

Ethnocultural Variations in the Experience of Pain

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Pain is experienced by persons, not groups. Still, researchers go to great effort to study interindividual factors such as sex, age, and culture as they relate to pain. That is done for a number of reasons: an understanding of predispositions to pain, the features that maintain it, and suggestions for tailored treatments.

The literature on sex and gender differences, for example, is quite sizeable now. Investigators have made considerable progress in considering the role of biological sex or gender identity in influencing the prevalence of pain conditions, the response to treatment, and the mechanisms used to cope with challenging pain syndromes. Typically, the majority of pain patients for many disorders is female (Berkley, 1997; LeResche, 1997; Unruh, 1996). This includes such conditions as headache, rheumatoid arthritis, fibromyalgia, irritable bowel disorder, and temporomandibular disorder. The data on prevalence have been supplemented (Fillingim, 2000; Mogil, Chesler, Wilson, Juraska, & Sternberg, 2000; Riley, Robinson, Wise, Myers, & Fillingim, 1998; Rollman & Lautenbacher, 2001) by research on biological, psychological, and sociocultural factors with the goal of understanding the underlying mechanisms, reducing the incidence of the problems, and improving the treatment of acute and chronic pain. We know, for example, that certain opioid drugs are more potent in males than in females (Craft & Bernal, 2001), that women have a moderate to large increase in sensitivity to experimentally-induced pain compared to men (Riley et al., 1998), that women are more likely than men to suffer from many forms of clinical pain

(Unruh, 1996), particularly those involving the musculoskeletal system (Rollman & Lautenbacher, 2001), and that both biological sex and psychological gender role are significant predictors of pain threshold, tolerance, and ratings of unpleasantness (Wise, Price, Myers, Heft, & Robinson, 2002).

In many respects, the rationale for studying ethnocultural differences in pain is identical, but culture is probably the most difficult and controversial of the biopsychosocial factors. This chapter critically examines the literature that suggests the individual's culture makes a critical difference in pain behavior and management.

Research on culture and pain has undergone three important stages. In the first, samples were small and poorly obtained and science often took a back seat to stereotypes. The second stage was marked by greater interest in both theory and methodology, but the validity of the findings was still often questionable. The third stage, which has recently emerged, is characterized by greater sophistication, larger sample sizes and population distributions, and closer attention to psychosocial factors which may mediate the results.

For reasons of convenience, most early studies of pain and culture took place in the laboratory. Typically, small numbers of persons from one cultural group were compared to small numbers of persons from one or two other groups, and sweeping generalizations were made. Wolff (1985) summarized a typical conclusion:

Scandinavians are tough and stoic with a high tolerance to pain; the British are more sensitive but, in view of their ingrained "stiff, upper lip," do not complain when in pain; Italians and other Mediterranean people are emotional and overreact to pain; and Jews both overreact to pain and are preoccupied with pain and suffering as well as physical health. (p. 23)

Similarly, Sternbach and Tursky (1965) observed, "Old Americans have a phlegmatic, matter-of-fact, doctor-helping orientation; Jews express a concern for the implication of pain, and they distrust palliatives; Italians express a desire for pain relief, and the Irish inhibit expression of suffering and concern for the implications of the pain" (p. 241). To draw that conclusion, they asked questions about attitudes to pain and tested pain reactivity in American-born women from four different ethnic groups: Yankee (Protestants of British descent whose parents and grandparents were born in the United States), Irish, Italian, and Jewish (the last three born of parents who emigrated to the United States from Europe). There were sizeable differences in pain tolerance (the level at which participants indicated that the pain had reached the maximum level they wished to experience). The Yankee and Jewish subjects withstood significantly higher values than the Italians, with the Irish at an intermediate level.

These conclusions about the pain reactions of Old Americans, Jews, Italians, and Irish are interesting but unwarranted. Religion, ethnicity, and national origin are mixed. More importantly, 15 Massachusetts homemakers per sample hardly allow one to draw generalizations about either the attitudes or the pain responses of an ethnic or cultural group. Individuals vary enormously in their response to experimentally induced pain, and the differences between groups, even in large studies, is generally quite modest in comparison to the intergroup variability.

The same caveat applies to many clinical studies. Zborowski's book *People in Pain*, published in 1969, is often cited because of its early examination of how culture might shape the pain response. His conclusions—Old Americans are stoic, Italians loudly demand pain relief, and Jews seek relief but worry about the future implications of their disorder—all came from staff reports at a single New York Veterans Administration hospital. Likewise, Zola's (1966) study of interethnic differences in pain reporting and attitudes was based on interviews with patients at various outpatient clinics at the Massachusetts General Hospital. He focused on 63 Italians and 81 Irish new admissions of comparable age, education, and social class.

The study found that the Irish were markedly more inclined to locate their problem in the eye, ear, nose, or throat but were also more likely to say that the problem was not painful ("It was more a throbbing than a pain. It feels more like sand in my eye"). Moreover, the Irish described a specific problem. In contrast, the Italians tended to report diffuse discomfort, presented more symptoms, had complaints in more bodily locations, and indicated that they had more kinds of dysfunctions.

Zola speculated that "Italian and Irish ways of communicating illness may reflect major values and preferred ways of handling problems within the culture itself" and could be understood in terms of generalized expressiveness. So, for the Italians, the complaints may relate to "their expansiveness so often [seen] in sociological, historical, and fictional writing"—a "well seasoned, dramatic emphasis to their lives."

The Irish view of life, in Zola's view, is drab ("long periods of routine followed by episodes of wild adventure"). It was as if "life was black and long-suffering and the less said the better." Consequently, a patient when asked about her reactions to the pain of her illness stated, "I ignore it like I do most things." This sort of literary analysis is not uninteresting, but it is based on a Freudian perspective. Science is largely absent.

