

INVESTIGATION OF THE PAIN EXPERIENCE

IN A WORKING GROUP OF ADULTS

THESIS

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By

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CHAPTER 1

GENERAL INTRODUCTION

Pain affects most individuals at some time, and pain is associated with lost work time, considerable medical costs, and decreased quality of life. In the United States, treatment of chronic (unremitting) pain patients accounts for not only lost productivity but for most of annual health care costs (Gatchel and Epker, 1999), a social cost greater than \$100 billion annually (Thernstrom, 2001).

The experience of pain is complex, involving not just a simple sensory response to tissue irritation or damage, but a *perception* of the irritation and a preferred *behavioral response* to the irritation that are moderated by personality, individual experience, learning (including social learning and thus culture), mood, and gender. Eighty percent of physician visits involve the reporting of pain (Baum, et. al., 1983, Gatchel and Epker, 1999). Since pain cannot be assessed objectively in the medical setting, a physician or a nurse must rely on the patient's subjective description of their pain.

Epidemiological studies have established the prevalence of various pain conditions within the general population. These studies have been flawed in that they often do not access all groups within the population, thus they may underestimate the total prevalence of pain in our society. Epidemiological studies generally do not inquire about the pain experience in depth, due to their large number of participants. Instead, most qualitative research on the experience and expression of pain and on pain-coping strategies has occurred within the medical setting, often using individuals who are severely impaired by their medical and/or pain condition (Crook, 1996). Many of the subjects of these clinical studies within the United States are also of moderate to high socio-economic status (SES), and for this reason do not represent the general population who experience various levels of pain.

Lay persons, having not studied the health professions, may not view their pain using the bio-medical model that is taught to medical professionals and para-professionals. They may, therefore, have a very different understanding of their painful condition than do health care providers or typical pain clinic patients, and they may hold unexpected or unforeseen perceptions of their pain and its care. Understanding the various perspectives on pain by community members could potentially assist health care providers in communicating more effectively with a variety of individuals as well as providing the most appropriate pain care to all.

About half the studies on acute pain care indicate that minority group patients, such as Mexican-Americans, receive less medication for their pain while in the medical setting (Bonham, 2001, Morris, 2001, Ng, et. al., 1996, Todd, et.al., 1993). A more accurate understanding of the pain experienced by this group could lead to more equitable health care practices. Appropriate care for pain has been required since January 2001 by the Joint Commission on Accreditation of Hospital Organizations (JCAHO), through its standards for medical facilities and nursing homes (Thernstrom, 2001, Joint Commission on Accreditation of Healthcare Organizations, 2002).

Changing demographics also emphasize the importance of understanding medical care needs of Mexican-American individuals. This is especially relevant in the Southern and Western U.S. While the Mexican-American population currently comprises one in twelve U.S. residents, the U.S. Census Bureau reports that 38.4% of this group are under the age of 18. This compares to 23.5% of the non-Hispanic white “majority” population, who are under the age of eighteen. (Therrien & Ramirez, 2000) It has been predicted that by the year 2020, Hispanics will represent 15% of the U.S. population (Zea, 1994).

Objectives

This study explores the pain experience in a non-clinical, working group of adults employed as service workers by inquiring about socio-demographic factors, and the feelings, attitudes and social interactions relating to pain experienced. A large proportion of this study group are of Mexican-American descent, and may present unique perspectives on coping with pain, due to the influence of their Hispanic culture. Data analysis will be descriptive, and the percentage of participants with pain will be roughly compared to pain prevalences reported in the literature.

CHAPTER 2

SOCIAL INFLUENCE AND THE CULTURAL MEANING OF PAIN

Following the shift in emphasis on pain as a symptom of disease to pain-as-the-disease, and the emergence of multidisciplinary pain management clinics in the 1960's, the biology and epidemiology of pain have been researched extensively. In many clinical settings, pain is no longer considered a sensation, but rather a perception (Morris, 1991, p.75).

The International Association for the Study of Pain (IASP) has defined pain as: an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage (Merskey & Bogduk, 1994). This definition implies that even if pain sensation could be measured objectively, one would still not know the full experience of another person's pain. In addition to sensory activity, variable emotional experience and differences in cognitive interpretation of painful sensation can impact the overall perception of pain. The IASP definition even infers that actual tissue damage need not be present at all.

Psychological factors, including emotions and beliefs and attitudes, can impact the pain experience, making the experience of pain very complex and individualized. In addition, each social group, such as a family, has a slightly different way of responding to suffering, which further influences the pain behavior of the afflicted individual in real time in a reciprocal manner. Over the course of time, models of the pain process have been suggested on biological, bio-psychological, and bio-psycho-social levels. Because one's beliefs and attitudes are influenced by family and peer groups, there is a social aspect to pain perception.

Anatomy and physiology

According to anatomical study of the pain experience, pain is initially sensed by nociceptors, peripheral nerve endings located in the skin, muscle, deep tissues, and the viscera. Nociceptors are free nerve endings, meaning they are unprotected from exposure to chemicals, such as chemicals that contact the skin, and they are not surrounded by non-neural structures, such as those found in Meissner corpuscles or Pacinian corpuscles that

sense light touch. Mechanical nociceptors respond best to intense mechanical stimulation, and polymodal nociceptors respond well to both mechanical and temperature stimulation. Nociceptors can be stimulated by changes in the body's internal biochemistry, by the presence of chemicals such as serotonin, histamine, kinins, potassium (K^+) and prostaglandin. These changes in body chemistry naturally occur in association with inflammation or tissue damage (Baum, 1983, Turk & Flor, 1999, Zigmond, et. al., 1999).

Nociceptors can become sensitized when exposed to body chemicals such as prostaglandins, leukotrienes, or substance P, and some nociceptors are inactive until sensitized in this way. Natural pain killers, or endogenous opioids, such as beta-endorphins can reduce pain sensation. Such chemicals are naturally released during a major trauma to the body, or during extensive physical activity (Baum, 1983, Turk & Flor, 1999).

Receptors that communicate pain do not signal pain by a change in their firing rate. Instead, there are two types of peripheral nerve fibers that transmit the sensation of pain at different speeds. A-delta fibers seem to be responsible for immediate or sharp pain. They are myelinated, thus they transmit the nerve impulse quickly. C fibers are smaller and unmyelinated. They are slower but are more plentiful, and they seem to be responsible for pain that is ultimately experienced as a more diffuse, dull ache, or burning pain. These peripheral nerve fibers run from the nociceptive ending toward the Central Nervous System (CNS), where their cell bodies are located in the Dorsal Root Ganglia (DRG), in the dorsal horn of the spinal cord. Of the two sizes of cell bodies in the DRG, nociceptor cell bodies are the smaller (Baum, 1983, Zigmond, et. al., 1999).

After connecting to ascending neurons in the spinal cord, the pain impulse crosses the midline and then runs toward the brain, primarily through the anterolateral system of the spinothalamic and spinoreticulothalamic tract. Termination of these neurons occurs in several parts of the brain, including the reticular formation of the medulla and pons, the superior colliculus, the periaqueductal gray region (PAG), and the thalamus. Although the thalamus maintains a body map organization that can then communicate body location of pain to the somatosensory cortex, the sensation of pain is more poorly localized than are other senses, such as fine touch (Turk & Flor, 1999, Zigmond, et. al., 1999).

Pain is not, however, simply a sensation that is recorded at the level of the cortex. Anatomically, for example, the spinoreticular pathway (ascending to the reticular formation) provides input for producing for brain arousal and affective response (to pain). Neurons connecting to nociceptive input at the PAG descend to the nucleus raphe magnus (pons) and lateral tegmental nucleus where they connect to adrenergic and serotonergic neurons. These descend into the spinal cord where they stimulate enkephalin-releasing neurons. Enkephalins are endogenous opioid peptides that function as neurotransmitters; they can inhibit both incoming nociceptive axons and ascending spinothalamic neurons. (Other neurotransmitters that contribute to the inhibitory mechanism for pain include serotonin, gammaaminobutyric acid (GABA), norepinephrine, and somatostatin.) Since the PAG receives neuronal fibers from the cortex, hypothalamus, and limbic system, there can be stimulation of descending analgesic neurons by several areas responsible for a variety of brain functions, such as cognition, memory, and emotion (Long, 1997, Turk & Flor, 1999, Zigmond, et. al., 1999). Not surprisingly, a number of psychological factors have been shown to mediate pain perception (see discussion below).

Pain theory

Biological – Specificity theory, Pattern theory

Early theories of pain sensation and perception did not account for the complex variations seen in pain perception. In 1644, Descartes proposed that pain was perceived by a straight pathway or channel, going directly from the skin to the brain. This could be imagined as something like a doorbell mechanism, where the pain stimulus pressed a button, and a bell rang at the brain (Baum, 1983). The specificity theory of pain was proposed by Von Frey in 1894. This theory included the presence of different kinds of receptors for mechanical touch, temperature, and pain. Much like the senses of sight and hearing, the sense of pain was thought to operate through a combination of peripheral and central mechanisms (Baum, 1983, Turk & Flor, 1999). Goldschneider also presented a theory of pain at this time in history. This pattern theory of pain suggested that different sensations were coded by impulse patterns created at the site of stimulation. A strong

stimulus would create a different impulse pattern than would a weak stimulus, so the nerve endings did not have to be specialized (Baum, 1983, Turk & Flor, 1999).

Melzack and Wall – Gate control theory

In an attempt to explain the influence of psychological factors on pain perception, Melzack and Wall proposed the gate control theory of pain in 1965. In this model, pain is not communicated in a straight-through pathway from peripheral nociceptor to the brain. Instead, several structures along the nerve pathway can modify the transmission of impulses. Specifically, a “gate” at the dorsal horn of the spinal cord determines how much impulse may pass through. The degree to which this “gate” is open is influenced both by ascending impulses in A-delta and C fibers and by descending impulses from the brain. The involvement of the brain is hypothetically determined by past experience. This experience could either be pain experience, or emotional experience with particular stressors; it could incorporate attention, cognition, and feeling state (Baum, 1983, Turk & Flor, 1999).

Psychosocial Models

Bates proposed a “biocultural model of pain perception” in 1987, integrating aspects of gate control theory and social learning and social comparison theories, in order to draw attention to cultural factors in the pain experience. In this model, the home and family are suggested as the source of social comparison. During psychological development, individuals observe pain expression and pain behavior within their social group, thereby learning appropriate emotional expressiveness, and typical attitudes, expressions, and meanings related to pain (Bates, Edwards, and Anderson, 1993). Patterning of pain perception and response are considered by Bates and her colleagues to be cultural, and this learned experience is believed to have the ability to influence the neurophysiological processing of nociceptive information as well as psychological, behavioral, and verbal responses to pain.

Turk (1996) presented a “biosychosocial model” of pain that incorporates a complex interaction of biological, psychological, and social/cultural variables – an interaction Turk refers to as “illness”. Dynamic interaction of these variables over time contributes to the very individual experience of continuation (or discontinuation) of the pain experience. Turk suggests that the biological, psychological, and social/cultural

variables act in a reciprocal manner that shapes both the experience and the responses of individuals with persistent pain.

Cluster analysis of the West Haven-Yale Multidimensional Pain Inventory (WHYMPI) seems to support such a complex interaction of forces as the major contributor to chronic pain as illness. Turk (1996) cites several studies in which three homogeneous subgroups of pain patients could be found using the WHYMPI, despite varying diagnoses or locations of pain. Turk and Rudy have termed these subgroupings of patients as: Dysfunctional; Adaptive Copers; and Minimizers (Turk, 1996).

Medical sociology

As indicated by the more recent pain theories, social factors must be considered in their impact upon one's experience of pain. Both cultural and structural factors have been found to influence how different groups may experience pain differently. As explained in the above models, culture impacts attitudes toward the pain experience, or meaning, which can affect one's arousal in relation to the physiological sensation of pain. This may affect the pain experience in either a negative (increased fear or frustration), or a positive (increased acceptance) direction. The meaning of pain can be learned, relearned in a new way, reinforced by social support, or discouraged by removal of social support (Bates, 1987, Turk, 1996).

Structural factors in society affect the degree of power that different groups have to attain security, health, and healthcare within society at large. Some individuals experience more pain, because they work harder with their body and/or receive less medical care for their pain. Although such individuals may not display illness behavior or seek medical care, they may nevertheless experience higher morbidity. Mexican-Americans are more likely than most ethnic groups to be subject to such a structural pressure, since they are overly represented in the lower sectors of income level, education level, and job status.

According to the US Census Bureau (Therrien & Ramirez, 2001), in the year 2000, 51% of Mexican-Americans over the age of 25 had achieved at least a high school education, compared to 88.4% of non-Hispanic Anglos (Whites). Although the Hispanic population represented 12% of the total population, they accounted for 23.1%, or almost one quarter, of those living in poverty. Hispanic children represented 16.2% of the U.S.

population, yet 29.0% lived in poverty (as compared to 9.4% of the non-Hispanic Anglo “majority” children).

As a percent of their population group, 20.6% of the Mexican-American full-time, year-round workers and 49.3% of the non-Hispanic Anglo full-time, year-round workers made \$35,000 or more. According to US Census Bureau occupation tables, in the year 2000, 17.7 % of Mexican-Americans were employed as service workers, outside private homes, as compared to 11.3% of non-Hispanic Anglos (Yax, 2001). These figures show that this particular minority group does not experience American prosperity in the proportion that would be expected by the size of their population within the U.S. society.

Medical sociologists note that over time different aspects of life become “medicalized”. This occurs when a situation that was previously considered just a natural part of life, or was previously considered to be of religious or moral concern, evolves into a concern of biomedicine. It seems that pain has shifted from a symptom of spiritual punishment or a symptom of some other disease, towards “pain as the disease”, and has thus become medicalized. The resolution of pain and associated suffering has come under the purview of the medical profession.

Operational definition of terms

For the purposes of this study, pain will be defined as follows: (a) Pain - Any sore, hurt or ache experienced for at least 12 hours (half a day) during the last month; (b) Acute Pain - Pain of short duration, less than 3 months. “Acute pain is usually the result of some specific and readily identifiable tissue damage, such as a broken leg or surgical lesion. It rarely lasts more than 3 months (Baum, et. al., 1983)”; (c) Chronic Pain - Pain persisting for more than 3 months. The International Association for the Study of Pain (IASP) has defined chronic pain as: “pain lasting more than 3 months, persisting past the normal time of healing, or failing to respond to the usual forms of biomedical intervention” (Merskey, 1986). Some studies define chronic pain as lasting more than 6 months; (d) Localized Pain - Pain in just one region, or quadrant of the body. For example, pain located in just one arm is regional, and pain limited to the right upper torso and right arm is located in just one quadrant; (e) Widespread Pain - Pain in the axial skeleton (cervical spine or anterior chest or thoracic spine or lower back), plus pain in both the left and right sides of the body, plus pain above and below the waist, as indicated

on a body drawing of the full human figure, front and back views (Wolfe, 1990) (See figure 1); (f) Widespread and chronic Pain - Fulfills the description of both chronic and widespread pain, described above.

Variations in pain definitions in the literature

Comparison of results from epidemiological studies on pain is difficult, due to the different design and particularly due to the different definition of pain used by various experimenters. Some of the words used to describe the construct of pain include “any non-inflammatory musculoskeletal pain” (Brekke, et. al., 2002), “any pain or discomfort in any part of your body” (Brattberg, et. al., 1989), “any frequent pain” (Crook, et. al., 1984), or “any pain in (the following) body locations”, such as specifically in the Back, Head, Abdomen, Face, or Chest (James, et.al., 1991, Sternbach, 1986, Von Korff, et. al., 1988).

The specific sites included varied between these latter three studies. James, et. al. (1991) included “any pain severe enough to (1) have lead to a consultation with a doctor or health professional, or (2) that led to the use of medication for the pain, or (3) that interfered with life or activities a lot”. Von Korff, et. al. (1988) excluded “pain that is fleeting or minor, such as a brief headache, or muscles that are sore after exercising”.

In addition to location, the time considered for the recollection of a pain experience varies in different studies from the prior two weeks (Crook, et. al., 1984) to the past one year (Gureje, et. al., 1998, Sternbach, 1986), or even the lifetime (James, et. al., 1991). The most common period used is the past one month. In several cases, the duration of the pain experienced is questioned, and this may be used to determine whether the pain was operationally defined as acute or chronic.

Pain recorded may be of a partial day duration (Brekke, et. al., 2002), or a full day duration (Croft, et. al., 1993,1994), or a full one month duration (Brattberg, et. al., 1989). Chronic pain has been defined in various ways, for example, as pain that has occurred for “more than 3 months” (Croft, et. al., 1993,1994), or “more than 6 months” (Gureje, et. al., 1998), or “101 or more days during the year” (Sternbach, 1986).

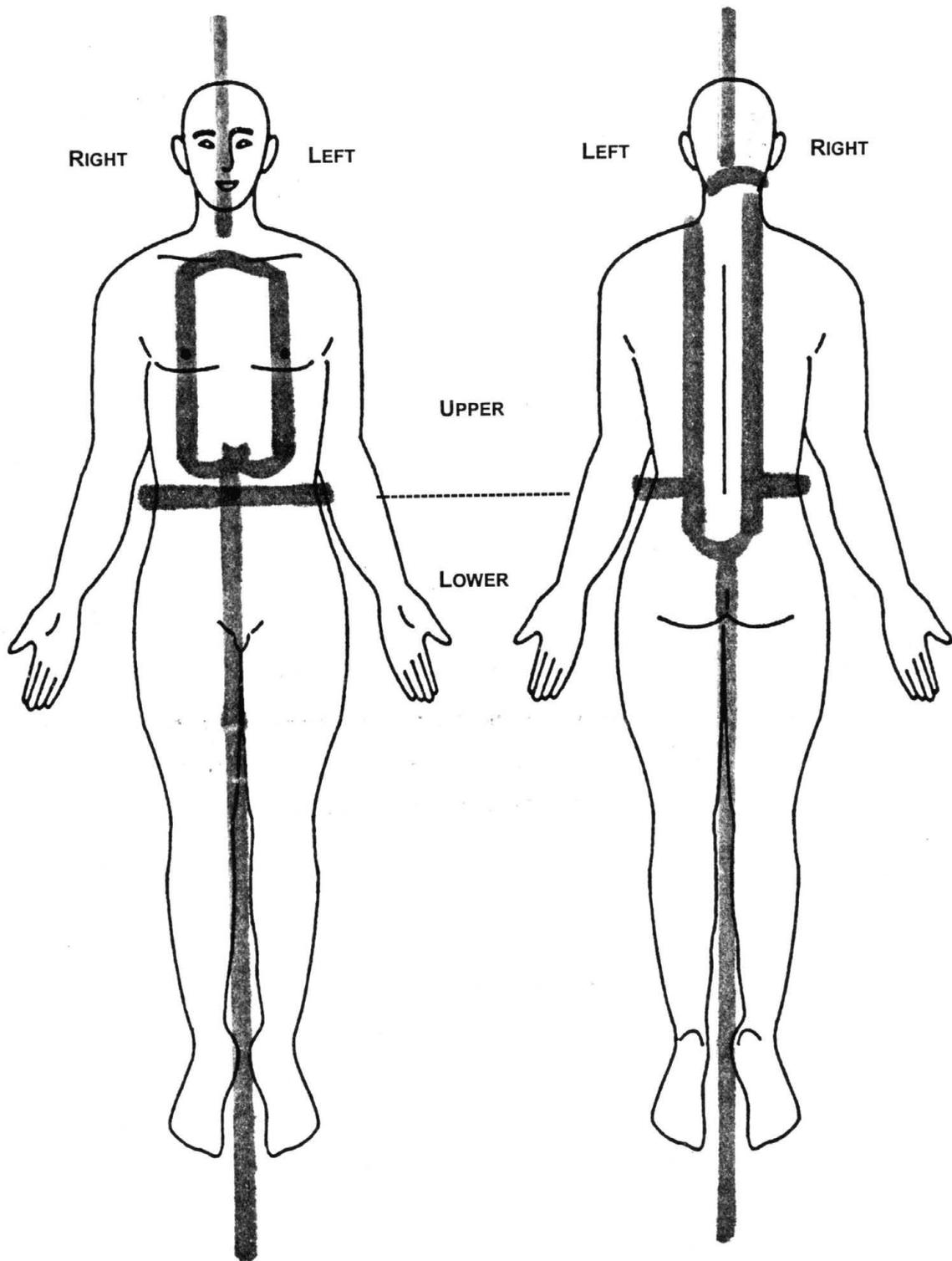


Figure 1. Body Drawing showing regions for scoring widespread pain.

