Pain* includes a study by Campbell et al. (2005) that also employs a multidimensional perspective. The authors, noting that African Americans report higher pain and disability levels relative to whites in a considerable number of clinical conditions, ask whether there are corresponding differences among pain-free individuals from the two ethnic communities.

In contrast to recent studies, Campbell et al. incorporated multiple pain-induction techniques plus psychosocial measures. Their sample consisted of 62 African American and 58 white university undergraduates in Birmingham, Alabama.

African American students tended to have similar pain thresholds as whites to contact heat, ischemic pain, and cold pressor tasks, but lower pain tolerance levels. They also reported higher ratings during tonic heat. There were no group differences on most of the psychosocial measures

with the exception of one that measured passive coping (relinquishing control of pain to others) and one that asked about how strongly individuals are bothered by such things as high or low environmental temperature, rapid motion, and strong exertion, on both of which African Americans scored higher. The authors concluded that the pain responses suggest possible ethnocultural differences in both affective and sensory factors, while the psychosocial measures may indicate that African American students exhibit greater levels of hypervigilance to bodily sensations and a tendency to report maladaptive coping strategies.

As an experimental psychologist, I am pleased to see multiple forms of pain induction, use of threshold and suprathreshold pain measures, incorporation of coping and hypervigilance measures, examination of the links between psychophysical and psychosocial variables, and a clear appreciation, in a well-written paper, about both the strengths and the limitations of the investigation.

Still, I have serious reservations (Rollman, 2004) about studies of this sort. They lack ‘ecological validity’—generalizability to the real world (Johnston et al., 1991). A similar charge could be made about many of our basic studies, where we deliberately create restricted laboratory conditions in order to carefully isolate and control specific variables, but for a matter as sensitive and important as ethnic or racial differences in behavior (Pearce et al., 2004; Winker, 2004), I am inclined to set a higher bar.

Studies of heat, cold, and ischemic pain threshold and tolerance among 20-year-olds provide sparse information about the pain responsiveness of adult pain patients or their tendency to display maladaptive affective or cognitive reactions to illness. To ask such small-sample experiments to additionally address racial or ethnic disparities in pain expression creates a possibly insurmountable burden.

The authors acknowledge that their study was conducted on ‘healthy college students recruited from a homogeneous urban university population’ which may not generalize to black and white Americans, let alone all blacks and whites. Sixty-two African Americans and 58 whites in Birmingham, Alabama compose a highly limited sample if one seeks

‘evidence for the existence of ethnic differences in experimental pain perception.’ Limited, too, are generalizations one can make from other examinations of small numbers of whites and blacks or other ethnocultural groups (for reviews, see Edwards et al., 2001; Rollman, 2004).

To be fair, the authors of both laboratory and clinical studies have sometimes controlled differences between their groups with respect to some socioeconomic, educational, and cultural variables. Indeed, the majority of clinical studies (Riley et al., 2002) found that African Americans do report greater pain severity, more interference in everyday activities, more attention to symptoms, and more concern about the current and future implications of their pain and disability than whites.

Reports have usually used terms such as ‘racial/ethnic’ to avoid the implication that these are genetic differences, with resultant complexity and divisiveness (Braun, 2002; Schulman et al., 1995; Williams, 1996), but by generally focusing on a group of patients at a single large urban clinic, the studies still invite serious concerns about the lack of cultural heterogeneity of their participants, ignoring many biological factors or such cultural variables as child-rearing patterns, family models, emotional expressiveness, health values, communication style, doctor–patient relationships, beliefs about pain, self-management practices, and medical referrals.

Troubling findings about ethnicity and pain come from examinations of treatment disparities, which have demonstrated significant differences in the likelihood that blacks and whites receive adequate pain treatment. One notable review (Green et al., 2003) of the ‘unequal burden of pain’ called for more studies on patient-level variables, pain perception (such as the study which gave rise to this editorial), the role of economic and health support systems, linguistically sensitive measures, factors underlying clinical decision making, healthcare delivery, and multidisciplinary efforts to translate findings into effective and culturally relevant interventions.

What started with my concern about the ecological validity of small-sample laboratory-based studies of ethnic/racial differences among university students (and their emphasis on statistical rather than clinical significance) has widened to an examination of differences in socioeconomic status, healthcare delivery, physical and psychiatric assessment, pain management, medical anthropology, maladaptive coping, and potential racial bias. Race, ethnicity, and culture distinctions have generally been muted in this literature, contending that the biopsychosocial model of pain ‘is sculpted by interactions among biological, psychological, and social factors, which are the very factors that

comprise ethnicity’ (Edwards et al., 2001). Emphases may shift somewhat as advances in clinical genomics and proteomics (Kim et al., 2004; Max, 2004) generate better understanding of the factors that might affect predispositions to specific diseases or traits. Still, an insightful clinician will always need to avoid ethnic or racial stereotypes, eschew the notion of cultural uniformity, and assess and manage each patient as an individual.

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