Lipton and Marbach (1984) presented a scholarly review of the literature on ethnicity and pain that had been collected until the early 1980s, noting its many inadequacies. Sometimes, responses from patients were examined in individual ethnic groups (e.g., American, British, Scandinavian, and Italian); at other times, these were simply combined into a single "White" group. Some studies focused deliberately on pain, whereas others included

a few pain-related questions as part of a broader study of health beliefs and practices. Some used a short questionnaire, whereas others relied on interviews or caretaker impressions.

Lipton and Marbach proposed a model based upon three major areas of the pain experience. First was the physical experience—its intensity, quality, duration, and location—and the way in which the patient describes these sensations to others. Second was the patient's behavior in response to his or her pain. They introduced three subcategories here: cognitive interpretation (the interpretation and evaluation of the perceived pain), emotional responses (fear, anxiety, or depression and whether it is expressed openly or covertly), and function (how the pain affects social interaction and daily activities). The third area was medical intervention, dealing with the individual's action in response to pain and role as a pain patient (compliant and trusting or challenging and uncooperative).

Lipton and Marbach then applied this model to 476 consecutive patients of varied ethnic makeup seen at a facial pain clinic in a large hospital, concentrating on 50 patients in each of five groups: African American, Irish, Italian, Jewish, and Puerto Rican. There were some ethnic differences in pain description, a tendency for Italian and African American patients to attribute their pain to something they had done, the finding that African Americans and Puerto Ricans were less likely to hide their pain from family and friends, and relatively few ethnic differences in interference with daily functioning. The Irish, Italian, and Jewish patients were more likely to have consulted "quite a few doctors" before attending the clinic. Still, the similarities were considerably greater than the differences between the groups. The authors noted that the patients were all in one city, were often third-generation Americans (both their parents and themselves born in the United States), and generally saw their ethnic identity as American rather than foreign. As such, they were more likely to have adopted or become acculturated to at least some "American" norms for pain behaviors and attitudes. The Puerto Rican patients, who were most likely to have been immigrants, were also most likely to differ from the other groups, showing a high level of distress, strong friendship solidarity, dependency on members of their own ethnic group when sick, an emotionally expressive pain response, and great disruption in daily activities attributable to pain.

Although the earlier literature on medical care had suggested "ethnic group membership influences how one perceives, labels, responds to and communicates various symptoms, as well as from whom one selects to obtain care, when it is sought, and the types of treatment received," Lipton and Marbach showed that it is critically important to deconstruct the sociocultural determinants of pain behavior and attitudes. The social factor influences how families or local groups affect behavior and the practitioner-patient relationship, whereas the cultural factor influences an earlier

stage, how symptoms are interpreted. Both are critical in understanding how individuals report or express their discomfort. Both are likely to change over time, particularly in a multicultural environment.

A related analysis of the cultural context of pain behaviors came from Calvillo and Flaskerud (1991). They presented the view that, "Cross-cultural studies have demonstrated that White Americans of Northern European origin react to pain stoically and as calmly as possible. This response to pain has become the cultural model or norm in the United States. It is the behavior expected and valued by health caregivers" (p. 16). In order to better understand such cultural norms, Carvillo and Flaskerud examined Mexican American pain expression, concluding:

Many Mexican-American patients, especially women, moan when uncomfortable. Consequently, they are often identified by the nursing staff as complainers who cannot tolerate pain. In the Mexican culture, crying out with pain is an acceptable expression and not synonymous with an inability to tolerate pain. Crying out with pain does not necessarily indicate that the pain experience is severe or that . . . the patient expects the nurse to intervene. (p. 20)

Calvillo and Flaskerud suggested that crying and moaning may help the Mexican patient to relieve the pain rather than function as a request for intervention. Health practitioners, operating from the dominant culture model of response to pain, may, improperly, interpret crying and moaning as an indication that the patients are dramatic, emotional complainers with an inability to manage pain. Accordingly, there is an important need to understand culturally determined attitudes and pain reactions.

TREATMENT DISPARITIES

Recent studies have taken an epidemiological turn, studying the composition of patients seen in various medical clinics and, more importantly, whether treatment depends on ethnicity. For example, Todd, Samaroo, and Hoffman (1993) reviewed the charts at a major Los Angeles trauma center where it had been suggested that Hispanic patients were more likely than non-Hispanic White patients to receive no analgesia at all for arm or leg fractures. The evidence supported this impression, leading them to undertake a retrospective cohort study over a 2-year period. Of the 31 Hispanics who met the study criteria, 55% received no analgesic medication, compared to 26% of the non-Hispanic Whites. Analyses that controlled for sex, language, and insurance status, as well as severity of injury and physician characteristics, did not substantially change the evidence. Even where analgesics were offered, Hispanics tended to receive lower doses and fewer nar-

cotics. Although they noted, “we cannot be sure that the injuries in each of the patient groups were equally painful,” the authors suggested that physicians and other staff members may fail to adequately “recognize the presence of pain in patients who are culturally different from themselves” (p. 1539).

Ng, Dimsdale, Shragg, and Deutsch (1996) noted the uneven nature of studies on the relationship between ethnicity and pain, even in the 1990s. Most of the reports were based on anecdotal evidence, were based on small groups, and did not use well-validated assessment tools. Few studies controlled for acculturation. Ng et al. (1996) decided to extend the Todd et al. (1993) emergency room study on Hispanic and White patients, focusing on a much larger and more ethnically diverse sample of similar social class who were admitted to a San Diego clinic because of limb fracture and required an open reduction and internal fixation. Given the nature of the surgery and the hospitalization that followed, all were offered analgesic medications. Still, Whites received the highest dose of analgesics and a greater number of narcotics, followed by Blacks and Hispanics. They offered various theories regarding this outcome (the nurse’s perception of the patient’s pain, differences in the way patients demand pain control or expect pain to be eliminated, and, unlikely, pharmacokinetic differences across the ethnic groups), but concluded, “whether this difference reflects ethnic differences in analgesic requirements or reflects cultural biases in treatment remains to be determined” (p. 128).