Epidemiology

As noted above, epidemiological studies of pain produce varying results. Combined results from studies in industrialized countries indicate that between 20 and 65% of adults are experiencing pain at any point in time, and women experience more pain than men. In the case of temporomandibular joint dysfunction pain, for example, women are considered a high-risk group, experiencing twice the prevalence of pain and having 2.5 times greater likelihood of seeking treatment for pain than men (Drangsholt & LeResche, 1999). Generally, the prevalence of pain increases with increasing age until about the age of retirement, at which point the prevalence decreases somewhat. Prevalence numbers for persistent or chronic, localized pain range from about 25-45% of the population. The prevalence of chronic, widespread pain in the population is estimated to be about 11%.

Pain is the third most common reason people visit a medical doctor, following only colds and upper respiratory infections; acute pain often follows surgical procedures (Davidhizar, et. al., 1997). Eighty five percent of cancer patients experience pain during the course of their illness (Gordon, 1997). Pain prevalence changes with advancement of the cancer; 40% of intermediate stage cancer patients experience pain, and 60-80% of advanced stage cancer patients experience pain (Barkwell, 1991). During the lifetime, one or more substantial painful experiences will affect over 80% of the adult population (James, et. al., 1991) and 73% of Americans suffer from headaches (Sterbach, 1986).

Painful musculoskeletal problems are the leading cause of disability for people in their working years, primarily due to lower back pain, arthritis, and joint pain, and non-Anglo disabled people outnumber Anglo disabled people by a ratio of about 2 to 1 (Freund & McGuire, 1999). Back pain is the second most common reason for missing work (Freund & McGuire, 1999). In addition, pain exerts a toll on the mental health of individuals. Gureje, et. al. (1998) found that primary care patients reporting persistent pain were much more likely to have an anxiety or a depressive disorder than patients who did not report persistent pain. This relationship between psychological disorders and pain was present at all care centers studied, although the relationship between disability and pain was inconsistent across centers.

Specific pain sites

Generally, the most frequently cited locations of pain are the head, joints, legs, and lower back. In a study of members of a group health cooperative (northwestern US), Von Korff, et. al. (1988) found that 41% had experienced back pain, and 26% had experienced headache, over the course of the previous year. Pain at other sites (abdomen, face, and chest) was experienced by less than 20% of those surveyed. The 1985 Nuprin Pain Report (Sternbach, 1986) found that over the course of one year, 73% of individuals experienced headache pain. Backaches, joint pains, muscle pains, and/or stomach pains were each experienced by 46-56% of individuals. Forty percent reported female menstrual pain, 30% reported dental pain, and 5% reported “other” pain. Back pain tended to be treated by physicians as acute, but was actually experienced by primary care patients as chronic; over a one year period, 34% of these patients experienced pain for 50% of the days; and over a six-month period, 21% experienced pain every day (Von Korff, 1994, cited in Linton & Skevington, 1999)

Chronic pain

Pain that persists longer than an anticipated healing period, or that lasts longer than 3 months, is termed “chronic”. Prevalence rates of chronic pain range widely across nations, with women reporting more chronic pain than men. Female gender is considered a risk factor for chronic, widespread pain as well. The reason for such a great variation in reported chronic pain internationally may be due to differences in local attitudes or in cultural differences between nations.

In a cross-national study of persistent pain (defined as 6 months or more) in primary care patients, Gureje, et. al. (2001) reported prevalence rates ranging from 5.9% (Ubadan, Nigeria) to 40.2% (Santiago, Brazil), with an average international prevalence at 22.7%. Centers in 14 countries were included in the study. Many countries were not industrialized nations, and/or were located outside Western Europe and the United States. Limitations of this study include the lack of a design that specifically tests hypotheses about cross-cultural differences.

Croft, et. al. (1993) found chronic (>3 months duration), widespread pain in 15.6% of women and only 9.4% of men. A two-year follow-up on this study found that among those individuals initially having chronic widespread pain, 35% still had the chronic widespread pain, 50% had only regional pain, and 15% had no pain (MacFarlane,

et al., 1996). Of those originally experiencing regional pain, 65% still had regional pain, 19% now had chronic widespread pain, and 16% had no pain. Factors associated with the non-resolved cases of chronic widespread pain included: female gender, older age, leaving school at a younger age, high tender point count (in clinical examination), high levels of fatigue, or additional physical or psychological symptoms.

Fibromyalgia Syndrome (FMS), a specific form of chronic widespread pain that is associated with chronic fatigue, occurs in about 2% of the population, with women about 5 times as likely to be diagnosed as men (Wolfe, et. al., 1995). It is most common in middle-aged women (Wolfe, et. al., 1990).

Chronic low back pain presents a particularly costly “epidemic” with uncertain etiology. In the late 1980’s, 2 million Americans were unable to work due to chronic back pain (Morris, 1991). In a 1977 study, patients with low back pain accounted for over one third of all compensation payments in the state of Washington, yet no organic cause could be found in 75% of these cases (cited in Morris, 1991). Gatchel and Turk (1999) report that back pain is the primary cause of disability in individuals under the age of 45. Eighty percent of individuals will experience low back pain at some point in their lives and an estimated 2 to 5% of the U.S. adult population experiences low back pain at any one time (Gatchel and Turk, 1999). Recurrence of a low back pain episode occurs in between 30% and 70% of previous low back patients, creating an intermittent but chronic pain condition (Gatchel and Turk, 1999).

Origin of pain, and medical consultation

An individual’s interpretation of the cause of pain, or the origin myth, can vary considerably. This interpretation may impact the way in which the person seeks medical care, or if they do, as well as their perceptions about what may effectively impact healing. Some patients with persistent pain may repeatedly visit physicians in a search for a biological explanation and cure.

In a 1987 telephone survey of 265 Australian households, Strauss, et. al. (2001) determined that 34% of respondents believed their pain had spontaneous or unknown origin. Twenty one percent stated that the origin of their pain was work-related. Most of the individuals with pain consulted a health professional (70%); 84% of these professionals were doctors. Self treatment or no treatment for pain was employed by the remainder of individuals (15% and 15% respectively).

Crook, et al. (1984) found that 68-69% of respondents in Canada reported their pain as being of spontaneous or unknown origin. Over 75% of respondents (with both temporary and persistent pain) had visited their physician at least once during the previous year to seek treatment for their pain. Individuals with persistent pain visited the physician more times during the year than did those with temporary pain; however, those with temporary pain were more likely to have visited the physician during the previous two weeks. Sixty six percent of individuals experiencing pain during the previous two weeks had *not* visited the physician at all during this period. Sixty percent of individuals experiencing pain were taking medications for their pain. It is noteworthy that this study took place in Canada, where there are no financial barriers to medical care access. Despite the fact that it is not expensive for Canadians to go to a medical clinic with a report of pain, almost one fourth of the study participants had chosen not to seek medical care for pain in the previous year. About two thirds of individuals with pain had not consulted a physician in the two weeks preceding the study.

Only three percent of respondents to the Nuprin Pain Study had consulted a pain specialist, and 18% of those with severe or unbearable pain did not consult any medical professional (Sternbach, 1986). Respondents in the pain study by James, et. al., (1991), primarily claimed that their severe pain was of a physical origin. Only menstrual pain was more often considered to be of psychological origin, or to be of no know cause. This study occurred in an urban area of New Zealand.

To endure symptoms of physical illness without consulting a medical professional is not limited to those with pain symptoms. Research in England indicates that although there is not a financial barrier to using health care, individuals generally self treat, using advice and resources available in the family home. For example, although 91% of individuals reported experiencing physical symptoms in the previous 2 weeks, only 16% had consulted a physician. Only 28% reported consulting a physician in the previous year. Self-medication was a more common response to symptoms, and this could include non-prescribed as well as previously prescribed medications. In the 24 hours before the survey, 55% had taken some form of medication. (Dunnell & Carwright, 1972, cited in Freund & McGuire, 1998, p.168) The Health in Detroit Study obtained similar findings on self-medication; in response to ordinary health problems, individuals typically used self-dosed nonprescription and prescription drugs on 58% of the days they experienced

symptoms. Another common self-imposed remedy was to cut down on activity, such as running errands; this occurred on nearly 24% of the days when symptoms occurred (Verbrugge & Ascione, 1987, cited in Freund & McGuire, 1998, p.168).

Occupation

Certain occupations have been found to be associated with particular groupings of pain symptoms. A relationship between industrial or occupational group and low back pain (LBP) was reported by Adera (1988), who evaluated data from the U.S. National Health and Nutrition Study. The industrial group of Utilities & Sanitary Services workers had the highest prevalence of LBP at 23.3%. The prevalence of low back pain for Household workers was low (5.9%), and the prevalence for Service work excluding household work and for Cleaning Service workers was moderate (12.9% and 15% respectively).

More specifically, the prevalence of LBP for Food Service and Cleaning Service workers is 13.5% and 15%, respectively; this compares to Nurses and Health Service workers who have 12.35% LBP and Managers and Administrators who experience 13.8% LBP. Workers with the most LBP include Transport and Equipment Operators at 15.8% and Physicians & related (such as Chiropractors) at 18.1% (Adera, 1988).

The Bureau of Labor Statistics, U.S. Department of Labor, has determined that the total number of injuries and illnesses requiring time away from work has decreased during the period of 1992 to 1998 (ERGOnext, 2001). However, illnesses and injuries resulting in restricted work activity has increased by nearly 70%, indicating that work injuries are still of substantial concern. The occupations reported to be at highest risk for musculoskeletal injury in 1998 were: Truck drivers, Laborers (non-construction), Nursing aides and orderlies, Janitors and cleaners, Construction laborers, Assemblers, Carpenters, Cooks, Welders and Cutters, and Stock handlers and Baggers (ERGOnext, 2001, BLS, 2000). These high risk groups include the population investigated in the present study.

It has been suggested that the most likely reason adults suffer from high rates of back problems in the 20-21st century is that most adults have become very sedentary. Spending the majority of the day in a job that requires constant sitting, such as work at a desk or driving a vehicle, is associated with reduced muscle tone in the back and legs, and this may be the cause of greater amounts of back pain (WebMD, 2001). Service

workers, who spend a fair amount of their day standing and walking, would be expected to have good muscle tone in the lower back and legs; therefore, the high prevalence of LBP in this group is hypothesized to be due to either (a) back strain from non-occupational activities, (b) improper posture while lifting or maneuvering objects at work, (c) very demanding physical requirements of the job, such as excessively heavy lifting or frequent and heavy lifting, or (d) job-related stress, such as lack of social support or time constraint, combined with (b) or (c) above.

Several studies reveal a negative association between back pain and higher levels of education. This relationship may be due to less flexibility in adaptive work modifications for positions employing less educated persons. In addition, there may be a tendency of lower-paid workers to return too soon after injury to a physically demanding job (Adera, 1988).

Education

Individuals with less education have been found to experience higher prevalences of pain. When comparing education level, Adera (1988) found that individuals who graduated from college (33.4% of total interviewed) were the least likely to have low back pain. Twenty seven percent of those with LBP and 34.5% of those without LBP had graduated college. For those who graduated high school (50.5% of total), about the same number had back pain as did not (52.8% and 50.1% respectively). Individuals without education or who had only completed elementary school (16% of total) were most likely to have LBP (20.2% with and 15.4% without LBP). These educational group differences were statistically significant ($p=0.01$).

Socioeconomic Status (SES)

Several studies have indicated that overall lower level of income, job status, and education, that is, lower socioeconomic status (SES) is associated with less accessibility and use of medical care, when compared to the more affluent sector of society. Individuals with lower SES tend to have higher morbidity (presence of illness) and a higher mortality rate (a lower age at death). Thus, it would not be surprising to find that lower SES is associated with a higher prevalence of pain and/or more untreated pain than occurs in other sectors of society.

Lower SES is indeed found to be associated with increased pain prevalence, even in countries where socialized medicine permits financially-equal access to health care. In

England, the more socially deprived groups reported higher prevalence of knee pain than did the less socially deprived groups (Urwin, et. al., 1998, cited in McCarney & Croft, 1999). Eachus, et. al. (1999), studied the experience of hip pain in southwestern England. A postal questionnaire, sent to an age and sex stratified random selection of about 26,000 people located 954 individuals with hip pain. The authors found that when holding age and gender constant in statistical analysis, severity of hip pain was associated with decreased educational attainment, decreased income, not owning a car, and living with others. In addition, the experience of pain was worse if the individual had multiple health problems (Eachus, et. al., 1999).

The experience of musculoskeletal pain severity in all parts of the body has also been found to be associated with SES. In a postal survey of approximately 10,000 randomly selected adults in Norway, Brekke, et. al. (2002), found that non-inflammatory musculoskeletal pain was experienced differentially by individuals living in the more affluent versus the less affluent locations. (Medical care is equally accessible to all individuals in Norway.) Holding subject age constant, the authors found that lesser affluence was associated with increased severity of pain (increased disability from pain and increased intensity of pain), and more widespread occurrence of pain, as well as a decreased sense of life satisfaction. After adjusting for pain severity, mental distress, age, education, and type of occupation, the less affluent group was found to utilize more analgesics and less personal self-care.

Some research reports only the relationship of income level (one portion of the total SES) to the pain experience. Crook, et. al. (1984) found that amongst individuals with chronic pain, the highest proportion, a total of 54%, were in the income bracket of \$11,000-30,000. In the study by Crook, et. al. (1984), sample size was 76, and seventy percent of the sample were of Anglo-Saxon ancestry. Sternbach (1986) reported that individuals with household incomes under \$15K were somewhat more likely to experience joint pains, while those with household incomes over \$50K were more likely to experience muscle pain; other correlations between pain and income were not remarkable. Adera (1988) evaluated data from the U.S. National Health and Nutrition Study, and found the highest prevalence of low back pain occurred among subjects in the income range of \$5K-10K (22.8%), followed closely by subjects whose earnings were in

the range of \$10K-15K (19.1%). The prevalence of LBP was lower for those with very low income (under \$5K; 13.3%) and moderate income (\$20-25K; 13.0%).

Despite these results, other studies conclude there is not a relationship between SES or income level and pain. In a review by Bongers, et. al. (1993), it was found that after controlling for physical load on the job, several studies did not support a strong predictive effect of low social class or poor education on the development of musculoskeletal pain.

Psychosocial factors and pain

As stated in this chapter's introduction, the IASP's definition states that pain incorporates both physical and emotional elements. Despite this more holistic view of pain, and despite the more recent pain theories that include social and learned experience, pain continues to be described and studied in terms of component parts (Grace, 2000). These separate factors can include mood as well as coping strategies, including social support.

Research suggesting that pain was not a purely sensory event and that pain perception could be substantially influenced by psychosocial factors was first published in the 1950's. Writing in the *Journal of the American Medical Association*, Beecher hypothesized that the psychological state of a patient could profoundly influence their request for pain medication. Beecher had been working with patients injured in World War II. Most denied having any pain from their extensive wounds, and only 25% requested medication for their pain. In contrast, civilians experiencing post surgical pain seemed to experience much greater pain from less extensive wounds, and 80% requested pain medication. Beecher proposed that emotional state and secondary gain (gaining attention from others, or release from routine responsibilities) would impact the perception and expression of pain.

Extensive research that has been done since the 1950's has supported and extended Beecher's seminal work. Variables that have since been found to moderate the pain experience include: mood, cognitive factors such as attention, ethnic group affiliation, perception of control over pain, environmental context (ie: workers' compensation status), interpersonal response to the pain experience (including social support and care provider's world view), and pain coping strategies (Bates, et. al., 1993,

1995, 1997, Boothby, et. al., 1999, Evers, et. al., 2001, Haythornthwaite, et. al., 1998, Jensen, et. al., 2002, McDermid, et. al., 1996, Stroud, et. al., 2000).

A combination of data from thirty studies reviewed by Bongers, et. al. (1993) indicated that the most likely psychosocial factors contributing to musculoskeletal illness in the occupational environment are monotonous work, time pressure, and perceived high work load. Each can independently show a relationship to musculoskeletal problems, although this is not consistent across all studies. Psychosocial factors are considered an important area for study, since heavy physical load, prolonged static load, and motor vehicle driving only explain 20% of back symptoms (Walsh, et. al., 1989, cited in Bongers, et. al., 1993).

Anxiety, depression, and daily stress

The affective and sensory components of pain appear to have a reciprocal relationship to each other; generally, the associated affect is negative (Fernandez & Turk, 1992). Many research studies have found an association between pain and anxiety and/or depression (Benjamin, et. al., 2000, Difede, et. al., 1997, Edwards, 2000, Magni, et. al., 1993, Magni, et. al., 1992, Robbins, et. al., 1990, Von Korff & Simon, 1996). While the direction of cause and effect is not clear, studies do indicate that an increased anxiety state or negative cognitions (as are often associated with depression) can result in report of a more severe pain experience (Baum, et. al., 1997, Stroud, et. al., 2000). Indicating that pain may *cause* depression or anxiety, Gatchel and Turk (1996) have pointed out that pain may be one of the most universal forms of stress. Sternbach (1986) reported a strong relationship between stress assessed by the Hassles scale, reported stress level, and the frequency of seven kinds of pain. Some studies have indicated that stress plays a role in development of musculoskeletal problems, even when other risk factors are controlled for (Bongers, et. al., 1993). In a 12-month cross-national study of pain at primary care clinics, Gureje (2001) found that persistent pain did not predict onset of a psychological disorder any better than psychological disorder predicted persistent pain. It seems pain can be both exacerbated by distress and a cause of distress. In addition to anxiety and depression, anger has also been associated with chronic pain (Turk & Flor, 1999).

While research with patients in pain clinics indicates that this group has a higher than normal proportion of psychiatric problems, a community study of pain symptoms by Edwards, et. al. (2000) also indicated a high degree of untreated psychopathology

associated with sub-clinical pain symptoms. Women who reported increased pain severity without having a pain-related diagnosis, tended to have increased levels of somatization, obsession-compulsion, interpersonal sensitivity, depression, anxiety, hostility, paranoid ideation, psychoticism, overall level of psychiatric distress, overall intensity of psychiatric symptoms, and overall number of symptoms experienced, when measured by the Symptom Checklist (SCL-90-R). As assessed by the Beck Depression Inventory (BDI), these primarily Anglo-American, middle class women experienced clinical levels of depression in association with the undiagnosed pain symptoms. The above mentioned research requires replication to establish generalizability, since the study population was gathered from volunteers at a shopping mall.

Using epidemiological data from the U.S. Hispanic Health and Nutrition Examination Survey (HHNES), Magni, et. al. (1993) found that 16.4% of persons with chronic pain were depressed, whereas 5.7% of subjects without chronic pain were depressed. Magni, et. al., (1992) found that 18.7% of Mexican-Americans and Cuban-Americans with abdominal pain also experienced depression to an extent likely to require intervention. Similar depression in Puerto Ricans occurred in 40.8% of individuals with abdominal pain.

Stress and coping

Coping seems to be a primary mediating factor between stress and illness. Individuals may use a variety of coping strategies in response to a stressor such as physical pain. For example, a person may decide to ignore the stressor (denial), or focus solely on the situation at the expense of other issues in life (hypervigilance). The focus may be either quite emotional (emotion-focussed) or quite cognitive (problem-focussed). The individual may take action to deal with the stressor (active coping) or wait for someone or something else to change the problem (passive coping). Other persons may be contacted for social support, but this can be either active or passive in nature, depending upon whether (1) the individual is going to use the social support as encouragement or as an informational or material support to engage a self-initiated resolution, or alternatively, (2) whether the social support is engaged to encourage others to take responsibility to remedy the situation. Spiritual coping is also a double-edged sword, in that an individual may gain hope and encouragement to take personal action from the spiritual activity. Alternatively, they may become (1) passive, waiting for a

“higher power” to remedy the situation, or (2) passive, and negative in their attitudes, if they maintain an expectation that they deserve this suffering for moral reasons and/or must endure more suffering.

Research on pain and coping frequently evaluates strategies according to groupings or composites that reflect qualities described, for example, as active versus passive, problem-focussed versus emotion-focused, or wellness-focused or illness-focused (Boothby, et. al., 1999). Some studies evaluate acceptance of the stressor versus avoidance of the stressor (Geisser, et.al., 1994, McCracken, L., 1998). Certain coping strategies or clusters of strategies are associated with greater health and recovery than are others. Generally, active coping (ie: activity, exercise, ignoring the pain) is associated with better psychological and physical functioning, whereas passive coping (ie: withdrawal, resting, medication use) is associated with poorer functioning (Boothby, et. al., 1999).

Geisser, et. al. (1994) found that chronic pain patients experienced worse adjustment to their illness, more severe pain, and more negative affect when using an avoidance strategy. In this study, 90% of the sample was Anglo; with mean years of education at 12.8.

Catastrophizing, specifically, was significantly related to negative affect, even after controlling for level of depression as measured on the Beck Depression Inventory (Geisser, et. al., 1994). In a review of research on pain and coping performed since 1991, Boothby, et. al. (1999) found that catastrophizing consistently predicted both psychological and physical dysfunction, including more psychological distress, higher rates of analgesic use, higher post-operative pain, poorer physical functioning and disability, higher ratings of pain intensity, more reported interference in daily activities by pain, lower levels of general activity, higher rates of psychosocial dysfunction, and reduced ability to work. Catastrophizing is commonly defined as use of “excessive and exaggerated negative self-statements when in pain” (Boothby, et. al., 1999).

Other individual coping strategies seem to have a less powerful association to the pain experience or to illness progression and adjustment. Ignoring pain, reinterpreting pain, and distraction or diverting attention do not have a strong independent relationship to functioning in chronic pain patients. However, in some studies, praying/hoping,

positive self-statements, rest, and wishful thinking do predict functioning, and the direction of the relationship is consistent across studies. (Boothby, et. al., 1999)

Chronic pain models that incorporate the coping response

The instinctive response to pain, that is avoidance and withdrawal from the aversive stimulus, has adaptive significance when the pain is acute and tissue healing needs to occur or when immediate danger of further injury is still present. For chronic pain patients, where no more tissue healing will occur, a continued use of this avoidance strategy can have negative adaptive value. Behavior, however, is not a component of the most popular theory of pain, Melzack and Wall's Gate Control Theory.

Philips (1987) proposed that avoidance and withdrawal strategies be included in a model of chronic pain behavior. This model suggests that behavioral avoidance sustains, *and* is sustained by, beliefs and cognitions. An individual may avoid not only the sensation of pain, but also all other activities in life, including social interaction, as a part of the avoidance process. These activities may simply be believed or expected to be able to aggravate pain sensation, and are thus avoided out of apprehension.

Turk and Flor (1999) discuss a biobehavioral model for chronic pain that they proposed in 1990, in which cognitive processing plays an important role. They cite coping responses of active avoidance, passive tolerance, or depressive withdrawal as possible factors that impact the course of the illness. Chronicity of the pain experience may be due to learning through respondent conditioning of fear of activity, including social, motor, and cognitive activity. Several studies suggest that successful rehabilitation of chronic pain patients occurs when there is an important cognitive shift from beliefs about helplessness and passivity to resourcefulness and ability to function regardless of pain (Turk, 1996).

Social Support

Social support is valuable to a person in distress, when the individual can receive emotional, financial, material, or informational support that is useful in coping with the stressor. Many studies indicate that individuals with more social support have better health and/or health improvement, indicating that social support might be an important mediating factor in the experience of pain.

Some research indicates that caretaker response to pain behaviors is associated with (1) increased expression of pain behaviors, and (2) experience of more severe pain

in the presence of the spouse (Turk, 1996). In contrast, Bates and colleagues (1995, 1997) found that although Puerto Ricans in Puerto Rico express more pain behaviors and local physicians respond more empathetically to this behavior, these patients do not experience any decrease in adaptation to chronic pain than do U.S. patients in U.S. clinics who do not express pain behaviors. In a study by Kleinke (1992), a cluster of pain-coping strategies called “Social support” (ie: seeking emotional support from others) was negatively associated with psychological distress (Boothby, et. al., 1999).

To investigate the relationship between social support and pain patients with rheumatic disease, Savelkoul, et. al. (2000) used path analysis to determine whether (a) social support contributed to coping which then contributed to the pain experience, (b) coping contributed to social support, which then contributed to the pain experience, or (c) both coping and social support interacted reciprocally to contribute to the pain experience. The authors classified coping strategies according to the two dimensions of (1) emotion-focused versus problem-focused and (2) approach versus avoidance. The authors concluded that passive coping by avoidance influences social support in a negative way, resulting in a less supportive environment and a decrease in the individual’s subjective well-being (Savelkoul, et. al., 2000).

In the workplace, perceived poor social support from colleagues and superiors has been found to be associated with reported back pain (reported in Bongers, et. al., 1993). In their review of psychosocial factors at work, Bongers, et. al. (1993) conclude that while social support at work, as a single factor in relation to pain, produces mixed results, decreased social support at work in combination with high job demands is consistently related to musculoskeletal trouble.

Family or “kin networks” may be a source of considerable assistance for sick persons in the Hispanic ethnic group. Schensul and Schensul (1982), found that Puerto Ricans in a small northeastern U.S. town received assistance from such networks, called “compadrazgo”, in selecting and negotiating entry to both institutional health resources (such as biomedical clinics) and noninstitutional help (such as espiritistas, or spiritual healers) (cited in Freund & McGuire, 1998, p.169). In such a system, the family or network of trusted community is essentially the health educator for sick individuals.

Zea (1995) suggests that Hispanic cultural values of allocentrism, familialism, and simpatia promote a great deal of social support between family or community group

members. Hispanic male and female gender roles can also contribute to social support within a family unit. As mentioned above in regards to social support in general, each family must be assessed individually, since social support may actually hinder the recovery of a patient. Individuals with less power in the family, including children, the elderly, and the disabled, are at risk for negligent care or even abuse (Steinmetz, 1988; Straus, et. al., 1980, as cited in Freund & McGuire, 1998, p.170).

The actual social support given to Mexican-origin women during their perinatal period was evaluated by Clark (2001) from both an emic (participant experience) and an etic (researcher experience) perspective. Participants ranged from first to fifth generation American (U.S. resident) and represented a wide range of income and acculturation levels. Despite cultural traditions of familialism, only about half the participants had extensive social support. The other women were either disconnected from their potential support network, or dealt with a great deal of antagonism from or instability within their support system. In addition, the participant's assessment (emic perspective) of support was consistently higher than that of the researcher (etic perspective); participants viewed members of their support system in a more optimistic light (Clark, 2001).

Culture's impact on cognitions, emotions, and behaviors regarding pain

Through learning, an individual's cultural background influences their beliefs and expectancies in regards to pain. In addition, culture impacts one's choice of coping strategies and ways of interacting socially.

Prellow, et. al. (2000) evaluated dispositional coping styles in Mexican-American immigrant and Anglo-American mothers from the community, using a modification of the COPE instrument. COPE is a measure of coping behaviors termed active coping, planning, restraint coping, seeking social support for instrumental reasons, seeking social support for emotional reasons, positive reinterpretation and growth, acceptance, denial, alcohol-drug disengagement, and mental disengagement that was developed by Carver, Scheier, and Weintraub in 1989. The authors of this study suggest that differences between the two groups may be related to Mexican-American cultural scripts of "simpatia" and "familialism" (Prellow, et.al., 2000).

Seven scales were demonstrated to be cross culturally/ethnically equivalent (restraint, seeking support for emotional reasons, seeking support for instrumental reasons, acceptance, denial, focus on venting of emotion, and humor); however, with the

exception of denial, Mexican-American mothers tended to rate these items lower than Anglo-American mothers. Denial was rated higher by Mexican-American mothers. Mexican-American mothers also tended to use more social-support related strategies, as opposed to individual specific strategies, such as positive interpretation and growth, active coping, and planning. Most Mexican-American mothers stated that they did not use alcohol or drugs to cope (Prelow, et. al., 2000). The coping strategies found in this study may be typical of Mexican-American immigrants. However, the influence of acculturation (the process whereby an individual assimilates the cultural beliefs and values from a different ethnic or cultural group) and lower SES were not assessed, so these strategies may not be attributable solely to ethnic beliefs.

Culture and pain

Attitudes, feelings and expression

Several studies have shown that the cultural components of the pain experience do vary between different ethnic groups. The pain responses of an individual from an ethnic group do not, however, necessarily follow the ethnic group norm. Socioeconomic status as well as acculturation may account for a substantial portion of such intra-ethnic variation (Lipton & Marbach, 1984). Social interaction influences the pain experience through learning. Bates (1987) suggests that an individual learns about pain experience, response, and expression through social comparison with the family group, and the larger community or ethnic group.

Pain threshold, the physiological level at which one can sense pain, does not appear to vary between racial or ethnic groups; however, some experimental studies indicate that racial or ethnic groups, such as African-Americans and Hispanic-Americans have a lower pain tolerance than others (Morris, 2001, Edwards, et. al., 2001, Zatzick & Dimsdale, 1990 - cited in Moore and Brodsgaard, 1999). Physiological variation in pain sensation would not be expected to vary between groups, since evidence from advanced genomics research indicates that all humans are almost identical genetically (Morris, 2001, Edwards, et. al., 2001). Because it seems most laboratory pain studies used Anglo-American experimenters to inflict the painful stimulus, tolerance findings for ethnic groups may be in question (Edwards, et. al., 2001, Zatzick & Dimsdale, 1990 - cited in Moore and Brodsgaard, 1999). Group differences in pain tolerance or in ways of

expressing pain are most likely a result of differences in attitudes and beliefs as well as values related to pain or illness. These may well derive from social learning, or cultural experience in one's background. Edwards (2001) suggests that the study of race, ethnicity, and pain can only be relevant if one considers social, political, and cultural effects.

There has been limited research on the pain experienced by members of marginalized minority groups. Calvillo and Flaskerud (1991) concluded that recent studies or replications of outdated studies that examine the influence of culture upon the pain experience had not been conducted in the recent past, that literature on ethnicity and pain was limited, and that research regarding the Mexican-American experience of pain was almost non-existent. They recommended qualitative studies that explore and describe cultural beliefs, values, and practices with respect to pain, the perception of pain, the response to pain, and the management of pain.

Attitudes, feelings, and expression: inter- and intra-group differences

Clinical research indicating considerable differences in the pain experience between ethnic groups began with Zborowski's work in the northeastern United States (1952). Research participants were composed of 146 male Veterans of WWII from lower and lower-middle class backgrounds. Utilizing informal, open ended interviews, Zborowski observed that individuals from certain ethnic groups expressed their pain experience in culturally consistent ways. Different attitudes and beliefs about pain were observed in four American groups of the following ethnic identification: Jewish, Italian, Irish, and "Old American". Old Americans were individuals who were native born, had at least 3 generations of ancestors living in the United States, and who did not personally identify with any particular ethnic group.

Zborowski concluded that Old Americans (Anglos) utilized minimal pain vocalizations in the health care setting and tended to believe that a good patient does not annoy anyone with their pain experience. When in severe pain, their behavior was to withdraw physically and socially, in order to reduce pain and reduce pity. Anglos valued "stoicism". The stoic, or "private" pain experience was strongest in the Irish American group.

In contrast, Italian Americans and Jewish Americans utilized multiple and varied vocalizations. They appeared very emotional and were believed by caretakers to be

“exaggerating” their pain. The Jewish Americans tended to resist taking medications, and even when relieved of the pain sensation by medications, still felt considerable distress about their medical condition. Zborowski referred to this anxiety about the outcome of treatment as “future orientation”. The Italian Americans were quite agreeable when presented with medication, and once medicated, were quite satisfied with their condition. Zborowski referred to this attitude as “present orientation”. The author commented that individuals with a present orientation could be simply treated for their pain sensation, while patients with a future orientation must also be treated for their psychological/emotional state. Due to these differences in “time orientation”, the type of pain behavior (stoic versus expressive) did not relate directly to the type of intervention that would be most successful (Zborowski, 1952). Zborowski’s conclusions point to the need to assess meanings and attitudes related to pain, even when observable pain response appears similar.

Zborowski’s findings have inspired a number of studies on culture and pain. Encandela (1993) emphasized including the complex entity of chronic pain as among the six broad areas of pain recommended for the study by social scientists. Specifically, he suggested building upon Zborowski’s work to describe experiences and responses among groups of pain sufferers defined by such variables as age, gender, race, class, religion, and occupation, and to explore how these variables influence the manner in which pain is felt and expressed.

Koopman and colleagues (1984) studied ethnic differences in pain expression between Italian Americans (IA) and Anglo-Americans (AA) in the NE U.S. Sixty three percent of the IAs reported pain, compared to only 30% of the AAs. Both age and gender were found to interact with expression of distress, and emotional distress was not significantly associated with ethnicity. Older (>59 years) Anglos were less expressive, and older Italians were expressed more distress, reflecting the findings of Zborowski. The authors suggested that these older individuals were more socialized to ethnic group expression than were the younger patients (Koopman, et. al., 1984).

Lipton and Marbach (1984) describe a number of studies following Zborowski’s that have compared pain experiences of different ethnic groups. The various studies focused on a number of factors, such as response to pain symptoms, anxiety and attitudes toward pain, physiological awareness and subjective pain after surgical procedure, and

history of parents' pain expressiveness. Inter-ethnic differences were found in most studies. Intra-ethnic differences were not evaluated.

To further investigate inter- as well as intra-ethnic variation in the pain experience, Lipton and Marbach (1984) used a sample of 465 consecutive patients just before their first visit to a facial pain clinic in Boston, northwestern U.S.A. The ethnic ancestry of these patients included African-American, Irish, Italian, Jewish, Puerto Rican, "Other White" Catholic, and "Other White" Protestant. Fifty randomly sampled individuals from the non-Anglo groups were questioned on 35 items relating to the pain experience. The variable of interest was the pain experience - physical, cognitive interpretation of, emotional response to, and effect upon social interaction and daily activities. Independent variables included socio-demographic background, social assimilation, cultural assimilation (acculturation), level of psychological distress, history of pain symptoms, and (following a clinical exam by a physician) a positive or negative diagnosis of temporomandibular joint syndrome (TMJS, also known as temporomandibular dysfunction, TMD). About one third of the total responses evaluated indicated inter-ethnic differences in the pain response. The authors suggested that this degree of difference may be greater in the non-clinical population, since individuals who already accept and interact with the allopathic or western medical care system are already somewhat acculturated to middle-class Anglo-American values. Intra-ethnic variation in the pain experience differed depending on the group; emphasizing the inappropriateness of evaluating an individual patient's pain behavior solely according to group stereotypes (Lipton & Marbach, 1984).

Lipton & Marbach's (1984) study also found that African-Americans and Puerto Rican-Americans had less education and lower income levels, and were also less likely to consult three or more physicians for their pain condition. Puerto Rican-Americans were the only group to have recently immigrated to the United States. African-American, Puerto Rican-American, and Jewish-American groups scored higher on ethnocentrism, and Puerto Rican-American and Irish-American groups identified less with being "American". The Puerto Rican-American (P.R.A.) group's pain experience was the most different from other groups. This group had less knowledge about health matters, experienced more psychological distress, were more likely to "lose control" when describing their pain, were more dependent when ill, and were less likely to hide pain

from their family. The P.R.A. group included a higher percentage of males as well as a higher percentage of positive TMJS diagnoses than other groups. It was unclear whether the interethnic differences were a reflection of underlying differences in socioeconomic status and “culture shock” (from a recent immigrant’s adjustment to the major change of a new culture), or whether they resulted from cultural differences in ethnic beliefs and values.