One way to further explore this question is to look for ethnic group differences in the use of analgesics where the attitudes and expectations of the caregiver are not a factor. Patient-controlled analgesia (PCA), where the individual administers a drug such as morphine to himself or herself by pressing a hand switch attached to an infusion pump, provides such an opportunity. Ng, Dimsdale, Rollnik, and Shapiro (1996) examined the records for nearly 500 patients who were treated with PCA for postoperative pain and discovered that amounts of self-administered narcotics were not significantly different between Whites, Blacks, Hispanics, and Asians. What did vary was the initial PCA prescription ordered by the physician, so that a higher dose was ordered for Whites and Blacks than Hispanics. They interpreted their data to indicate that physicians predict Whites will have more pain, and prescribe accordingly, or that cultural factors influence communication (or lack thereof) between physician and patient, profoundly affecting the doctor’s treatment plan.

Cleeland et al. (1994) also noted the discriminatory nature of patient care. They studied 1,300 consecutive outpatients who had been diagnosed with recurrent or metastatic cancer, asking both them and their physician to rate their level of pain and its interference with activity and sleep. Forty-two percent of the total group of patients received inadequate analgesia,

but those seen at centers treating primarily patients representing minority groups were much more likely to have poorly controlled pain.

The data do not provide encouragement about the management of cancer pain in this sample, but are also an indictment of the treatment of minority patients. A number of letters to the editor followed publication of this provocative article. One (Karnad, 1994) is short enough to print in its entirety: "I do not think the problem of pain control will be solved until we face the fact that much of it stems from our puritanical culture. In the recesses of our collective identity, we still embrace the notion that pleasure is bad and suffering is redemptive (no pain, no gain)" (p. 199).

Bonham (2001) carefully examined disparities in health care in the United States, indicating that "racial and ethnic minority groups often receive different and less optimal management of their health care than White Americans" (p. 52). He considered a number of possible reasons for this including stereotypes, language barriers, ineffective communication, a failure to understand the patient's expressions of pain and distress, and socioeconomic factors, concluding that adequate pain assessment is the most important step in reducing inadequate patient care.

Rathore et al. (2000) recruited 164 medical students to view one of two case presentations of angina, one involving a 55-year-old Black female patient actor and the other a 55-year-old White male. The scripts were identical, the clinical symptoms were sufficient for a diagnosis of definite angina, and the actors were in identical gowns and filmed in the same room. Students were less willing to provide a diagnosis of definite angina for the Black female (46%) than for the White male (72%), yet rated her quality of life as lower. The design did not allow a determination of whether this apparent bias in diagnosis and health status rating is based on race or sex or a combination of the two, but the data indicated that training in cultural awareness should be a required part of training for medical and other health care personnel.

Insensitivity to the needs of Central American residents of the Boston area is highlighted by three simple case studies presented by Flores, Abreu, Schwartz, and Hill (2000). A 3-year-old girl, who was later found to have a perforated appendix and peritonitis, was repeatedly sent home from a hospital emergency department because no interpreter was available and the staff lacked kindness, friendliness, and respect; a 2-year-old girl with shoulder pain was placed in the custody of the Department of Social Services because the resident thought that the caregiver's comment, "she was struck," meant she had suffered abuse, rather than the intended "she had fallen off her tricycle and struck her shoulder"; and the parents of a neonate with severe impairments were not informed of the poor prognosis and mistakenly believed the baby would soon recover and be released. In all cases, "failure to address language and cultural issues resulted in inferior quality of care,

adverse outcomes, increased health care costs, and parental dissatisfaction” (p. 846).

It is important to test for disparities in health care or undertreatment of some ethnic groups in other societies. Sheiner, Sheiner, Shoham-Vardi, Mazor, and Katz (1999), in an investigation of the childbirth experience of Jewish and Bedouin women living in the Negev section of southern Israel, almost all of whom deliver at a major regional hospital, obtained ratings of pain (from the patient, physician, and midwife) at the initial active phase of labor. There were substantial demographic differences (the Bedouin women were younger, more likely to describe themselves as religious, less likely to be accompanied at labor by their husband, had less formal education, and did not attend childbirth education classes). Epidural analgesia was offered nearly twice as often to Jewish women as to the Bedouin (who preferred parenteral pethidine, a synthetic opioid analgesic).

The most interesting finding came from the concurrent visual analog scores of the mothers and the care providers. The self-assessments of the Jewish and Bedouin women were nearly identical (8.5 on a 10 point scale), but the ratings of the medical staff (almost all of whom were Jewish) indicated that they perceived the Bedouin women to experience less pain (6.9) than the Jewish ones (8.5). These data are different from some of those reported earlier, in that they do not show undertreatment of an ethnic group. Both groups of women had equal (albeit high) levels of pain at the time of assessment; what differed was the pain level judged by the delivery staff from the exhibited behavior. It is uncertain whether this difference was due to the behavior of the two groups, a bias on the part of the medical personnel, or their inability to recognize signs of pain in patients of a different culture.