Greenwald (1991) studied 536 cancer patients, 95% of whom were born in the U.S. Age of participants ranged from 20 to 80. Ethnicity was the independent variable, and it was assessed using a self report of personal group (or groups) identification similar to that used by the U.S. Census Bureau. Ethnic groups included were: England, Scotland, and Wales; Germany; Ireland; Scandinavia; France; Eastern Europe; Italy; and Jewish (if either or both parents were Jewish). The pain experience was assessed using graphic ratings scales, and the McGill Pain Questionnaire (MPQ). There did not seem to be substantial differences in the pain experience between groups, although a few responded with a statistically lower score on the affective portion of the MPQ. Groups apparently feeling equal pain sensation, but less distress were: England, Scotland, and Wales; Germany; Scandinavia; and Italy. This finding for the Italian ethnic group seems to contradict the earlier finding by Zborowski that Italians are more emotional about their pain, but it could be explained by the increased levels of acculturation that have occurred for this ethnic group of participants since WWII when Zborowski did his research.

Puerto Ricans and pain

An extensive study investigating ethnic differences in the pain experience was done by Bates and colleagues (1992, 1993, 1994, 1995, 1996, 1997). Study participants were of several ethnic backgrounds and were located either in the care context of a northeastern U.S.A. clinic or in the context of a Puerto Rican clinic for treatment of chronic pain. Although Puerto Rico is technically a part of the United States, and the medical care system in Puerto Rico is very similar to that in the U.S., this was essentially a cross-national study of the chronic pain experience. In the New England clinic, investigators were able to sample the following ethnic groups of Americans: African-American, French Canadian, Irish, Italian, Hispanic (Latino), Polish, and as in the Zborowski research “Old Americans”. The latter might also identify as a group with “New Englanders” or “Yankees” or just “Americans”. There were not enough African-

American participants to include this group in the analysis. The research method incorporated survey instruments and personal interviews that collect both quantitative and qualitative information; the research group followed several individuals over time (Bates and colleagues, 1992, 1993, 1994, 1995, 1996, 1997).

Bates & Rankin-Hill (1994) concluded that there were significant intra- as well as inter-group variations in the pain experience; however, ethnic/cultural group identification and locus of control (LOC) style were the factors most associated with statistically significant and qualitative differences in pain intensity, pain responses, and adaptation to the chronic pain experience. Thus, variation in the pain experience may reflect a difference in attitudes, beliefs, and emotional/psychological states between individuals of different cultural background, or of different LOC style.

In a number of studies, chronic pain populations have been shown to demonstrate a positive relationship between internal LOC over health events and decreased pain and distress (Turk, 1996). Locus of control is a construct originally developed by Rotter for application to social learning theory. A person with a high “internal” attribution of control over his or her life is more likely to learn from experience and to believe that they can personally influence their fate. An individual with an “external” attribution of control tends to believe their life is controlled by external factors, such as chance, luck, or the actions of other people (Gatchel and Weisberg, 2000).

Bates, Edwards, and Anderson (1993) found some relationship between acculturation and the pain experience. The authors reported that intra-group variation in pain intensity was most associated with the degree of “heritage consistency” (see Glossary) and the LOC style, although this was statistically significant only in the French Canadian and Irish groups. A higher mean of pain intensity was associated with a more external LOC style in the Hispanic group.

In regards to acculturation, pain response varied in relation to generation. The first generation persons with a high degree of heritage consistency experienced less severe responses to pain in the form of self-reported depression, fear, and worry (Bates, Edwards, and Anderson, 1993). This finding may relate to a finding by Sternbach (1986) that first generation individuals suffer more dental pain, but second and third generation individuals experience more headaches, backaches, muscle pains, and stomach pains.

Using qualitative interviewing techniques, Bates, et.al. (1995) found that Anglo-Americans and Puerto Ricans differed in their pain-related beliefs, including belief in the efficacy of biomedical procedures. To a greater degree than Puerto Ricans, Anglo-Americans were accustomed to the biomedical world view of the body and were interested in participating in biomedical procedures that might reduce their pain. Such treatments include nerve blocks, epidural steroid injections, or intravenous medications. In addition, if the Anglo-American patient did not find complete cure through one of these interventions, they tended to pursue second or third medical opinions and to try additional biomedical procedures, rather than to accept their health status after the first intervention (Bates, et.al. 1995).

For the Puerto Rican group, Bates, et.al. (1995) found gender and employment status to be related to differences in pain response and acceptance. When it led to unemployment, some men had difficulty accepting their illness status to the degree that they were found to experience more depression, including suicidal ideation, than women. This may relate to traditional culturally shaped Hispanic beliefs about being a “man”. This gender role implies that a man maintain the ability to be a good provider for his family, as well as control his destiny and be self-sufficient. For Puerto Rican women, two of the most distressing aspects of their chronic pain also pertained to traditional gender roles; the illness interfered with their ability to provide social support to family and friends, and to keep a clean house (Bates, et.al., 1995).

Bates, et. al. (1995, 1997) concluded that although the Puerto Rican population reported greater pain intensity and presented more emotional responses to pain than did the New England population, there was not a significant difference between the two groups with regard to interference with daily activities. Both groups seemed to have adapted equally well to their medical condition, despite their expression of “pain behaviors”.

Differences in health care between New England and Puerto Rico were reported by Bates, Rankin-Hill, & Sanchez-Ayendez (1997). Health care providers in Puerto Rico seemed to be more responsive and accepting of Hispanic pain attitudes and expressive pain behaviors than providers in New England. The providers (and most of the patients) in the New England study believed in mind/body dualism, whereas the Puerto Rican providers (and most of the patients) believed in mind/body integration. While the New

England patients typically resist the suggestion of psychological consult for their pain as indicating the physician did not consider their pain as “real” or that the physician thought the pain was “all in their head”, Puerto Rican patients did not resist such a consult or express anger about it. Puerto Rican providers created a more personal relationship with their patients, for example, taking the time to listen to the patient’s reports of emotional distress or family/social concerns in addition to their report of physical symptoms. This provider style is congruent with more expressive pain behavior. Among the New England providers, expressive pain behaviors would most often be viewed as “too emotional” (Bates, Rankin-Hill, & Sanchez-Ayendez, 1997).

Differences were found to exist in regards to caretakers and patients attitudes about individual versus collective responsibility for management of the pain experience (Bates, Rankin-Hill, & Sanchez-Ayendez, 1997). In New England, treatment stresses individual responsibility, using behavior modification (such as stress reduction techniques) and cognitive therapy (such as reframing or distraction techniques). The authors refer to this tendency as one that sets a goal to eliminate “deviant behavior”, that is, behavior that deviates from the social norm, such as failing to fulfill one’s social role obligations, and expressing pain verbally and behaviorally. In Puerto Rico, treatment stresses family involvement. The individual is not solely responsible for control of their pain and fulfillment of their social obligations. This difference again draws upon the view of mind/body as separate or whole, in that the New England clinic is more focused on treating the “sickness”, and viewing the individual as an autonomous unit, independent of and isolated from other individuals and the social and cultural contexts. The Puerto Rican clinic is more focused on treating the “illness” (the sickness with related suffering and disability), viewing the patient as interdependent with the social and cultural environment (Bates, Rankin-Hill, & Sanchez-Ayendez, 1997).

Mexican-Americans and pain

Because Hispanic culture has many similarities despite differences in national origin, Mexican-Americans might be expected to show an intra-group difference relating to acculturation, relational expectations, and pain expressions that are similar to those of Puerto Ricans. With special focus on response to pain by Mexican-Americans, Calvillo and Flaskerud (1991) investigated the literature on culture and pain experienced by adults in the U.S.. The authors found cultural variations were often inconclusive (or conflicting)

due to variations in experimental method. Social class and education seemed to account for much of the variation within and between cultural groups. However, they concluded that culture does play a role, and that role is attitudinal. An individual's attitude toward (the evaluation of) pain is influenced by cultural values, beliefs, and conditions.

Among Mexican-Americans, adherence to traditional ethnic health beliefs is directly related to the degree of acculturation of the Mexican-American individual. For the individual with traditional Hispanic health/illness beliefs, stoicism and self-restraint are valued. Furthermore, it is culturally acceptable for these patients to moan or cry-out when uncomfortable. Within the traditional Hispanic culture, such expressive pain behavior is not expected to be related to the intensity of the pain or to the individual's ability to maintain self-control (Calvillo and Flaskerud, 1991).

In a later study, Calvillo and Flaskerud (1993) found that while there was no significant difference between the measures of cholecystectomy pain in Mexican-American and Anglo-American women patients, nurses judged a patient's pain to be less than the patient's rating, and nurses attributed more pain to the Anglo-Americans than to the Mexican-Americans. (A cholecystectomy is a surgical procedure that removes the gall bladder.) The higher pain judgement for Anglos was not confounded by ethnicity of the nurse, but was significantly correlated with increased patient education level, blue-collar employment, birth within the U.S., fluency in English, and Protestant religion (Calvillo and Flaskerud, 1993, cited in Moore & Brodsgaard, 1999).

Pain treatments and ethnic group

About half the studies evaluating race and/or ethnicity indicate that minority patients receive less pain medication, particularly in regards to narcotics (Bonham, 2001). In a study by Ng and colleagues (1996) Hispanic-Americans (primarily Mexican-Americans) were the least likely to receive narcotics; Anglo-Americans were prescribed most, followed by African Americans and then Asians. The authors found no differences between groups in the amount of self-administered narcotic. After statistically controlling for age, gender, preoperative use of narcotics, pain site, and insurance status, Ng and colleagues (1996) concluded that a patients' ethnicity had a greater effect on the amount of narcotic prescribed by the physician than on the amount of self-administered narcotic. Todd and colleagues (1993) found that Hispanic-Americans were more than

twice as likely as Non-Hispanic Anglo-Americans to receive no pain medication at all for treatment of long-bone fracture in the Emergency Room setting.

While factors of race or ethnicity may not be the most significant factors contributing to the pain experience, possible explanations for differential treatment include racism, bias by health care providers, language barriers, other cultural barriers that impede communication, cultural beliefs about using medication or expressing pain, socio-economic factors, and gaps in health care providers' understanding of how to accurately assess pain.

Narrative studies – Meanings associated with pain

Society and culture impart symbolization and meaning to the pain experience. Turk and Flor (1999) suggest that meaning is an important factor that determines pain tolerance, and that for the clinician, knowing the meaning an individual applies to their pain may be as important as knowing the cause – or for persistent pain, perhaps more important. Barkwell (1991) found that meaning had more influence on the pain level, depression level, and coping scores of terminal-stage cancer patients than did access to the palliative care unit (PCU) or medication level.

In regards to cultural impact upon the pain experience, it is interesting that Hilbert (1984) has suggested that chronic pain is in fact acultural. His explanation is that folklore about pain includes the belief that pain will eventually dissipate or can be treated. Yet, chronic pain does not resolve or dissipate. It often defies a biological definition and is thus somewhat of a mystery to modern medicine. As a result of being “acultural”, the experience of persistent pain requires that sufferers construct supplemental realities within which their pain can be understood. Social interaction that takes place within a culture or sub-culture allows such new meanings to be created. The occupational sub-culture is often a contributor to this social construction of meaning (Hilbert, 1984). For example, chronic pain may be seen as a normal dimension of working in a high-risk occupation. Because chronic pain is acultural, ethnic background may not be the only social source of beliefs and values applied to the pain experience.

Hilbert (1984) interviewed 22 chronic pain patients in a clinical setting. In regards to pain expression, the author found that many individuals choose to conceal their pain. Reasons given for this most often derived from a respect for the proscriptions

against complaining, initiating depressing discussion, or lowering social spirits. All interviewees stated that they were not complainers, did not believe in soliciting sympathy, and did not burden others with their troubles. Some expressed concern that the response to their news would be unpleasant, as they had experienced unwelcome speculation, interpretation, and judgements concerning their affliction, their mental health, or their character (Hilbert, 1984).

Helman (1994) states that chronic pain is usually “private” pain, that is, it is not revealed or expressed publicly. Hilbert (1984) confirms this, and suggests that because construction of meaning requires interaction between people, chronic pain sufferers are placed in a bind. To be socially accepted, they cannot express their uniquely individual pain experience, and yet they require social interaction to find meaning in their suffering. Thus, Hilbert (1984) concludes that their isolation is reminiscent of Emile Durkheim’s original meaning of anomie – a condition associated with suicidal depression. Ethnicity and SES of participants in the Hilbert (1984) study are not reported; gender was equally represented, average age was late 30’s, and most came from a rural or small town setting. It would seem from this argument that social interaction is a key factor in promoting acceptance of persistent pain, as well as perhaps lessening co-morbid depression.

As Hilbert (1984) points out, meaning occurs in the relationship between people. Construction of this symbolism or meaning can take place in many forms: discourse, conversation, music, dance, gesture, image, or even the absence of these, such as in pauses between words, or silence between people (Parker, 1990, 1992, as cited in Aldrich and Eccleston, 2000). Medical, psychological, and other academic texts, popular and professional media, and focus group conversations that provided statements about pain were evaluated by Aldrich and Eccleston (2000). These written sources of cultural meaning generated a set of 80 statements that were presented to a diverse set of 95 individuals. After analysis, 8 factors explaining pain were determined: (1) Pain as a signal of malfunction – this fits with the view of the body as machine; (2) Pain as self-growth – in other words, pain is ever-present, so it might as well be used as a stimulus for personal growth and change; (3) Pain as spiritual growth – being ever-present, one must learn to transcend this suffering in pain through one’s spiritual growth; (4) Pain as an alien invasion – in other words, pain has no redeeming value and is a negative agent outside the “self” that must be attacked, as an enemy; before it destroys the “self”; (5)

Pain as coping and control – in other words, the pain is to be conquered, and meanwhile, it is useful and needs to be tended to; (6) Pain as abuse – this pain results, for example, from a power differential between persons; it has no redeeming value and is confronted and accepted through controlling one’s response while suffering; (7) Pain as a homeostatic mechanism – in other words, pain signals malfunction, yet much of this is to be expected as part of living; (8) Pain as power – in other words, pain can be many things besides physical; it is ever-present; and it can be shared with/inflicted upon others for personal gain, not in a malicious or abusive way, but rather to promote emotional release or empathic sharing/connection (Aldrich and Eccleston, 2000).

All of these meanings imply that pain is suffering, and that pain has the ability to change the individual (it is threatening to “self”); however, some meanings hold a more negative and/or a more threatened posture than do others. This study points to the diversity of meanings that are possible with pain, ranging, for example, from the idea that pain is purely physical to the idea that pain is broad and encompasses many kinds of suffering. Through description of nuances in meaning, pain can be seen to be more or less threatening, depending upon the attitude one takes or the meaning one ascribes to pain. Aldrich & Eccleston (2000) echo Hilbert’s (1984) understanding of chronic pain by concluding that the experience of chronic pain impacts the individual socially, moving them inwards and away from social interchange in a form of “social implosion”.

Coping and adjustment narratives regarding pain

An individual will engage coping strategies to attempt to master a threatening situation, such as pain. Barkwell (1991) investigated the cognitive coping strategies, including ascribed meaning of pain, for 100 community-based, terminal-stage cancer patients in Canada. Three groupings of meaning were utilized by most of the patients. These were: (1) Pain is a challenge – patients were determined to do something about the pain; (2) Pain is the enemy – patients felt attacked and suffered feelings of helplessness and loss; and (3) Pain is punishment – patients felt punished, or wondered if they deserved the pain as a result of a previous wrongful deed. These three factors had different associations to degree of pain experienced, coping, and depression. Patients who saw their pain as a challenge had significantly lower depression scores, lower pain scores, and higher coping scores than those who saw their pain as enemy, or punishment. Furthermore, the different kinds of meaning were more highly associated

with degree of pain experienced than was differential access to the PCU or medication level (Barkwell, 1991).

Kugelmann (1999) interviewed 14 working class people who were attending a chronic pain management clinic in North Texas. The participants had been employed as assembly line workers, janitors, warehouse workers, and food service workers. Ethnicity was primarily Anglo-American (n=11), with two African-Americans, and one Hispanic - American. The author considered the terms with which chronic pain was described in narratives, as the patients attempted to make sense of the pain in terms of “polarities of mind and body”. The author concluded that these chronic pain patients were challenged by interpretations of pain that were vastly opposed to each other and that were, at the same time, subjective experiences. Thus, the individuals patient became “responsible for” their pain as they struggled to make sense of the experience and to convince others, who could not observe the pain, that it was a true experience. The author’s emphasis is less upon the social interaction of meaning making and more upon the internal chaos the individual suffers after the chronic pain changes their life, and they have been exposed to pain management training. “Polarities” that Kugelmann (1999) finds from narrative analysis are: (1) Stress vs. relaxation; (2) Physical vs. emotional pain; (3) Positive vs. negative thinking; (4) Pain is visible vs. invisible; and (5) Mind vs. body. According to the author, the “voice” of pain is found in individual complaints, that is, in laments and protests, about physical concerns and social consequences of illness.

It is possible that the findings of Kugelmann (1999) do not reflect all aspects of the chronic pain experience, since an individual’s narrative changes over time. How long the participants had suffered with pain was not reported. When studying pain, culture and locus of control, Bates and Rankin-Hill (1994) noted that LOC style may change during the course of the chronic pain experience. Using retrospective report, it appears that individuals who felt they had a strong sense of control over their lives prior to the pain experience, and who regained a sense of control after adaptation to the chronic condition, still experienced a period of 6-24 months after the onset if pain during which they felt a loss of control over their lives (Bates and Rankin-Hill, 1994).

Soderberg, et. al. (1999) have explored the experience of chronic pain through the narratives of 14 women diagnosed with Fibromyalgia Syndrome. This condition is often associated with fatigue as well as pain, and those afflicted typically become quite

disabled despite the absence of any visible bodily change or medically objective finding of a cause. The stories in the Soderberg (1999) study reveal that the quality and content of the narrative changes with time, as the afflicted individual comes to accept their condition and learns to adapt to a life of chronic illness. In this study, three themes were revealed: (1) Loss of freedom; (2) Threat to integrity; and (3) Struggle to achieve understanding and relief. The theme of Loss was associated with loss of energy, financial support, and former life activity and identity, as well as difficulty accepting the altered experience of body and self. Threat to integrity resulted from the loss of credibility and isolation experienced in having an invisible illness and disability as well as the negative response of society to this particular diagnosis. (This is similar to the isolation described by Hilbert, 1984.) The theme of Struggle involved the attempt to explain or understand what had happened, or to make meaning out of the experience, as well as the attempt to learn ways to find relief and restructure one's life in a changed, but productive manner (Soderberg, et. al., 1999).