Pain Expression

Diagnosis and treatment of pain are largely dependent on what the patient is willing to tell the health care provider or, for that matter, thinks is sufficiently important to report. The ethnocultural background of the practitioner is also likely to interact with that of the patient; a good physician or psychologist should examine his or her own attitudes and expectations about pain behavior. Davitz, Sameshima, and Davitz (1976), for example, asked over 500 nurses in the United States, Japan, Taiwan, Thailand, Korea, and Puerto Rico to read descriptions of patients and to judge their pain and psychological distress. The descriptions were brief and, in their own language, covered five disease categories, both sexes, three age levels, and two degrees of severity. The study found that Japanese and Korean nurses believed that their patients suffered a high degree of pain, while American and Puerto Rican nurses rated their patients' pain fairly low. These data run

counter to the stereotype of Asian stoicism. Davitz et al. suggest that the Asian nurses distinguished between overt and covert expression of pain, so that they inferred far more pain than was observable through verbal or bodily expressions, whereas the U.S. nurses were more likely to assume congruence between pain experience and pain behavior. Consequently, Asian patients treated in North American hospitals might receive less treatment than their pain level would warrant. Interestingly, other stereotypes, which could be quite dangerous to the patient, were shared by the nurses in all six cultures. For one, males were seen as in less pain than females for similar degrees of emotional distress. For another, the nurses believed that children suffer far less psychological distress than adults for comparable levels of pain.

A cross-cultural study of both pain attitudes and reactivity to experimentally induced discomfort was conducted by Nayak, Shiflett, Eshun, and Levine (2000). They explored differences in beliefs about appropriate or normative pain behavior, extending the research of Kodiath and Kodiath (1992), who found that patients in India reported less suffering and anger about lack of pain relief than individuals in the United States with similar levels of pain. Nayak et al. had slightly over 100 undergraduates at universities in the United States and India complete a questionnaire about sex-appropriate public pain responses (grimacing, crying, talking about the pain, etc.) and tested pain tolerance and ratings in the cold pressor task (immersing the arm in a container of circulating ice water). Both males and females in India believed that overt expression of pain is less appropriate than did the U.S. undergraduates. Moreover, the Indian volunteers of both sexes kept their hand in the ice water longer than their American counterparts. The authors suggested:

The greater willingness to express pain in American society could be due to the belief that pain is bad, need not be endured, and should be quickly eliminated. In addition, in American society today, the medical profession has taken on the primary role of pain relief, which, combined with the widespread availability and use of analgesics, provides a powerful reinforcement for pain expression. (p. 146)

Further studies with clinical rather than experimental pain and with a wider range of ages and socioeconomic conditions would be very helpful.

A relatively small sample of dentists and patients from three ethnic groups (Anglo-American, Chinese, and Scandinavian), all living in the greater Seattle area, were interviewed about their ways of coping with pain (Moore, 1990). Anglo-American patients sought pills and injections, denial of pain, and reassuring clinical contacts. Anglo-American dentists preferred to use drugs. In contrast, the Chinese patients preferred salves, oils, creams, and com-

presses and nontraditional medicine, although Chinese dentists (and the Scandinavian ones) shared the American preference for using pharmaceutical treatments. Interestingly, although Scandinavian patients did not want to be treated with local anesthetics, many volunteered that they accepted this treatment for their dentist's peace of mind.

Anthropological Studies. It is rare for anthropologists to go into the field in order to study pain behavior within an isolated cultural group. One exception is Sargent's (1984) study, conducted in the mid-1970s, of the Bariba, a major group of about 400,000 persons living in Benin and Nigeria who are "notable for consistently demonstrating an 'absence of manifest behavior' when confronted with apparently painful stimuli such as childbirth, wounds, or initiation ordeals" (p. 1299). Sargent interviewed 120 women of reproductive age in a small village regarding their behavioral ideals and actual behavior during delivery, spoke to numerous indigenous midwives and village leaders, and attended a number of deliveries. Tellingly, one local physician explained that the Bariba equate pain with cowardice, a source of enormous shame. They pride themselves on the courage of their men in war and their women in childbirth and disparage the behavior of other groups that express pain openly through complaints or behavioral expressions. Not surprisingly, the Bariba have few words with which to describe pain, although they do distinguish between pain sensation and suffering. Social modeling (Craig, 1986), from childhood, appears to shape the behavior of tribal members. Stoicism is not limited to pain; Bariba are expected to suppress grief and other negative emotions.

Honeyman and Jacobs (1996) went into the Australian outback to study pain behavior and beliefs among the members of a small aboriginal community. They observed that aboriginal children show few signs of distress and that adults minimize any overt pain behaviors. When questioned individually, community members acknowledged pain, including long-term low back pain, but none showed public pain or illness behaviors of the sort seen in Western society. Also, it was extremely rare for any of them to seek medical attention for pain problems. Honeyman and Jacobs proposed that:

the concept of illness as a social process, separate from a biological malfunction termed disease, allows us to see these people as acting appropriately to their cultural setting. In this society there are strong community expectations about tolerating and not expressing or displaying pain. This was evidenced by the few public back pain reactions we saw and the reluctance to talk about pain in front of others. (p. 842)

Although back pain was quite common in the community, the inhabitants did not actively complain about it and it rarely appeared in health records.

The findings emphasize the need for sensitive questioning of patients about their symptoms, particularly when they may come from a group where emotional expression of symptoms is discouraged.

Pediatric Pain. Given the psychosocial perspective on cultural differences in pain, it would be interesting to look for evidence concerning ethnocultural variation in children's pain. The task is not easy because of problems in assessing pain in young children. Recent years have seen numerous advances in developing physiological measures, behavioral observations, and self-report measures (McGrath, 1995; McGrath et al., 2000; McGrath, Rosmus, Canfield, Campbell, & Hennigar, 1998) including analysis of facial expressions, scales involving faces and colors, and examination of drawings.

Little attention has been paid to the need to validate these scales in different cultural settings. Villarruel and Denyes (1991) developed alternative versions of the "Oucher" scale for Hispanic and African American children. The Oucher comprises a series of six photographs of a 4-year-old White boy showing facial expressions indicating various levels of pain. A pediatric patient is asked to point to the picture that best reflects his or her own level of hurt. Using photographs of Hispanic and African American children, taken when they were or were not experiencing pain, the authors established an ordering of six photographs that other children could agree represented a progression of pain expression. It remains to be established whether this particular measure will reveal any cross-cultural differences in children's pain levels, whether scales tailored to ethnic origin or race, although culturally sensitive, aid in either pain assessment or in strengthening communication between medical practitioners and children of different cultural groups, and whether culture-free measures (such as a series of face drawings; Chambers & Craig, 1998; Chambers, Giesbrecht, Craig, Bennett, & Huntsman, 1999) can achieve both validity and universality in pain assessment.

Abu-Saad (1984) interviewed Arab American, Asian American, and Latin American school children, asking what caused pain for them, what words they used to describe pain ("like a hurt" was the most common descriptor in each group), how they felt when they are in pain, and how they coped with pain. Given that all lived in the same urban environment, the finding that the similarities among the subjects are considerably greater than the differences is not surprising. Studies of this sort need to be conducted with large numbers of children, of varying age and in a range of countries, in order to help us to better understand at what age cross-cultural differences, if any, become apparent and what changes take place during infancy, childhood, and adolescence. They will also advance our understanding of the speed of cultural diffusion or adaptation. Pfefferbaum, Adams, and Aceves (1990) studied pain and anxiety in 37 Hispanic and 35 Anglo children with

cancer at a hospital in Texas. The children were very similar in their behavioral responses. It was the parents who differed, with the Hispanic parents reporting significantly higher levels of anxiety than the Anglo ones.

Canadian-born Chinese and non-Chinese infants, receiving routine immunization at the age of 2 months, were compared for facial expressions and pain cries (Rosmus, Johnston, Chan-Yip, & Yang, 2000). This study is interesting because it provides an early examination of possible cultural differences in socialization. The authors, noting a literature on cross-cultural differences in infant development and the role of infant-care practices, assessed demographic information, degree of acculturation, the infant's feeding and crying patterns, and video recordings focused on the face during immunization. All babies exhibited facial and cry expressions, but the Chinese infants exhibited significantly greater brow bulges, duration of crying, and number of cry bursts. Anecdotal evidence indicated that the Chinese mothers were more interactive during the waiting period, possibly increasing the infants' arousal. The study is admittedly preliminary, but it opens the possibility that mothering patterns may either affect pain reactivity directly or influence the overall arousal response.

International Studies. An interesting cross-cultural study was recently reported by Litcher et al. (2001). They used the Children's Somatization Inventory, which assesses the frequency and severity of a comprehensive set of physical complaints, to compare children in Nashville with a large group of 10- to 12-year-olds in Kyiv, Ukraine, including many who had been evacuated from Chernobyl after the nuclear power plant accident there. The mothers of the children were given a similar questionnaire. Remarkably, the Ukrainian children reported fewer physical symptoms than the American ones of the same age, but their mothers reported nearly three times as many symptoms in their own children than those in Nashville. It is uncertain, of course, whether this reflects a generalized difference in awareness of bodily symptoms between American and Ukrainian women, developing at a later stage in life, or whether the Chernobyl incident fostered a more vigilant pattern in the latter group.

Another recent cross-cultural study (Levenstein et al., 2001) of symptom reporting compared the concerns of inflammatory bowel disease (IBD) patients in eight countries. Overall concern scores ranged from a high of 51 in Portugal to a low of 19 in Sweden, but the nature of the concerns also showed large inter-nation variability. Israeli patients were particularly concerned about pain and suffering whereas the Portuguese subjects worried about social stigma. Given the many behavioral consequences of chronic pain (McCracken, Zayfert, & Gross, 1992; Turk, Okifuji, Sinclair, & Starz, 1996), it is imperative to fully explore the sensory, affective, and cognitive reactions of pain patients, irrespective of ethnic background.

International studies of pain, particularly ones that focus on supposed ethnic or cultural differences, are influenced by differences in litigation or compensation systems in different countries. Hadjistavropoulos (1999), in a broad review of litigation and compensation, included a number of cross-cultural studies. Carron, DeGood, and Tait (1985), for example, found that back pain patients in the United States used more medication, experienced more disphoric mood states, and were more hampered in social-sexual, recreational, and vocational functioning than ones in New Zealand. At the onset of treatment, 49% of the U.S. sample was receiving pain-related financial compensation, in contrast to and only 17% of the New Zealand patients. Individuals in both countries who were receiving pretreatment compensation were less likely to report a return to full activity, although the relationship appeared more pronounced among those in the United States.

Other studies that demonstrate that certain expensive interventions are more likely to reduce acute pain (e.g., Macario, Scibetta, Navarro, & Riley, 2000) or that costly early interventions may reduce long-term disability (Borghouts, Koes, Vondeling, & Bouter, 1999; Hutubessy, van Tulder, Vondeling, & Bouter, 1999) suggest that national health care policies and budgets may influence both the nature and prevalence of pain syndromes.

Single-Society Studies. Many of the published studies of ethnocultural factors and pain have made broad generalizations based upon exceedingly small sample sizes. Thomas and Rose (1991) asked 28 African Caribbean males and females, 28 Anglo-Saxons, and 28 Asians in London, England, who were having an ear pierced with a piercing gun, to complete the McGill Pain Questionnaire. Asian subject scores were nearly twice those of the African Caribbeans, with Anglo-Saxon scores nearly as high, leading them to conclude, “the present results provide clear evidence that there are ethnic differences in pain experience in this test situation” (pp. 1064–1065).