The process of adjustment to chronic illness in general appears to follow a similar change in narrative. McWilliam, et. al. (1996) described the following themes from meaning, motive, intention, and emotion common to the chronically ill elderly: (1) Re-defining the meaning of health; (2) Learning to balance one's desires with practical limitations of the illness; (3) Struggling with limitations of the health care system; (4) Resigning oneself to the changed life conditions; (5) Discovering creative solutions to specific challenges of the illness; (6) Accepting this new life with limitations; (7) Mobilizing social, professional, fiscal, and physical resources that could help compensate for disabilities; (8) Drawing in individual-specific strategies for coping and living, such as creating a sense of purpose, consciously attending to attitude, drawing upon personal strengths, setting and striving for specific goals, talking to oneself in a positive way, focussing on challenges one day at a time, maintaining control of personal decision-making, or reframing expectations for life and self; and (9) Developing strategies that promote well-being by actively engaging with one's environment, such as creating alternative re-arrangements in the living space, making positive comparison with others, mobilizing social reciprocity, talking to others, drawing on positive family/spousal patterns for dealing with adversity, or drawing on environmental esthetics. The

participants in this study were English-speaking Anglos, over the age of 65, who had recently been released from the hospital to their home (McWilliam, et. al., 1996).

Mexican-American pain narratives

Villarruel (1995) interviewed 20 key informants and 14 general informants from a Mexican-American community in a Mid-western U.S. city about their pain experience. Interviews lasted from 30 minutes to ten hours. The author found four themes relating to pain meanings, expressions, care of self, care for other, and care by others. These were as follows: (1) Pain is an encompassing experience of suffering that is associated with loss. It has personal, interpersonal, social, and spiritual dimensions in addition to the physical dimension; (2) Pain is an accepted obligation of life and of one's role within the family. It is a burden one must bear so as not to inflict pain on others. (This was evident in women, in particular.); (3) To endure pain stoically is expected and esteemed. Pain should be hidden, and the ability to do so reflects strength. (Men, in particular, would not express pain outside the family.); (4) The primacy of caring for others is the essence of the family. Do not burden your family, and help others in pain in any way you can (Villarruel, 1995).

The latter theme confirms the findings by Bates, et. al. (1997) that responsibility for pain management is shared, and this is illustrated by the following interview statement: "People should take responsibility away from the one . . . who is in pain. Take care of them" (Villarruel, 1995). Villarruel (1995) also found evidence that an array of specific medicines or remedies were used, including heat, liniments, poultices, herbs, teas, medicines from Mexico, massage, and exercise.

Clark (2001) used narrative analysis to explore ethnic differences in social support during the perinatal period, which is a time of change and increased stress. Themes of support for women of Mexican origin were found to include: (1) Helping with daily hassles (providing material support); (2) Showing love and understanding (providing concern and affection); and (3) Being there for me (providing steady commitment to the relationship) (Clark, 2001).

Personal narrative is a story about one's perception of the world and one's interaction with that environment. It is not fixed, but changing, as it is told and retold. Freund & McGuire (1999a) state that when pain threatens one's integrity as a person and one's physical existence, it becomes suffering. At this point there is a threat to the

coherence of one's world that causes them to seek meaning and order. Narrative can allow an individual to make sense out of chronic pain.

Because chronic pain becomes so individualized an experience (and perhaps because pain clinic patients are so eager to talk about their pain), several studies of chronic pain have used the narrative method of investigation. This allows access to a great deal of qualitative information, such as the meaning an individual places on the illness or on suffering through the use of an ideographic research strategy. Some studies of culture and pain have used the qualitative method of narrative analysis, and several authors recommend that any cultural study utilize at least some degree of open-ended interviewing (Ailinger, 1995, Goodwin, 1999).

Illness theory and health beliefs

Illness theory pertains to the pain experience, because individuals interpret pain symptoms differently. Some will consider pain to be of great inconvenience and concern, while others may ignore the pain or think it is of little concern unless it is, for example, associated with bleeding. Bates, Edwards, & Anderson (1993) as well as Turk and colleagues (1987, cited in Bates, et. al., 1993) have suggested that social modeling and group pressure influence the pain experience and pain tolerance levels.

Zola

Zola (1966) discussed the influence of culture upon the symptoms of illness, that is, upon the specific complaints an individual presents to the medical doctor. The author concluded from his study that there may be “systematic variability with which bodily conditions are perceived and communicated” (p. 626). This may account for who goes to the medical doctor, as well as for epidemiological differences in health among different groups within the general population. Such a selective process of attention could allow a problem in one culture to be ignored by those in another culture in one of two ways. First, the actual prevalence of the sign of the medical condition could be so prevalent as to seem “normal” within a group. In this case, it is perceived to be “unremarkable” by members of the group despite their suffering. For example, Zola (1966) describes a study of lower SES mothers who were required to keep a diary of health over a four week period. Seventy eight women were instructed to report all bodily states, yet only 14 noted the occurrence of menses or its associated symptoms. Second, the problem may be

congruent with dominant (majority) value-orientations. For example, childbirth or certain community rituals may be anticipated and considered acceptable, despite associated suffering.

Ethnomedical science

In 1975, Fabrega wrote in *Science* magazine, that there existed a need for an “ethnomedical science”. This cultural area of study would examine how members of different cultures think about disease, how they organize themselves toward medical treatment, and what the social organization of treatment was itself. In biomedicine, the disease signifies an abstract biological “thing” or condition that is generally considered independent of social behavior. However, the language of disease among lay people actually allows individuals to work together to make social sense of disease, and to maintain social order. The disease only becomes significant to people at the point when it causes an interference with the social behavior or the fulfillment of social role(s) by the individual. Fabrega (1975) contrasted the last 200 years of biomedicine, in which scientific cures focus on the individual, with prior medical practice, where disease was noted by social and behavioral changes and where cures targeted not just the individual but also the family and social group. In those earlier times, health was achieved through human kinds’ “unique capacity for symbolization and culture” (Fabrega, 1975).

Mechanic

A model of illness behavior was proposed by David Mechanic in 1961, which incorporated social interaction. Illness behavior was defined as “the ways in which given symptoms may be differentially perceived, evaluated, and acted (or not acted) upon by different kinds of persons” (Mechanic, 1961, p.189). The model suggests that an individual’s evaluations of physical symptoms as well as medical care-seeking behavior is impacted by the following four elements: (1) degree of commonality of the disease within the social group; (2) degree of familiarity of relevant symptoms to the average member of the group; (3) relative predictability of the outcome of symptoms; (4) amount of perceived threat and loss that could result from the disease. The first two elements contribute to the category of “illness recognition” which can be impacted by education. The last two elements contribute to the category of “illness danger” which impacts motivation.

This model explains miscommunication between biomedical practitioner and patient, as well as non-compliance with biomedical treatment regimens. For example, a symptom that is not experienced as dangerous by the individual, because they remain able to fulfill social obligations, may still carry considerable medical consequence. Examples of this are early symptoms of cancer or Type-2 diabetes. Alternatively, a symptom such as pain, could be of considerable concern to a patient, but not be of physiological, or disease-related, concern to the biomedical physician. In this case, the patient might be perceived as hypochondriacal. If the physician treated the latter condition without much concern, the patient might leave the interaction believing that the medical problem still existed and that the physician had not taken care of the problem (Mechanic, 1961).

Mechanic (1961) suggested that illness behavior was affected by an individual's learned behavior in dealing with specific symptoms, and that this would impact whether they sought, accepted, and complied with the definition of symptoms provided by the medical profession. In addition, it was hypothesized that the patient-physician relationship may be impacted by the physician's role as a care provider. Health-seeking behavior was impacted by the degree to which an individual generally experienced interpersonal difficulties, with increased interpersonal stress being associated with increased physician visits. Perhaps the individual who did not find interpersonal acceptance and support for symptoms among their peer-group would attempt to find support and reassurance in the doctor-patient relationship (Mechanic, 1961).

In 1995, Mechanic again reviewed the difference between the evaluation of symptoms by the biomedical care provider and the lay person, or patient (Mechanic, 1995b). Whereas physicians use a model of differential diagnosis to evaluate a cluster of symptoms, the patient is generally focused on the functional consequences of those symptoms of which he/she is aware. Most individuals are attuned to pain and discomfort or to an overall sense of well-being, although many individuals have learned some information that is based in the biomedical model. The patient's goal, as opposed to the physician's focus, was to decrease interference with daily function and social role-fulfillment. Mechanic (1995b) suggests that the "almost exclusive dependence on the diagnostic disease model limits addressing the burden of illness and disability typically

seen in primary medical care”, and “new approaches to patient assessment and intervention are needed to extend traditional [biomedical] models” (p.1207).

Mechanic (1995a) describes areas in which the social sciences can contribute to more effective and egalitarian health care practices. The author points out the importance of understanding systems of social stratification and the effects of issues such as class, race, and gender, authority, power, and control as they impact the individual and their health. Among the major roles social scientists can take are the monitoring of health and of provision of health services. Research in the social sciences can contribute, among other things, to understanding of how meaning systems can effect health outcomes, and how various cultures, structures, and complex organizational arrangements impact delivery of health care as well as patient/individual compliance with biomedical health care interventions.

Meso-american perspective of illness and pain

Villarruel (1992) investigated historical information from the Aztec and Mayan civilizations to learn about world view, values and beliefs in the Meso-American (Mexico, Guatemala, Honduras, El Salvador) culture. The world view of this culture embraces a reciprocal and circular relationship among humans, nature, and the supernatural, and includes central concepts of duty, destiny or fate, duality (as in the relationship of life and death), and equilibrium. Ritual, health practices, and illness beliefs may be seen to relate to this perspective. For example, the “hot-cold” model of disease can be traced to earlier Meso-american culture. This practice of providing appropriate hot or cold illness remedies to corresponding illnesses that are (categorized as cold or hot) can be seen to support notions of duality and maintaining balance between opposites.

There were six historic themes that related to the experience of pain. They are as follows: (1) Pain was an accepted, anticipated, and necessary part of human life (belief that to live is to suffer); (2) Humans had an obligation to the gods, and to the community of man, to endure pain in relation to the performance of duties (value of endurance and duty); (3) The ability to stoically endure pain was valued (value of holding pain as private); (4) The type and amount of pain a person experienced was in part predetermined by the gods (belief in fate); (5) Pain and suffering were viewed as a consequence of immoral behavior (belief that pain is a punishment); (6) Specific methods of pain

alleviation were directed toward maintaining balance within the person and the surrounding environment (belief that health is found in balance) (Villarruel, 1992).

If these attitudes continue to be a part of current Meso-american and of Mexican-American culture, there could be considerable misunderstanding between members of this culture and members of the established allopathic medical care system. Allopathic, or biomedicine, does not view health in a holistic sense and does not incorporate the spiritual. Many factors that the Meso-american patient might consider to be “out of balance” would not be considered or discussed by an allopathic practitioner, perhaps leaving the patient feeling as though the physician did not do his/her job. As pointed out above, in research with Mexican-Americans, a stoic expression of pain in the context of family members could mislead health care personnel into providing less pain care than is physically warranted (Villarruel, 1995). This under-treatment of pain is even more likely when a typical stereotype found in the medical setting implies that Mexican-Americans over-report their pain experience, as indicated by the stereotypical belief of healthcare workers that Mexican-Americans have a low pain tolerance (Calvillo & Flaskerud, 1991).

Hispanic health beliefs

A health belief model incorporates the many factors and steps involved in the process of deciding whether one’s symptoms indicate disease, whether they need to be treated, and what might be the advantages or disadvantages of engaging in a medical intervention (Spector, 2000). Cultural experience in many areas, such as in ethnicity, race, religion, professional expertise, economic level, and generation can impact health beliefs. Because the Hispanic-American ethnic group traces ancestry to many different geographic locations, Hispanic-American group members cannot be considered homogeneous (Bagley, 1995). The prevalence of members in various Hispanic subgroups within the U.S. population is as follows: Mexico, 62.6%; Central and South America, 13.6%; Puerto Rico, 11.4%; Cuba, 4.9%; Other, 7/6% (Spector, 2000). Mexican-American beliefs may differ from the “stereotypical” meso-american beliefs, as may the beliefs of different locales, or groups of Mexican-Americans differ from each other.

Spector (2000) reports that cultural beliefs about illness of traditional Mexicans and Mexican-Americans have been described in various ways, including: (1) Health is purely a result of good luck; (2) Health is a gift from God and a result of good behavior; and (3) Health results from maintaining an equilibrium in the universe by acting, eating

and working in the proper ways. Imbalance can occur from improper exposure to “hot” and “cold” things or to “wet” and “dry” things. If an illness is believed to be hot, it should be treated by a cold remedy to bring things into balance, for example.

Magicoreligious practices have also been practiced by Mexican-Americans, using the expertise of a “natural” healer called a Curandero/a. Some of the differences between the Curandero/a (C) as care provider and the American Medical Doctor (MD) as care provider include: (1) Relationship with patient - C maintains an informal, friendly and affective stance whereas MD is businesslike and formal; (2) Family engagement – C talks to all family members whereas MD interacts only with the patient; (3) Cost – C works on a donation basis and is generally less expensive whereas the MD works on a fixed fee basis and is generally more expensive; and (4) Meaning – C has rapport with the symbolic, spiritual, and creative whereas MD is secular and not interested in meaning (Spector, 2000).

Most Hispanic-Americans in the United States participate in the dominant health care system (biomedicine), but some continue to use Hispanic complementary medicine techniques, such as seeing a curandera, or an espiritismo (spiritual healer), or by obtaining healing herbs and objects from a botanica or herberia (a specialized store). Gomez-Beloz and Chavez (2001) interviewed several customers at a botanica in a Mexican-American community, and found that most respondents were not born in the U.S. (~92%), most could speak English, most were female, most were married with at least one child, a little over half had not attended high school (grades 9-12), and most were buying a product for themselves. Average age was 38 (range 18-63), and income ranged from \$15,000 to 29,000. Thirty three percent of participants reported that the botanica or a chiropractor were their only source of health care, but the majority (67%) used conventional health care as their primary source of health care. (Gomez-Beloz and Chavez, 2001)

Castro (1984) compared the health beliefs of Anglo-American women at a university clinic with those of recent immigrant, bicultural, and highly acculturated Mexican-American women at an urban, community clinic. All the Mexican-American women indicated a mild to weak level of belief in traditional folk medicine concepts. The recent immigrants and bicultural Mexican-American woman were more likely to believe in Hot Cold Illness theory than were the highly acculturated Mexican-American

or Anglo-American women. All women indicated a strong belief in cardiovascular and Stress-Illness concepts, indicating that they support biomedicine and “western” medical beliefs. Thus, some Mexican-American women used a dual system of health beliefs, but none excluded the allopathic medical approach. Acculturation was a main factor in a patient’s belief that they would be individually responsible for their own health, with the least acculturated feeling the least able to influence their own health (Castro, 1984).

The latter belief, while perhaps indicating a lower internal locus of control, may be realistic. If less acculturated women were also more economically disadvantaged, they may have had to live a reality in which they had less power to accomplish numerous goals in their lives. Reflecting a similar difference in attitude, Lott (2002) reviewed some studies on appraisal that indicated poor people are more likely to give structural explanations for poverty than are middle-class people, who see poverty in more individualistic terms.

Goodwin, et. al. (1999) compared health beliefs about arthritis, heart disease, and sleep problems between African-American, Hispanic-American, and Anglo-Americans over the age of 70 in coastal Texas. For the painful condition of arthritis, African-Americans and Anglo Americans were more likely to believe in self-treatment, whereas Hispanic-Americans preferred medical intervention. Among the Hispanic-Americans, 48% suggested taking medication, and 10% or less considered other treatment options such as no treatment, heat/message, exercise, a folk remedy, surgery, prayer, or changing work, habits, or diet. In all three groups, arthritis was the only condition viewed as a natural part of the aging process. Hispanic-Americans and African-Americans were much more likely than Anglo Americans to attribute the cause of arthritis to exposure to work or the environment (ie: overwork, or working in unfavorable environments). Specifically, 34% of Hispanic-Americans did not have an opinion about the cause of arthritis, 26% attributed it to old age, and 20% believed it was caused by work/environment exposure (Goodwin, et. al., 1999).

Ailinger (1995) investigated health beliefs of Hispanic immigrants over the age of 60 in the area of metropolitan Washington, DC. Most participants (55%) defined health within the category of “Feeling well”, that is, not only feeling well but experiencing the absence of pain, disease, and illness. The second most commonly reported category defining health was the “Integration of physical, mental, and spiritual health”; this was

specified by 17% of respondents (Ailinger, 1995). While the former category is compatible with allopathic medicine, in that it views disease as a problem with the physical body, the latter category is more holistic than the allopathic perspective. Of elderly Hispanics, it appears that almost one fifth hold this holistic view as the foremost definition of health (Ailinger, 1995).

Bagley, et. al.(1995) reviewed research on the health protective behaviors of Hispanics. The authors found that the family plays a major role in preserving health, and that recent immigrants who maintain lifestyle patterns from the old country have the best health. Decreasing health of Hispanic-Americans as generations in America increases, appears to be associated with acculturation, or adoption of the lifestyle of middle class Anglo-Americans, with particular risk for those who have acculturated without achieving middle class economic success (Bagley, et. al., 1995).

Studies on working people and pain

The American Psychological Association (APA), noting that most research, education, and advocacy in the field of psychology ignores individuals in the lower SES, adopted the Resolution on Poverty and Socioeconomic Status in 2000 (Lott, 2002). This resolution assumes that American society is, in fact, not class-less, and addresses the concern that by studying only individuals who are middle-class, the field promotes an impression that other classes do not exist (Lott, 2002). Few studies have been done with lower SES individuals and pain.

The original culture and pain work by Zborowski (1952) was done on working class individuals during their hospital stay. The relevance of this authors findings are limited today, since many of the ethnic groups Zborowski studied in the NE US have become more assimilated into the dominant culture in recent years, showing less striking interethnic differences in pain expression (Lipton & Marbach, 1984)

Kugelman (1999), who interviewed working class patients at a pain clinic may have tapped into a limited period of the illness experience, recording the “working class” meaning of pain only at the point at which pain has first created disorder and confusion in the patient’s life, after they have been exposed to the education of the cognitive-behavioral techniques of the pain clinic, and before the individual has had time to adjust.

Epidemiological studies are reviewed above. They have found increased disability and pain levels associated with lesser education and income levels. However, using statistical analysis to control for physical load on the job, Bongers, et. al. (1993) determined that education and income levels could no longer predict disability. Further connecting work load with pain, African-American and Hispanic-American workers were more likely than Anglo-American workers to believe their pain was caused by their employment.