Sanders et al. (1992) claimed that “American low back pain subjects had significantly higher pain intensity ratings than other cultures did” (p. 319) and that American, New Zealand, and Italian patients reported higher levels of psychosocial impairment than individuals living Japan, Mexico, or Colombia. Their subject pool consisted of 10 or 11 chronic low back pain patients from each of the six countries. Likewise, Brena, Sanders, and Motoyama (1990), evaluating 11 back pain patients from Tokyo and a like number of patients from Atlanta, reported, “Japanese low back pain patients were less psychosocially, vocationally, and avocationally impaired than similar American patients” (p. 122).

Sheffield, Kirby, Biles, and Sheps (1999) evaluated 124 Caucasians and 18 African Americans who had taken an exercise treadmill test which showed certain electrocardiographic abnormalities. Because 9 of the latter but only 34 of the former had angina during testing, they concluded, “African Ameri-

cans reported anginal pain at twice the rate of Caucasians" (p. 107). A subsequent study of pain perception (Sheffield, Biles, Orom, Maixner, & Sheps, 2000) using a contact thermode to deliver noxious levels of heat to 27 Whites and 24 African Americans, showed that the latter group gave higher ratings than the former to each of 5 temperatures, leading them to indicate that "these data suggest that different pain mechanisms underlie race differences in pain perception" (p. 521) and to call for studies of acculturation and twin studies to better understand the specific factors.

Edwards and Fillingim (1999), testing 30 Whites and 18 African Americans, also found that the Whites had a greater thermal pain tolerance and gave lower unpleasantness ratings at the lower two of four temperatures in a scaling study, with no group differences in intensity ratings. There were also no group differences in questionnaire measures of pain reactivity or in pain complaints over the preceding month, although African Americans reported greater average pain severity and two pain sites rather than the Whites' number of 1.4. The two unpleasantness rating differences led to the proposal that there are racial differences in the affective-motivational dimension of pain. A significant correlation between pain tolerance and pain symptoms brought the suggestion that ethnic variation in affective-motivational judgments may account for the severity and number of pain sites. The authors presented the admittedly speculative suggestion that African Americans may require quantitatively greater degrees of pain treatment than Whites.

In a subsequent study of 68 African Americans and 269 Whites attending an interdisciplinary pain clinic, the African Americans reported significantly greater pain severity and pain-related disability than Whites (Edwards, Doleys, Fillingim, & Lowery, 2001), although no differences in the McGill Pain Questionnaire or measures of pain interference or affective distress. As well, the African Americans had shorter ischemic pain tolerance times for a tourniquet test (about 5 minutes vs. 9 for the White patients). The large difference in the latter, compared to a much smaller difference in clinical pain, led to the suggestion that coping styles, attitudes toward pain measurement, or differences in central pain modulating systems may distinguish the two groups. The inclusion of such diverse putative mechanisms underscores the risk of labeling any of the differences reported in this section as "racial" rather than "cultural." To the extent that the first term implies a genetic causation (a matter, as noted below, of considerable contention) and the second an environmental one, a confound of racial variation and socialization factors arises. This problem is exacerbated by the fact that members of a particular group may differ in both their culturally determined practices and in the manner in which they are treated by members of other groups in their society.

Some recent papers have started to correct the problem of small sample size. Ho and Ong (2001) used Singapore, a large multiethnic society, to examine the influence of group membership (Chinese, Malay, Indian, and other) on headache morbidity. No significant ethnic differences were found for lifetime or current headache prevalence within a sample of over 2,000 individuals, although there were some group differences in average headache intensity and frequency, with the Chinese lowest. Non-Chinese were also more likely to seek medical attention for their headaches and to have taken medical leave during the preceding year. The data do not allow one to determine whether genetic factors may have influenced the outcome of this study.

Allison et al. (2002) assessed musculoskeletal pain within a community sample of over 2,100 adults from the Indian, Pakistani, Bangladeshi, and African Caribbean communities in the area around Manchester, England, and compared the results to those obtained from a recent study of White residents using the same methodology. For the age range 45–64 years, musculoskeletal pain prevalence was higher in all ethnic groups (about 70 to 90%) than in White subjects, with the latter being about 53% for both males and females. When asked whether they had pain in “most joints,” about 6 to 8% of Whites agreed compared to about 30 to 45% in the ethnic minority groups. There were no group differences, however, in disability scores. The authors cautioned that comparable studies need to be done in other geographical locations, because the data do not permit one to readily distinguish between differences in pain sensitivity or expression, the effects of change of culture and migration, and mental health issues. With respect to the last point, a study (Nelson, Novy, Averill, & Berry, 1996) with a relatively small sample of Black, White, and Hispanic patients in a southern U.S. community revealed different Minnesota Multiphasic Personality Inventory (MMPI) profiles, but the data also suggested that education level rather than ethnic group membership may be the more relevant characteristic.

McCracken, Matthews, Tang, and Cuba (2001), in one of the few studies of ethnic or racial group differences in the experience of chronic pain, asked 207 White and 57 African American patients seeking treatment at a pain management center about their physical symptoms, depression, disability, health care use, and pain-related anxiety. The two groups did not differ in age, education, or chronicity of their pain complaint. African Americans rated their pain higher and reported more avoidance of pain and activity, more fearful thinking about pain, and more pain-related anxiety. As well, they were higher on physical symptom complaints and on physical, psychosocial, and overall disability. The authors noted that many factors may explain these findings, including less social support, differences in social circumstances, beliefs about pain, and self-management strategies, and the

possibility that African Americans may not seek or be referred for treatment unless they are suffering from high levels of distress.