Summary

In conclusion, there are mixed results with regard to the influence of culture on pain. Most of this research has been done in an experimental or a clinical setting. The literature indicates that the effects of SES, gender, and age can interact with ethnic culture to influence the pain and illness response. Consequently, the direct impact of culture is complex and unclear. Findings specific to the Hispanic pain experience appear to be mixed as well. Several studies indicate that Hispanic pain response patterns are more emotional, particularly in comparison to Anglo-American or English persons. (Zborowski, 1969, Davitz, et. al., 1976, Calvillo and Flaskerud, 1993, Bates & Rankin-Hill, 1994, Bates, et. al., 1995). Yet, there is some indication that the Hispanic group is less expressive, choosing to endure pain with stoicism (Morris, 2001, Villarruel, 1992, 1995) and perhaps limiting open expression with Anglo-American medical personnel (Zea, 1994).

For any Hispanic-American group, it is possible that individual members have become acculturated, following medical care practices or pain expression behaviors of the middle class Anglo-American. The literature indicates that many Hispanic-Americans, including some recently immigrated Mexican-Americans, are bicultural in their medical care practices. In addition to acculturation, there may be individual differences due to SES. Economically disadvantaged individuals may rely more upon social networks for support and for medical information than upon the established medical system.

Traditional Hispanic culture values a personal care provider who incorporates the family in health discussions and in support for medical interventions. It is possible that members of the Hispanic-American community, like the Puerto Ricans studied by Bates

and colleagues (1992, 1993, 1994, 1995, 1996, 1997) may value a provider context that is more concerned about the whole person as opposed to solely the specific injury or disease. Perhaps due to a lack of education about biomedical procedures, or due to an interest in building a personal connection with the care provider before pursuing treatment, Mexican-Americans are less likely to seek or accept medical treatment for their pain.

Although pain clinics and the allopathic medical system tend to stress individual responsibility in managing chronic pain, individuals from the lower SES who have close ties to family and ethnic community may tend to use social support for coping. According to Zea (1995), this kind of support is not a dependent, but rather an interdependent stance. In this sense, social interaction may be a quite positive coping strategy. As the worried or disabled individual is able to talk to friends and family about their pain, they may be better able to create meaning and adjust to the painful condition.

If the Hispanic family and community possess values through which they feel motivated to help less able persons, then the individuals in pain can share some of their former responsibilities without negative stigma. It seems that individuals with persistent pain fare better in terms of pain intensity and related distress, when they remain active physically, mentally, and socially. Perhaps a member of the Hispanic-American community is somewhat better able to continue to be active than is the Anglo-American, since they can continue working, with “a little help from friends”.

The experience or prevalence of pain in lower SES occupational groups is not often found in the literature, although this part of society carries a heavier burden of work disability claims and, judging from a few epidemiological studies, may experience greater pain in general. As Hilbert (1984) suggested, some occupational groups may assume a more painful existence is normal – to be expected.

By continuing to work while in pain, occupational group members may be using an adaptive strategy to deal with their pain. At the least, they are active and are not resorting to the maladaptive strategy of withdrawal. Such an adaptive coping method may serve as a resource to professionals trying to help individuals struggling with chronic or severe pain. Alternatively, lower SES workers may submit to a fair amount of suffering that may not be medically necessary, simply because they assume this pain level is normal.

In this exploratory study, a group of lower SES workers, constituted of a high proportion of Mexican-Americans, was surveyed. Level of acculturation was investigated, to determine whether there may be a strong influence of Mexican heritage in these workers. Characteristics of pain, if present, were documented. A few questions addressed use of the allopathic medical care system for pain relief, to investigate whether participants may be experiencing medically untreated pain. Participants were asked about individual responses to pain, including expression of pain behaviors, feelings when in pain, thoughts and attitudes about the experience of pain, and social interaction with others when in pain. Description of these psychosocial factors may help to uncover how this group of people copes with pain. In addition, there may be some indication as to whether Mexican-Americans are particularly stoic or particularly expressive, either of which would support some findings reported in the literature.

CHAPTER 3

RESEARCH DESIGN & METHODS

Participants

The sample was comprised of 36 individuals, both male and female, who volunteered from a group of 85 total workers (42% response). Most are employed full-time as service employees in a Southern U.S. teaching institution. All participants receive health care benefits through this primary employer. It was during this employment that they were invited to participate in the survey, which took them about 45 minutes including introduction, consent, and assessment. Whether or not participants report that they experience pain, all were asked to fill out the demographic portion of the questionnaire.

Demographics of all service employees of the organization, including one other work group, are reported to be as follows: 50% Male and 40% Female; ethnic make-up of (approximately) 80.7% Hispanic-American, 12.6% Anglo-American, Non-Hispanic, 5.8% African-American, Non-Hispanic, 0.4% Amer., Indian, 0.4% Unknown (*Personnel Information File, YR 2000*) Demographics of the sample were: 31% male and 69% female; age range from 23 to 67 with mean age at 47.5 and 50% of the sample between 43 and 54; most completed grades 1-8 or less (54%) or some to all of high school (37.5%); most were born in the US; most spoke either Spanish, or English and Spanish, in the home as a child; over three quarters identified themselves as Catholic; reportable pain was present in 34 of the 36 who volunteered to participate. The experimenter in this study was Anglo-American.

Measures (See Appendix A for examples)

Pain research instruments utilized in this study were based on the “Ethnicity & Pain Survey” (EPS) and “Ethnicity & Pain Questionnaire” (EPQ) developed by Bates and colleagues* (1992, 1993, 1994, 1995, 1996, 1997). These survey instruments were chosen because they were available in both Spanish and English, and they assess a broad range of variables that could be influencing pain perception and behavior, including: demographics and ethnicity, pain location, and various aspects of the pain experience, including cognitive coping and social support.

The Body Drawing, taken from the McGill Pain Questionnaire (MPQ), was used to determine number of sites and location(s) of pain experienced. It is comprised of a full body outline from both the front and the rear view. Participants were asked to use a pencil to shade in all the areas of their body that had pain, and to identify the different areas using sequential numbers. The number one was to be placed next to the pain that bothered them the most.

The Visual Analog Scale (VAS) measured pain severity or intensity. The placement of a crosshair at the point along a continuous 10 cm line is used to indicate subjective experience of the degree of pain. One end of the line is anchored with the descriptor “absolutely no pain” and the other end of the line is anchored with “the worst pain imaginable”. The rating is converted to a numerical value by measuring the location of the individual’s mark on the line, in centimeters. The VAS is frequently used to assess pain in the clinical setting. For the present study, when the participant had indicated more than one site of pain on the Body Drawing, they were asked to use the VAS to rate the one location where the pain bothers them the most. Because this population has limited education and may struggle with reading, writing, and test-taking, the MPQ, an adjective checklist, was not used as an assessment of pain intensity.

The EPS and EPQ were shortened for use in this study, because participants would have limited time to answer questions. Eighteen of 42 questions were retained that used a fill in the blank or forced choice format. A question on income level was not included, and this value will be roughly estimated from the pay rate range.

* Maryann S Bates, deceased, was Assistant Professor in the Division of Human Development, School of Education & Human Development, State University of New York, Binghamton, NY For copies of the Ethnicity and Pain Questionnaire, contact Lesley Rankin-Hill, Associate Professor in the Department of Anthropology, University of Oklahoma, 455 W Lindsey, Rm 521, Norman, OK 73091-0535.

Many factors were evaluated based on one or two questions taken from the EPS or EPQ. An open-ended question “Why do you think you have pain in life?” was added to draw out an interpretation of the meaning of pain for that individual. The open-ended question inquiring about the cause of the pain was retained from the original EPS.

The EPS and EPQ were designed by Bates and colleagues (1992, 1993, 1994, 1995, 1996, 1997) for use with chronic pain patients. Some of these questions had originally been used by Lipton and Marbach (1984) and reflect typical attitudes and statements made by pain patients. The EPS and EPQ had originally been used with facial pain patients; they were tested by Bates and colleagues on back-pain patients at a university clinic prior to their use for the New England/Puerto Rico pain clinic research (Bates and colleagues, (1992, 1993, 1994, 1995, 1996, 1997). Questions used to determine varying levels of acculturation were adapted from work by Spector (1985) and Estes and Zitzow (1980) on “heritage consistency” (see Glossary) (Bates and colleagues, 1992, 1993, 1994, 1995, 1996, 1997).

Procedures

Permission to proceed with this project was obtained from the Southwest Texas State University (SWTSU) Institutional Review Board and from the management of the occupational group that would serve as the sample. The work group manager initially interviewed this investigator and reviewed a copy of the research proposal and questionnaire. Upon approval, the manager arranged for this investigator to present the proposal in front of the supervision team meeting. These individuals then informed their employee groups that they would have the opportunity to fill out a questionnaire about pain during a scheduled work time. Participants met to take the survey either at the beginning or the end of their work shift. The pain questionnaire was filled out in pencil by volunteers, and took 15-20 minutes to complete.

All participants provided signed consent (See Appendix B) before beginning to answer the survey. To initiate the process of filling out the questionnaire, participants were asked to think about the pain they have felt in their body during the past one month. If any of these pains had lasted at least 12 hours (half a day), participants were asked to shade this area on the Body Drawing (page 1). It was explained that the drawing was one person, looking at the front and looking at the back sides. After a few moments, the VAS

was then described to them, both literally (looking at the graphic) and in example, such as “The worse pain you can imagine might be a knife stuck into your gut, and cutting you. This would be a pain of ten. Zero would be no pain, like someone lightly brushing against you. The five would be about half way between, maybe like the feeling of being punched very hard in the stomach.” Participants were asked to use the VAS to rate the pain that bothered them the most, because many individuals experienced pain during the last month in multiple locations.

Some participants were observed to have difficulty understanding the questions, as indicated by their turning to someone next to them to ask for clarification. In small groups, this investigator was able to talk to individuals to help them understand specific questions. In particular, the question asking for country of birth of parents and grandparents was explained. For the first group, which was large, most participants worked alone. At the first, largest meeting, the group manager and a trainer from the main office were present. The manager made a number of announcements to the work group, during the administration of the questionnaire. Most comments appeared to have the intention of facilitating understanding. At the latter three administrations of the survey, only the trainer was present.

Data analysis

Statistical analysis was performed using SPSS software. Demographics, and pain descriptors, such as location, intensity, duration, and frequency, were assessed using descriptive analysis.

Spearman rho Correlation Coefficients were used to determine whether there were any variables, such as age, related to pain intensity, to distress about pain experienced, or to expressiveness of pain behaviors.

CHAPTER 4

RESULTS

Of the total sample (N= 36), 34 reported experiencing pain during the last month, establishing the pain prevalence rate in this volunteer group at 94%.

Demographics

Nearly one third (31%) of the sample was male, and approximately two thirds (69%) were female. Participants ranged in age between 23 and 67 years, with mean age at 47.5 years. Fifty percent of the sample was between the ages of 43 and 54.

In regards to marital status, 2.8% reported being unmarried and living with a partner, 16.7% reported being single, 16.7% reported being widowed, 19.4% reported being “separated or divorced”, and 44.4% of participants reported being “married with partner” (see Figure 2). Just under 3% reported residing with friends, 8.3% reported living alone, 13.9% reported living with relatives who are not spouses, partners, or children, 41.7% reported living with children; and 52.8% reported living with a partner or a spouse.

Fifty four percent of study participants completed grades 1-8 or less, 37.5% completed or partially completed high school; and 5.9% attended college or trade school (see Figure 3). Income level of the sample was not elicited in the survey, but data was collected from institutional records. At the participant’s institution, starting pay is \$13,884 annual salary.

Most participants (60%) reported that they both (a) frequently saw and visited with parents and siblings on a regular basis and (b) still identify and participate in cultural traditions of their childhood. About half as many (34.3%) responded positively to one of these statements. Only 5.7% of respondents reported that they did neither.

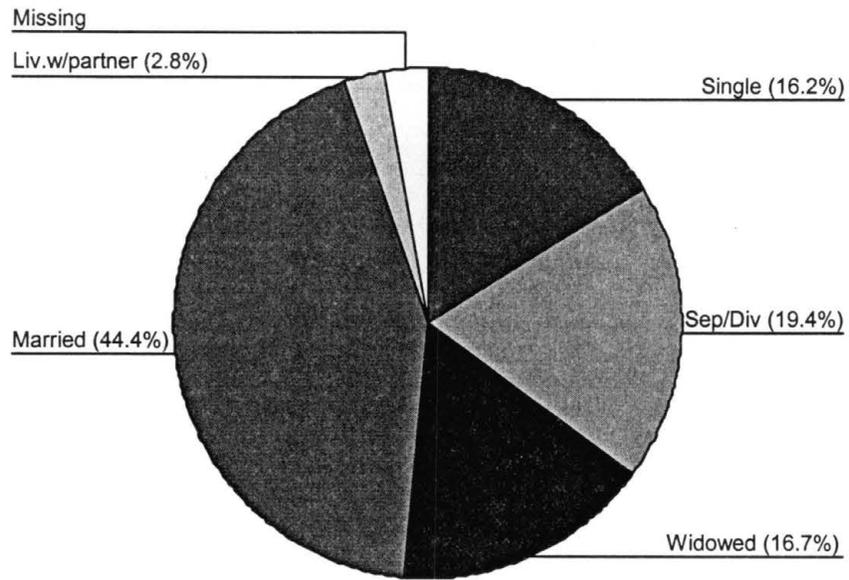


Figure 2. Marital status.

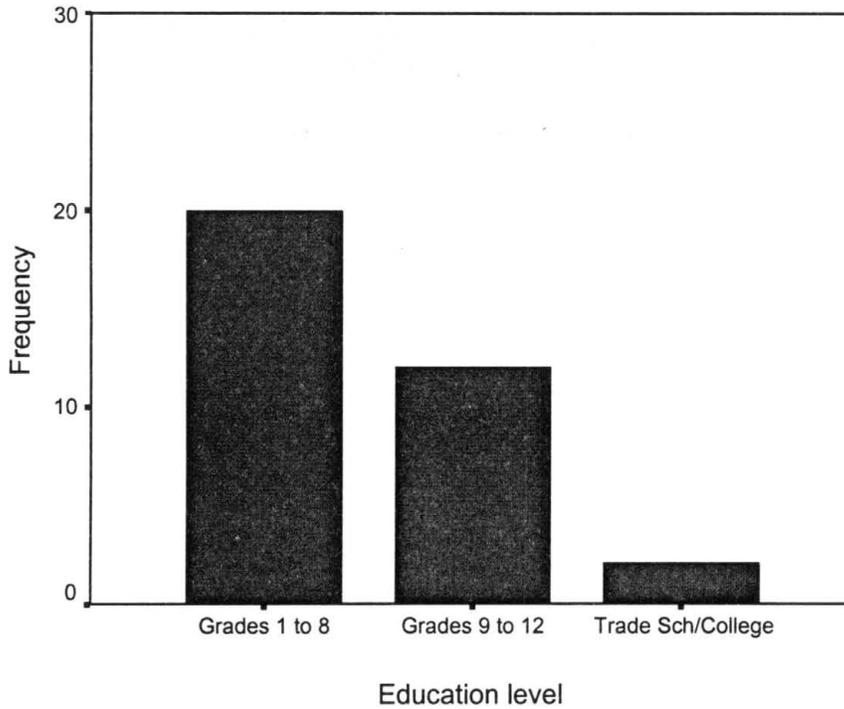


Figure 3. Educational level.

Over three quarters of the sample group identified themselves as Catholic (80%; see Figure 4). All but one of the respondents reported having been born in the United States. (Two participants did not answer this question.) Most spoke either Spanish (48.6%), or English and Spanish (34.3%), in their childhood home. The remaining 17.1% spoke only English.

Seventy five percent of participants reported viewing themselves as healthy, and 16.7 reported thinking that they were unhealthy. A few (8.3%) responded to this question with “other”, and then specified reasons such as “have diabetes”, “have a poor diet”, “sometimes feel very fatigued” or “I’m in between healthy and unhealthy”.

Pain Variables

Pain site totals for an individual ranged from 0 to 14, but most participants reported that they have between one and four total sites. Almost one third of respondents (27.8%) reported having only one pain site. About the same proportions of participants reported experiencing pain at 2, 3, or 4 sites (13.9%, 13.9%, and 16.7% respectively); the median value was 3 sites. Pain in 7 or more locations was reported by only one participant (2.8%) each (see figure 5).

The body drawing was divided into five areas (see Figure 6), as follows: head and neck; shoulders; torso, including back; upper extremities; and lower extremities. Prevalence rates for these regions are shown in Table 1.

Pain intensity of the site considered “most bothersome” was “moderate” to “high-moderate” for half of participants with pain. The average intensity of pain in this sample was moderate (see Figure 7). VAS score, the measure of intensity, ranged from 0 to 10, with a mean of 5.4. The mode (representing 20% of respondents) was 5. The most severe ratings of 9 or 10 were chosen by 10% of participants.

Table 1. Pain Prevalence in Specific Regions of the Body

	Head and Neck	Torso*	Upper Extremities	Shoulders	Lower Extremities	Back
Frequency	10	21	9	11	18	11
Valid %	27.8	58.3	25.0	30.6	50.0	30.6

* including Back

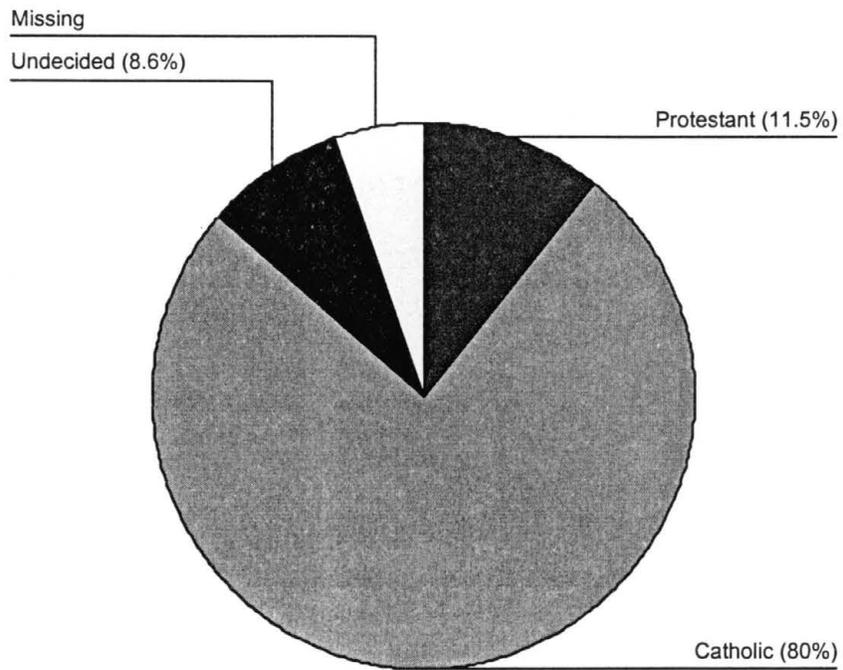


Figure 4. Religion.