A study by Jordan, Lumley, and Leisen (1998) compared pain control beliefs, use of cognitive coping strategies, and status of pain, activity level, and emotion among 48 African American and 52 White women with rheumatoid arthritis, controlling for the potentially confounding influence of income, marital status, and education. There were no group differences in pain, but the African American patients were less physically active and more likely to cope with pain by praying and hoping and diverting attention, whereas Whites were more likely to make coping statements and ignore the pain. Bill-Harvey, Rippey, Abeles, and Pfeiffer (1989) had earlier noted that 92% of low-income, urban African American arthritis patients used prayer to relieve their pain and discomfort. Cognitive behavior therapy and other treatments that encourage the use of increased coping attempts and decreased negative thinking can aid African Americans to manage experimentally induced pain (Gil et al., 1996) and are likely to be of clinical benefit.

Waza, Graham, Zyzanski, and Inoue (1999) found that Japanese patients who had been newly diagnosed with depression reported more total symptoms, particularly physical ones, than patients in the United States. Twenty seven percent of the Japanese patients reported only physical symptoms, whereas only 9% of the patients in the United States presented in this manner. A large proportion of the Japanese had pain complaints (generally abdominal pain, headache, and neck pain); comparable figures for the American patients were about 60 to 80% less. The authors propose that pain at specific body areas may arise because of cultural influences, possibly to avoid the stigma in Japan associated with emotional disorders. For example, many Japanese expressions use the term *hara* (abdomen) to verbalize emotion, and digestive-system complaints are the primary reason for outpatient medical visits in that country. Likewise, *katakori* (a pain in the neck) is a major medical complaint. Waza et al. suggested that the physical presentation of symptoms by Japanese patients may mean that many cases of depression are misdiagnosed.

Njobvu, Hunt, Pope, and Macfarlane (1999), in a review of pain among individuals from South Asian ethnic minority groups who live in the United Kingdom, observed that they more frequently attend medical clinics and report greater musculoskeletal pain. This leads to the question of whether South Asians also suffer greatly from pain in their countries of origin. Hameed and Gibson (1997) provided relevant data in a study of pain complaints among Pakistanis living in England and in Pakistan. Those living in England reported more arthritic symptoms and more nonspecific musculoskeletal pain, particularly among females. There are numerous possible explanations including the colder British climate, adjustment to life in a new

society, and a greater willingness to report pain among the better educated Pakistanis living in Great Britain.

Sabbioni and Eugster (2001) also looked at immigrants, namely, Spanish and Italians living in Switzerland. Earlier studies had found that foreign patients in that country had worse medical outcomes after back injury than Swiss ones, but the migrants often worked in low-paying jobs with increased health hazards. There was no difference between groups in pain intensity or appraisal, but those immigrants with a high “degree of inclusion” (DI), as measured by type of work permit, age at immigration, and language fluency, were similar to Swiss citizens, and better than immigrants with low DI, with respect to general well-being, functional capacity, and mood.

A population-based study of low back pain (LBP) among about 4,000 Belgian adults (Skovron, Szpalski, Nordin, Melot, & Cukier, 1994) found that French Belgians (living in the southern region of Wallonia) had a greater likelihood than Flemish Belgians of ever having had LBP. The authors wondered whether the data are attributable to “a greater willingness among French speakers to share difficulties with the group in contrast with the more individualistic tendencies of the Flemish population,” but they noted that it is also in this region where there are greater economic uncertainties, more heavy industry, and larger companies.

REFLECTIONS

The many studies reviewed here, and the many included in other reviews (Edwards, Fillingim, & Keefe, 2001; Lasch, 2000; Moore & Brodsgaard, 1999; Rollman, 1998), provide a fascinating view of ethnocultural variations in the experience of pain. The scholarly perspectives, nature of pain, research settings, variables investigated, and measures employed vary tremendously. Much has been learned, but much is still confusing. The results sometimes go in opposite directions. The samples are often small and based on convenience rather than sound epidemiological principles. Some studies investigated laboratory-induced pain whereas others examined acute or chronic clinical pain conditions. Some studies found differences that were statistically significant but likely to be clinically unimportant (such as a pain score of 55.7 for one group and 53.4 for the comparison one), yet they presented their data as confirming the presence of ethnic differences. On a subject as potentially contentious as ethnic or racial differences, it seems best to err on the side of caution.

Only one investigation compared both experimental and endogenous pain in the same individuals, ischemic pain tolerance in African American and White pain clinic patients (Edwards, Doleys, Fillingim, & Lowery, 2001). It is essential to go beyond pain threshold and tolerance measures and look

into other measures of pain reactivity and inhibition (Gracely, Petzke, Wolf, & Clauw, 2002; Lautenbacher & Rollman, 1997; Lautenbacher, Rollman, & McCain, 1994; McDermid, Rollman, & McCain, 1996; Staud, Vierck, Cannon, Mauderli, & Price, 2001; Yang, Clark, & Janal, 1991) across ethnic groups.

Many factors, such as the subjects' education, psychological status, and assignment to ethnic categories, varied considerably, as did the training of the interviewers and quality of the assessment tools. The McGill Pain Questionnaire has been carefully validated in numerous languages (e.g., De Benedittis, Massei, Nobili, & Pieri, 1988; Hasegawa et al., 2001; Lazaro et al., 2001; Strand & Ljunggren, 1997), and there have been some interesting uses of the Brief Pain Inventory in various countries (Cleeland et al., 1996), but most other pain and coping measures have not been translated and validated.