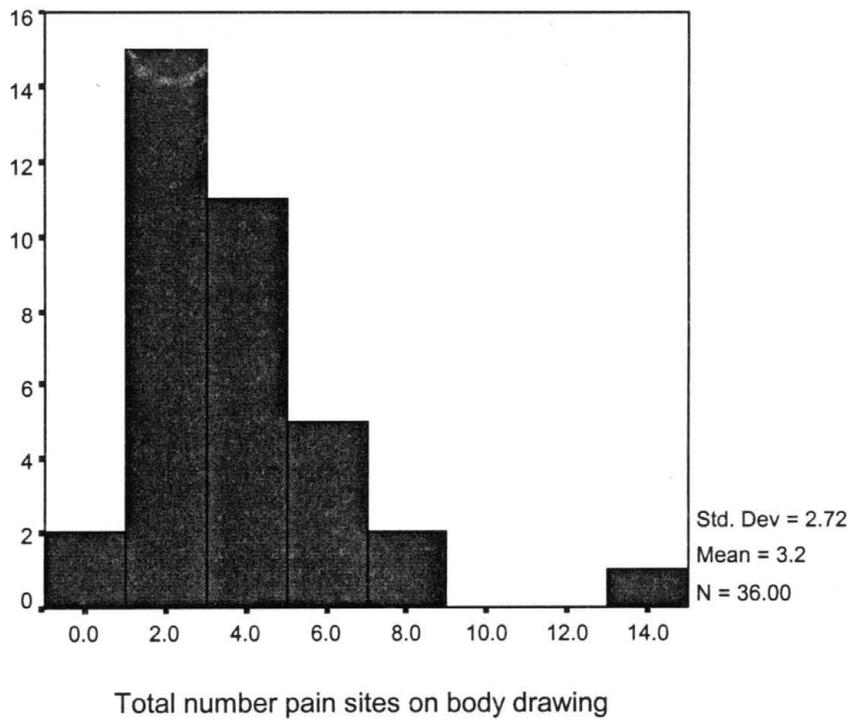


Figure 5. Total number of pain sites per person.

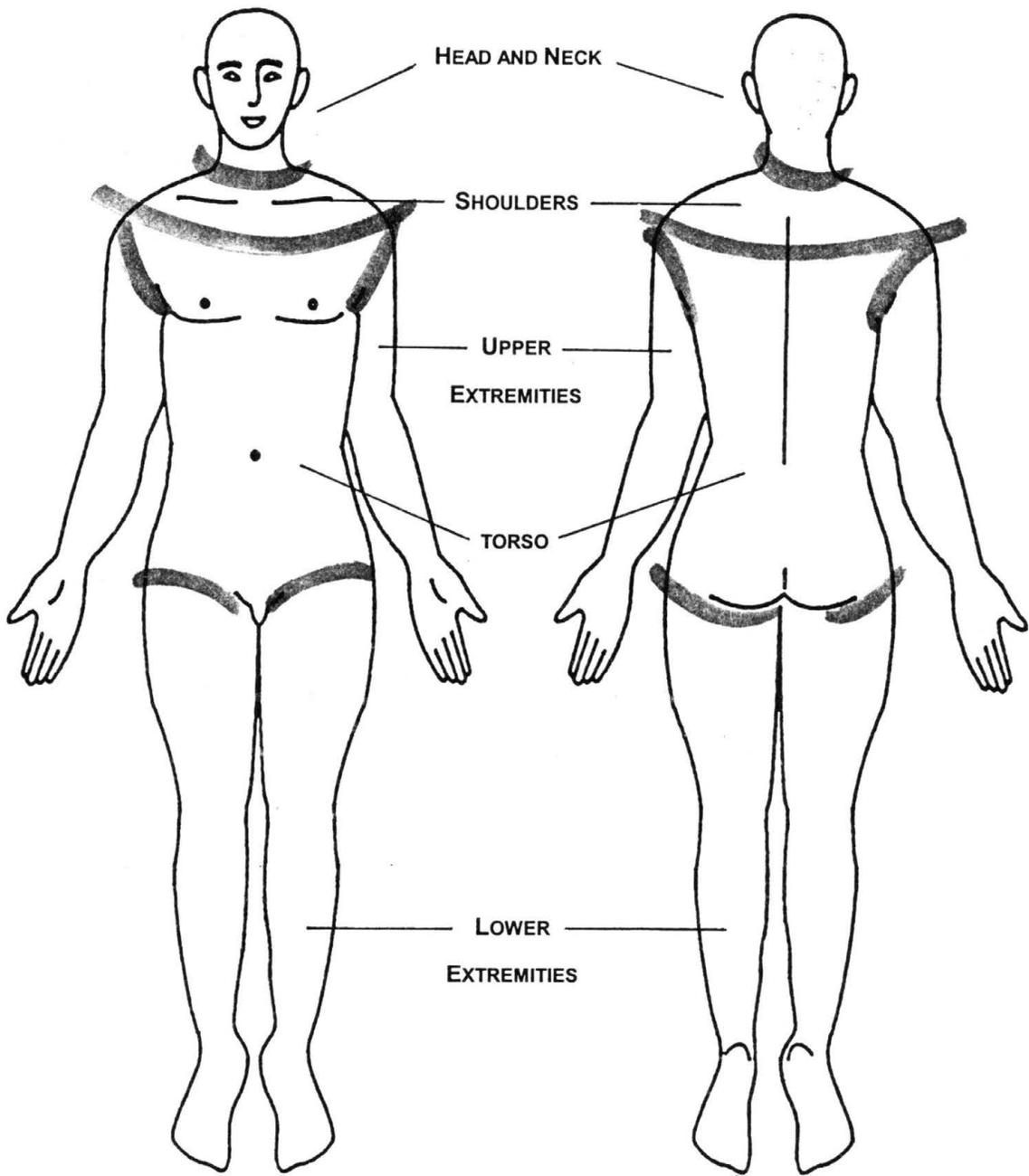


Figure 6. Body Drawing showing regions for scoring pain location.

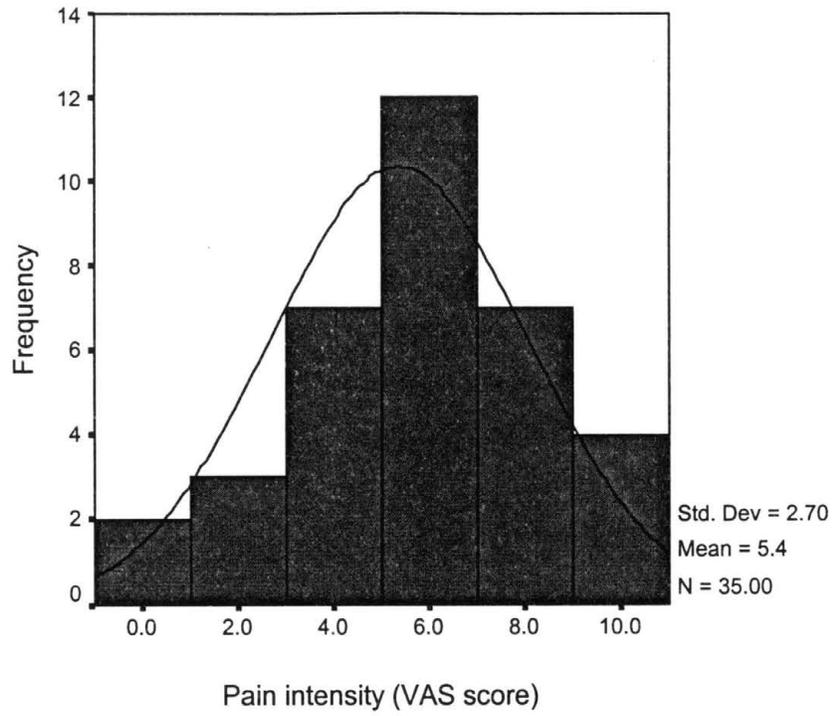


Figure 7. Pain intensity (VAS score).

Over half (56%) of those participants reported experiencing chronic pain, as defined by pain lasting longer than 3 months (see Figure 8). Over one quarter of participants (28.1%) reported having experienced the “most bothersome” pain for under one month, fewer (15.6%) reported having had the pain between one and three months, 12.5% reported a duration between three and six months, and over two fifths (43.8%) reported the pain had been present for longer than 6 months.

Almost two thirds of participants (62%) experienced their most bothersome pain “sometimes”, as opposed to “rarely” or “always” (See Figure 9). Nineteen percent of persons with pain reported that the pain that bothered them most was “rarely present”. For 62%, the pain was “sometimes present”, and for 19% the pain was “always present”.

Three individuals reported experiencing widespread pain, as indicated by evaluation of the marks on the body drawing. Thus, this sample has an 8% prevalence of widespread pain.

Social interaction & Activity

Most participants with pain (76%) reported that pain had not prevented them from “doing the same work they did previously”, and, as mentioned above, most (75%) evaluated themselves as healthy. Nevertheless, most of the respondents with pain (62.5%) reported that since they had pain, they had not found alternative activities that would keep them active and busy, and most (53%) stated that their ability to be socially active had decreased somewhat. One third (33.3%) reported there was not a decrease in their ability to engage in social activity, half (53.3%) stated that ability had “decreased somewhat”; for a few, ability to interact social was “much less” (10%) or had disappeared completely (3.3%). In regards to the regions of pain evaluated, only pain located in the back was statistically correlated with decreased ability to find alternate activities that keep one busy and active ($\rho = 0.39$ at α of 0.05).

Most respondents reported that their desire to engage in the social activities had also decreased, but in different proportions to ability. Over one third of participants with pain (38.5%) reported they had retained the same desire, 38.5% reported desire had “decreased somewhat”, 19.2% reported “much less desire”, and 3.8% reported desire to engage in social activities had “disappeared completely”.

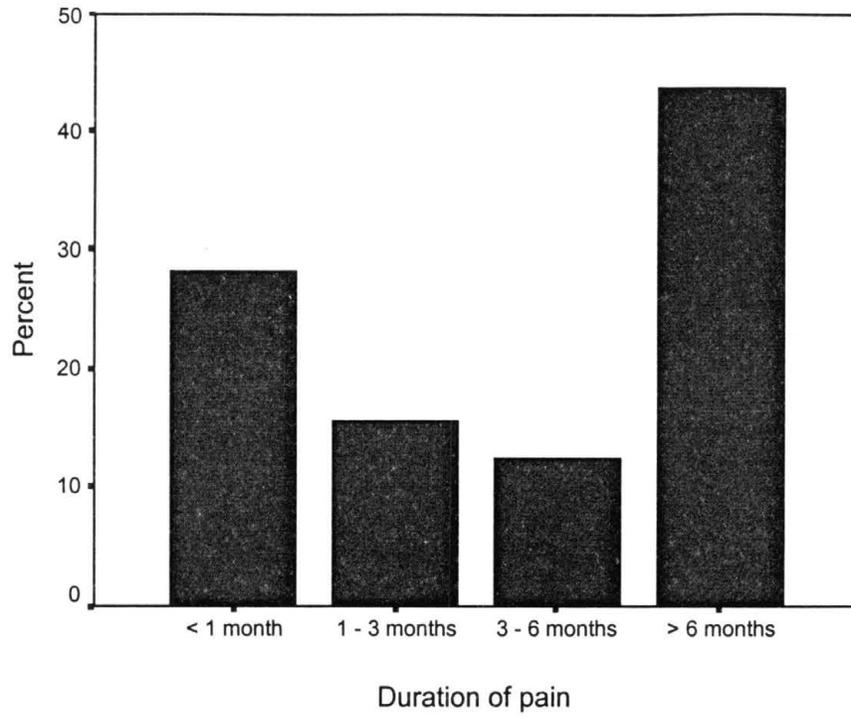


Figure 8. Duration of pain.

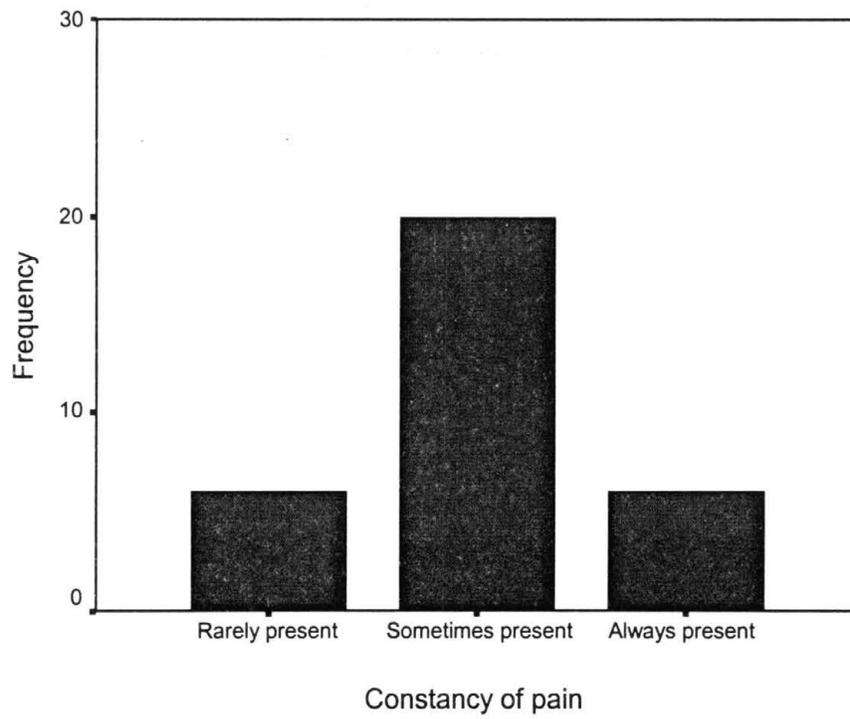


Figure 9. Constancy of pain.

Under one quarter of respondents with pain (22.6%) reported having approached family and friends for help since they had their pain, as well as having received support from family and friends during moments when they had serious problems because of pain. Most participants (48.4%) reported having experienced one of these two conditions, and over one quarter (29%) reported experiencing no social support of this kind.

Over one third of participants with pain (41.2%) reported that they talk to others frequently about their pain and that it is helpful to them to talk about the pain. Almost one fourth (23.5%) said they experienced just one of these conditions, and over one third (35.5%) reported they neither talked about their pain nor found it helpful to talk about the pain.

Other Psychosocial Variables

Pain expression

In questions about expressive behavior, there was usually no differentiation made as to whether individuals expressed their pain in all social situations, or only in certain ones. Only a few of the participants with pain (12.1%) reported that (a) “sometimes when the pain is strong, they sigh or moan”, (b) they “get emotional when they describe their pain to doctors or other persons”, and (c) they “cannot hide the fact that they have pain”. Most (51.5%) reported that they did one or two, but not all of these behaviors. And only a few (12%) stated that they did not do any of the three expressive behaviors described.

Psychological distress

About one third (32.3%) of respondents with pain reported they worried both (a) about what might be wrong with them regarding the pain, and (b) about whether the pain indicated that they had cancer or some serious disease. Another one third (35.5%) reported experiencing one of these two worries, and the remaining third (32.3%) stated that they did not experience either of these concerns.

Cognitions

Two thirds of the respondents with pain (67.7%) reported they did not think a lot about their pain. However, almost three quarters (71%) said they thought a lot about what they had done to deserve their pain. Over two thirds of respondents with pain

(63.3%) reported that they intended to conquer their pain, but the remainder (36.7%) did not maintain this hope. In similar proportion, 64.5% believed they could still enjoy life with the pain, and 35.5% did not.

Negative affect

While just under one quarter (21.9%) of respondents reported that they did not experience distressful feelings in association with their pain, the majority (72.5%) did experience some psychological distress, as indicated by negative affect (see Table 2). Specifically, about two thirds (65.6%) reported that they felt tense when in pain. One third (33.3%) felt angry when in pain. Just over one third reported feeling depressed (37.5%) or afraid (36.4%,) when in pain. Taken as a group of four responses, under the factor heading of “feelings”, about one third (34.4%) experienced one feeling, 15.6% experienced two or three feelings, and 12.5% experienced all four feelings in association with pain. Thus, about one quarter of persons with pain reported experiencing three or four distressing feelings in association with their pain.

Table 2. Frequency of Negative Feelings When in Pain

	Feel tense	Feel depressed	Feel afraid	Feel angry	Feel one of these	Feel 2 of these	Feel 3 or 4 of these
Frequency	21	12	12	11	11	5	4
Valid %	65.6	37.5	36.4	33.3	34.4	15.6	12.5

Medical Care

Regarding care-seeking for pain, 28% of participants with pain reported that they went to the doctor immediately upon experiencing their pain. Regarding usage of medication for pain, 45% reported that they believed in taking medications for their pain, and 44% indicated they had taken prescribed medications for pain. Almost two thirds of respondents (63%) had taken non-prescribed medications for their pain. Many respondents did not offer examples of treatments or therapies used for pain, but several gave the examples of over-the counter pain medications, such as Ben Gay, Advil, Motrin, Extra Strength Tylenol, or aspirin. In response to this question, two participants directly stated that they had not used any pain treatments or therapies for pain, and two reported using the treatment of prescribed pain medication.

Correlations

The four characteristics of pain measured had shared variance (see Table 2).

Total number of pain sites was related to feeling tense when in pain (independent samples $t= 2.503$, $df=30$, $p= 0.02$). Pain intensity, measured by the VAS, was significantly correlated with expressiveness, or pain behaviors (Spearman $\rho= 0.429$, $p= 0.02$). Negative affect, or “feelings”, as measured by combining responses to the experience of fear, anger, tension, or depression with pain, was associated with higher pain intensity (Spearman $\rho=0.476$; alpha of 0.01), and there was a statistical trend indicating a relationship between gender and negative affect (independent measures $t= -1.850$, $df=30$, $p= 0.07$). Pain intensity rating was related to feeling tense ($t= 2.040$, $df=29$, $p= 0.06$), feeling depressed ($t= 2.404$, $df=29$, $p= 0.02$), and feeling angry ($t= 3.566$, $df=30$, $p= 0.00$). Anger was related to gender (see Table 4), with females experiencing more anger when in pain than males. Distress, as measured by these feeling states, began to be noted at a VAS score of 4 or 5 (See Table 5).