Much remains to be learned about the process of acculturation or cultural diffusion and how it affects cognitions and behaviors. Bates's (Bates & Edwards, 1992) Ethnicity and Pain Questionnaire, which assesses an individual's ties to his or her ethnic group, indicates that later generations of families that came to the United States from abroad are likely to have acculturated to the culture of the majority group. In her New England sample, Central American, Italian, and Polish groups had the greatest heritage consistency, whereas Irish, French Canadians, and, especially, Anglo-Americans were more assimilated. Bates also assessed the psychological characteristics of her sample. Over 80% of the Central American participants reported an external locus of control, in contrast to the Polish group, where only 10% did so. Other studies have also suggested that there may be important cultural differences in responsibility, blame, and other attributional styles which moderate pain expression and suffering (Bachiocco, Credico, & Tiengo, 2002; Eccleston, Williams, & Rogers, 1997).

We assume that pain and emotion mean the same thing in all cultures, but we do not well understand the interaction between semantics and culture. We cannot answer the question, "Even if an Anglo-American has a headache, is the meaning the same as when a Chinese person says he or she has a headache?" (Moore & Brodsgaard, 1999). We are not good at judging facial expressions in other societies. Shioiri, Someya, Helmeste, and Tang (1999) found that Japanese subjects experienced difficulties in recognizing some emotional facial expressions and misunderstood others. Russell (1991) provided a detailed review of the literature that indicates both similarities and differences in how emotions are categorized in different languages and cultures.

We should not assume that stoicism is good and expressiveness is bad, although that impression is often taken away from many of the studies reviewed here. One can easily argue the opposite and note that whatever cultural differences exist are not limited to pain or negative affect

and that societies that openly express pain also seem to openly express joy or happiness.

We have not clarified the definitions of race and ethnicity, often using them interchangeably. Many scholars challenge the concept of “race-as-biology,” arguing that it is, in fact, a social construct (Goodman, 2000). No genetic signature identifies individuals as members of a particular race, and even the term *ethnicity* leads to confusions (Dimsdale, 2000; Morris, 2001). A twin study of laboratory pain sensitivity (MacGregor, Griffiths, Baker, & Spector, 1997) found equally high correlations between both monozygotic and dizygotic twins, leading to the conclusion that “there is no significant genetic contribution to the strong correlation in pressure pain threshold that is observed in twin pairs. These findings reinforce the view that learned patterns of behavior within families are an important determinant of perceived sensitivity to pain” (p. 253).

A recent investigation by Raber and Devor (2002) showed that in rats the characteristics of a cagemate can largely override genetic predispositions to pain behavior, possibly through the influence of stress. They concluded:

Can the presence of social partners affect pain behavior without actually altering felt pain? In animals, we have no direct access to information of pain experience except as reflected in behavior. These questions, however, apply equally to humans, including oneself. Could genotype or social convention (including the presence of specific others) change outward pain behavior without actually affecting the “raw feel” of the pain? In humans, the answer is clearly yes, although intuitively one imagines that rodents are less bound by social context (innate or learned), and that pain behavior should therefore more faithfully reflect actual pain sensation. This caveat, however, cannot be ruled out. (p. 149)

Blacks from Africa, the Caribbean, and the United States have markedly different cultural experiences, even within their geographic region. Black, and White, and Asian groups within a single society such as the United States may have enormous differences in child-rearing practices, modeling, and behavioral reinforcement, in addition to whatever genetic factors might distinguish them.

One cannot legitimately lump together individuals from China, Japan, Thailand, the Philippines, Singapore, Korea, Indonesia, and so on and pretend that they share a single cultural identity that can be labeled “Asian.” Moreover, in our increasingly multicultural societies, we have no easy way to classify the ethnicity of an individual whose parents come from different backgrounds, who has moved from one continent to another, or who has spent critical years being educated abroad.

This is not to say that there are no differences between racial or ethnic groups. Rather, it is to encourage extreme caution in statements based on

small numbers in a single community. African Americans living in a major metropolitan area or a university town are not representative of all African Americans and are certainly not representative of all Blacks. We cannot have it both ways with regard to White participants: to proclaim the supposed differences between Irish, Italians, Poles, and Scandinavians, and then to randomly lump a cluster of them together as “Whites” or “Caucasians” when we need a group to contrast with Blacks or Asians.

It is misleading and potentially detrimental to generalize to all members of one group based on a handful of subjects, often obtained nonrandomly, and who differ from other members of their group in myriad respects. The NIH Guidelines for Inclusion of Women and Minorities as Subjects in Clinical Research (http://grants1.nih.gov/grants/funding/women_min/guidelines_amended_10_2001.htm) have the laudable goal of ensuring that there is broad inclusion of subjects and “no significant differences of clinical or public health importance in intervention effect based on sex/gender, racial/ethnic and/or relevant subpopulation comparisons.” This does not mean that a group of researchers conducting a pain study that ends up with 43 White subjects, 9 African Americans, 7 Hispanics, and 5 Asians should present the findings as a study of ethnocultural variations.

To the extent that such research shows that there are ethnocultural differences in pain or the effects of analgesics or the degree of negative affect or the effects of psychosocial interventions, we have a responsibility to identify the evidence and take appropriate action to modify clinical practice guidelines. At the moment, it seems we are best able to say that all patients should be carefully evaluated and treated with respect. Irrespective of their ethnocultural status, their pain reports must be accepted and all efforts must be undertaken to reduce their pain and distress.

ACKNOWLEDGMENTS

Partial support for the preparation of this chapter came from a research grant from the Natural Sciences and Engineering Research Council of Canada. I wish to thank Heather Whitehead for her assistance in obtaining copies of the many papers on the topic of this review.

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