For anger with pain, 1 in 10 males reported experiencing the negative feeling state, as opposed to 9 in 21 (4.5 in 10) females. For depression with pain, 3 in 10 males reported experiencing the negative feeling state, as opposed to 9 in 21 (4.5 in 10) females. Similar trends were present in this sample for feeling tense when in pain (5/10 males versus 7.5/10 females) and feeling afraid when in pain (2/10 males versus 5/10 females). Pain intensity, as measured by VAS score, did not statistically correlate to gender, but the results show that women tend to report more negative feelings in relation to their pain.

Stress and social support

There was a statistical trend indicating an association between living with children and experiencing more pain episodes (independent $t= -1.738$, $df=30$, $p= 0.09$). Living with children was related to higher pain intensity (independent $t= -2.591$, $df=33$, $p= 0.02$), and living with a partner or spouse was related to lower pain intensity (independent $t= 2.157$, $df=33$, $p= 0.039$). Living with a partner or spouse related to less outward expression of pain ($X^2= 10.001$, $df=3$, $p= 0.02$).

Statistical trends indicated that pain duration was related to a report of feeling one deserves pain (independent $t=1.715$, $df=28$, $p=0.104$), to a report of having gone to the physician immediately upon feeling the pain (independent $t=1.697$, $df=29$, $p=0.108$), and to taking non-prescription medications (independent $t= 1.825$, $df=28$, $p=0.082$).

Table 3. Spearman Correlation Between the Various Pain Characteristics

	Total # pain sites	Intensity (VAS score)	Constancy of pain	Duration of pain
Total # pain sites	1.000	.	.	.
Intensity (VAS score)	rho= 0.42** p=0.01	1.000	.	.
Constancy of pain	rho= 0.17 p=0.36	rho= 0.03 p=0.88	1.000	.
Duration of pain	rho= 0.42** p=0.02	rho= 0.04 p=0.85	rho= 0.51*** p=0.00	1.000

* $p < .10$. ** $p < .05$. *** $p < .01$

Table 4. Chi Square Between Gender and Pain-related Feelings

Chi-Square Tests (x Gender)	χ^2 Value	df	Asymp.Sig. (2-sided)
Anger	3.057*	1	0.080
Depression	0.349	1	0.555
Tension	1.574	1	0.210
Fear	2.357	1	0.249

* $p < .10$. ** $p < .05$. *** $p < .01$

Table 5. Crosstabulation - Pain Intensity versus Pain-related Feelings

	Affect with pain					Total	
	(No)	(One Feeling)	(Two Feelings)	(Three Feelings)	(Four Feelings)		
VAS score	1.0	1				1	
	2.0			1		1	
	3.0	2				2	
	4.0	1	2		1	4	
	5.0	1	2	1	1	6	
	5.5			1		1	
	6.0		3	1		4	
	7.0		1		1	2	
	8.0		2	1	1	5	
	9.0				1	1	
	10.0	1			2	3	
Total		7	10	5	5	4	31

Psychological distress and coping strategies

There were several correlations between psychological distress (worry or negative affect) and pain related thoughts and behaviors (see Table 6). For example, thinking “a lot about pain” was positively associated to negative affect (independent $t= 3.75$, $df=29$, $p=0.04$) and to worry (independent $t= 3.75$, $df=29$, $p=0.00$).

Individuals who worried less and experienced less negative affect with pain were more likely to report that they could still do the same kind of work despite their pain (independent $t= 2.818$, $df=29$, $p=0.01$, and independent $t= 1.197$, $df=29$, $p=0.08$, respectively). Expressiveness, or public pain behavior, was related to both worry and negative affect (Spearman $\rho= 0.43$, $p= 0.02$, and $\rho= 0.36$, $p= 0.05$, respectively). In addition, being Catholic was related to worried thoughts (independent $t= 2.932$, $df=29$, $p=0.03$).

Table 6a. Relationships Between Psychological Distress and Coping, part 1

	Affect with pain	Worries about pain	Went to doctor immediately	Talks about pain	Pain behaviors/ expressiveness	Thinks a lot about pain
Affect with pain	1.00	$\rho= 0.71^{***}$ $p= 0.00$	$t= 2.09^*$ ($df=29$) $p= 0.06$		$\rho= 0.36^{**}$ $p= 0.05$	$t= 2.210^{**}$ ($df=29$) $p= 0.04$
Worries about pain	$\rho= 0.71^{***}$ $p= 0.00$	1.000	$t= 4.46^{***}$ ($df=29$) $p= 0.00$	$\rho= 0.40^{**}$ $p= 0.02$	$\rho= 0.43^{**}$ $p= 0.02$	$t= 3.75^{***}$ ($df=29$) $p= 0.00$

* $p < .10$. ** $p < .05$. *** $p < .01$.

Table 6b. Relationships Between Psychological Distress and Coping, part 2

	Guilty - deserves pain	Can enjoy life w/pain	Support fr. friends and family	Ability to do soc. activities since pain	Desire for soc. activities since pain	Continues same work despite pain
Negative affect with pain	$t= 2.78^{**}$ ($df=29$) $p= 0.02$	$t= -2.69^{***}$ ($df=28$) $p= 0.01$		$\rho= 0.31$ $p= 0.107$	$\rho= 0.40^{**}$ $p= 0.05$	$t= -1.92^*$ ($df=28$) $p= 0.08$
Worries about pain	$t= 3.17^{***}$ ($df=29$) $p= 0.01$		$\rho= 0.45$ $p= 0.01$			$t= -2.82^*$ ($df=29$) $p= 0.01$

* $p < .10$. ** $p < .05$. *** $p < .01$.

Analysis regarding the cause and meaning of pain

There were several themes that emerged, many of which were related to biological processes.

Perceived cause of pain

Five respondents said they (a) do not know how their pain started. Nine supported a theme of (b) biological origin and/or poor self-care (“Not taking care of myself”, “Not drinking enough water”, “PMS”, “Arthritis”, “Tendonitis that comes and goes”, Illness (identified as “The flu” or “Seeing a doctor today”), “Surgery”, “May have slept wrong” (causing severe neck pain). (c) work activity was cited by six, with four of these relating to walking or being on one’s feet too long (“Being on your feet 8 hours/day Mon-Fri.”, “Probably an accident at my work”, “Bending, carrying heavy objects at work”, “Walking on hard concrete”). In addition to one person naming an accident at work as the cause, two others believed their pain resulted from (d) an accident (“A fall”, “Accident while exercising - torn cartilage”). One person mentioned (e) stress as causing pain (“stress and fatigue”), and one person mentioned (f) “other” causes (“Cold weather”).

Beliefs regarding the presence of pain

Some of these responses are the same as some of those given for the cause of pain. Most believed that pain was either (a) a developmental consequence (“Aging, getting old”, “Getting older”, “We get old and die”, “Part of life”, “I’m human”, “Natural thing”), or (b) a biological result of physical strain (“May be because I work too much [but I have to work]”, “Walk too much”, “On my feet too long”, “Over worked”, “Muscles”, “Too much sports”, “Maybe getting older and heavier”). Three others cited (c) biological reasons of other kinds (“Family genes”, “Knee surgery”, “Not taking care of myself”).

CHAPTER 5

DISCUSSION

Results of this study are intended to provide impressions of the participants and their pain experience that may be further studied using more extensive measures. Two thirds of the study sample group were female and one third were male adults, ranging in age between 23 and 67 years. These individuals volunteered to participate in a study on pain, given at their workplace.

Prevalence of pain in this group was extremely high. The intensity of this pain was rated as “moderate” to “high-moderate” by half of participants with pain. Just over half of those individuals with pain experience chronic pain, or pain lasting longer than 3 months. Almost two thirds experienced their pain sometimes, as opposed to rarely or always. Despite their pain, most evaluated themselves as healthy.

Almost all participants reported that they work full time; however, anecdotal evidence indicates that many, even most, work at least one other part time job. Government evaluation of individuals with the same occupation as this sample reveals that, nationally, median annual income in the year 2000 was \$17,180, and the middle 50% of the occupational group earned between \$14,030 and 22,340 per year (Bureau of Labor Statistics, 2002). For comparison purposes, the 2000 U.S. median income was \$42,100, and the threshold of poverty was \$17,603 for a family of four and \$13,738 for a family of three (Weinberg, 2001.) Thus, half the individuals in this occupation earn wages very close to or below the poverty level.

Because most individuals spoke some Spanish in the childhood home, it is assumed that most of the participants are of Hispanic ancestry. Several respondents noted that they had ancestors from Mexico. However, most indicated that they did not have parents or grandparents who were born in a country other than the United States, and thus did not indicate any particular country from which their ancestors originally immigrated.

(According to the definition of ethnic group used by Zborowski and Bates, these individuals would be considered fourth generation or more in the U.S. and thus probably be considered “Old Americans”.) A question pertaining to self-reported ethnic group of identification was removed from the survey, because in a pilot test it appeared to be very confusing and thus quite time consuming.

Individuals with four or more generations in the U.S. are considered to have become acculturated, thus it is not surprising that many participants in this study speak about their pain according to physical concerns as would be expected within the “traditional Western” biomedical model. This perspective on health is ascribed to by the predominant socio-cultural group in the U.S., middle-class Anglo-Americans.

Several respondents claimed to have kept close ties to family culture and childhood friends. This may reflect high “heritage consistency” and be associated with low acculturation, or it may simply be due to low mobility related to low SES, in addition to, or instead of any strong allegiance to their ancestral culture. Rather than lesser degrees of acculturation, it appears that this population experiences decreased structural assimilation. Structural assimilation is the process through which one enters the economy of the host society, and it can have impacts upon health that are independent of acculturation (Bagley, 1995).

Most participants reported coming from families where Spanish was frequently spoken, either as the only language or as a second language. Bilingualism, however may not be an indication of biculturalism or of low acculturation. Reichman (1997) reports that many researchers view biculturalism and bilingualism as distinct phenomena. Studies indicate that the language an Hispanic individual uses in conversation or survey response may reflect different linguistic and symbolic categories of expression. For example, the Spanish language is often used for personal communication between friends and family. Use of the English language reflects more distance; it is used for daily activities that are more formal and impersonal or for interactions that infer more respect (*respeto*). It would follow that, in regards to the pain experience, communication in Spanish may permit more expressive communication, but this may not indicate an exaggerated communication of the health problem. Instead, it may better communicate psychic pain or extreme somatic or emotional distress, as can be found in the pain experience (Reichman, 1997).

In regards to health beliefs and practices, respondents persisted in holding a westernized biological perspective. Many continued to subscribe to the biological or allopathic medical model, as opposed to being more spiritual or holistic. Most also reported visiting the doctor immediately in response to a new painful ailment. Of those who listed treatments they used for pain, most were over-the-counter pain relievers and anti-inflammatories, rather than alternative or prescription treatments.

These findings are consistent with prior research, which reports that symptoms of pain are not always treated by physicians. As many as 18% of individuals in severe pain have been reported to not have seen a physician for their pain at all. In one study, only 60% of individuals in pain were taking medications for the pain. This compares to about 45% for my study group. In research including all kinds of physical symptoms, 91% of subjects reported having some symptom. Yet only 16% of these individuals had consulted a physician for the symptom, and self-medication was a common response to symptoms. In addition, prior research has shown that the further removed an individual's generation is from the immigrant ancestor, the more individual ascribes solely to the biomedical model.

Pain prevalence

Because this study used a shorter time period (at least half a day) for a pain episode than did several studies, I expected to attain a somewhat higher pain prevalence than did other studies. This appeared to be the case.

Members of this working group appear to experience an unusually high prevalence of pain (94%), including chronic pain (56%). In studies of the general population, pain prevalence ranges from 20 to 65%, and chronic pain prevalence ranges from 25-45%. For my sample group, the median intensity of pain reported at "the most bothersome" site was 5 on the VAS, or of a moderate intensity. Half the participants reporting a rating between 4 and 7, and over half the participants had pain considered to be chronic and intermittent in nature. In other words, relative to the general population, these working individuals appear to spend a significant amount of their days and nights in pain. They also have experienced this pain for a long time. Given the physical labor required in their occupation, it would seem that this pain might continue to worsen with the continual physical strain.

Pain and psychological distress

Research repeatedly emphasizes the correlation between psychological distress and physical pain. Typically, distress is noted by negative affect such as anger, anxiety, or depression. My survey results show that as pain intensity increases, so do the reported feelings of anger, tension, and depression. These negative feelings are reported as intensity reaches a VAS score of 4 or 5. Since at least half the study group report experiencing their most distressful pain at or above a VAS of 5, half of the group are feeling mental distress as well as feeling pain.

Magni, et. al., (1993) reported that 16.4% of persons with chronic pain were depressed. In my study, 41% of individuals with chronic pain and 39% of individuals with any pain reported feeling depressed in association with their pain. These results should be interpreted with caution, as the measured psychological distress may not necessarily reach clinically significant levels. Nevertheless, the presence of psychological distress cannot be dismissed.

It is worth investigating this relationship between affect or psychological distress and pain intensity report in more detail, using more extensive and validated measures. As mentioned above, the average pain intensity rating for this group was a 5, and three quarters of the respondents with pain had an intensity greater than or equal to 4. Thus, most of the workers with pain are experiencing intermittent psychological distress. Research indicates that untreated pain and related distress is frequently found in various subject groups, both within and outside the clinical setting. Using standard psychological assessments in a community study, Edwards (2000) found psychological distress in a large proportion of women that were experiencing sub-clinical levels of pain.

Work and continued activity

Work risks.

Although many studies point to low education level and low income level as predictors for higher pain prevalence, a review of several studies found that after statistically holding physical load on the job constant, education level and income level were no longer significant in predicting disability. Long periods of standing and walking, repeated arm motions, and heavy lifting are a requirement of the type of work done by

participants in this study. As a result, these individuals may indeed be suffering the long-term effects of physical over-exertion.

The occupation from which this study group was taken has been cited as among the top five most at risk for losing time from work due to musculoskeletal injury (Bureau of Labor Statistics, 2000). This seems to support the high pain prevalence reported by this sample. In addition, Hispanics as a group, in both genders, are more likely to be employed in the top five high risk occupations than are Anglo-Americans or African-Americans of similar gender (Top 10 occupations by race/ethnicity and gender, 1998). In keeping with these statistics, Hispanics make up a large proportion of the work group evaluated in this study. This high occupational risk of injury can be costly to ignore, for both employer and employee.

Despite the risks of pain and associated psychological distress, there are many individuals who are willing to do risky or heavy physical work over many years of employment. Perhaps this is preferred over the risks of unemployment, financial instability, or dependence. In response to an open-ended question about why the participant thought they had pain in life, the individual stated, “It may be cause [I] work too much, but I can’t be with just not doing anything like working”.

Reflecting the structural pressure of negative work environments, individuals from lower SES groups (who are often of Hispanic and African-American ethnicity) have been found to attribute their pain to their work environment more than Anglo-Americans. Such a perspective was shared by participants in this study. Of those who responded to the open-ended question about the cause of their pain, a third said they believed their pain was due to conditions that occur at work, such as walking too much. As might be expected, the proportion of this response was higher than that found by Strauss, et. al. (2001), where 21% of respondents attribute their pain to work-related factors. Since the Strauss study surveyed random households, and consequently would have been likely to include several kinds of occupations, it is not surprising that the number would be lower.

Quality of life

Participants’ pain had an impact upon various aspects of their lives, including not only work but also social life. Despite the fact that all study participants were at work, one fourth reported that their pain had prevented them from being able to do the kind of work they had done previously. Almost two thirds reported that since they had pain they

had not found alternative (non-painful) activities that would keep them active and busy. Just over half stated that their ability to be socially active had decreased somewhat, and one in ten reported that their ability to be socially active was much less, since the pain started. Thus, the high pain prevalence is associated with varying levels of decreased quality of life. Decreased quality of life for less affluent individuals in pain has been similarly reported by Brekke, et. al. (2002), Eachus, et. al. (1999), and Urwin et. al. (1999, cited in McCarney and Croft, 1999)

Pain and coping

Social support

Issues regarding social support do not appear to relate directly to pain in this study. Due to the small sample size and short survey format, I cannot speculate accurately as to why there seem to be just a few particular relationships between pain experience and living conditions.

In this study, individuals who lived with a partner or spouse were less expressive when in pain. In addition, increased constancy of pain was positively related to living with children and negatively related to living with a partner or spouse. It is possible that the stress associated with taking care of children may be associated with more psychological distress overall, less pain tolerance, and consequently more episodes of pain. If living with an adult, an individual may have more opportunities to rest, take action to obtain pain relief, or do self-soothing activities. Sternbach (1986) has reported a strong relationship between reported stress level and the frequency of pain episodes.

This study group did report a high proportion of ties to family and friends, yet it is still possible that this resource would be helpful to medical outcome if included in the medical care planning and regimen. Bagley (1995) suggests that although we do not have a good understanding of specific health risks within the Mexican-American population, research data does imply the family plays a major role in health preservation of Mexican-American individuals.

Attitudes

Most of the participants maintain a positive attitude, despite their pain. Although most worry about whether the pain is indicative of something seriously wrong, most report they believe they can conquer their pain and think they can enjoy life despite their

pain. Optimism has been shown to be associated with positive health outcomes, and this may be a positive coping strategy for these workers. In regards to pain specifically, negative thoughts and avoidance of activity including social activity have been shown to accentuate distress related to pain. Stroud (2000) found that negative pain cognitions were consistent predictors of poor patient adjustment to chronic pain, over and above demographics, pain severity, work status, and pain beliefs. McCracken (1998) reported that greater acceptance of pain was correlated to lower reports of intensity, pain-related anxiety, pain-related avoidance behaviors, depression, and physical and psychosocial disability, and Boothby, et.al. (1999), reported that active coping, including ignoring the pain, is associated with better psychological and physical functioning. Thus, the positive attitudes of this group may assist these workers in continuing to be active despite pain.

On the other hand, if these workers are suffering unnecessarily with pain that could be lessened through appropriate medical care or alterations in the physical demands of the job, the pain should not be ignored. Hilbert (1984) has drawn attention to the fact that explanations for pain may be found within the culture of one's work group. A number of study participants stated they thought pain was a normal part of life. Individuals in this study group may be undertreating their pain, because they accept or ignore their pain. With such a high prevalence of chronic pain in this group, it seems that the participants in this study might benefit from more medical assistance.

Pain and culture

Demographically, this sample group was extremely homogenous, having similar ages, occupation, income levels, education levels, acculturation levels, and religious affiliations. While it was possible to compare male to female responses and, to some degree, compare different conditions of living with others, it was difficult to find unique cultural factors differentiating the pain experience.

Although this study did not explore pain expression in depth, responses to questions regarding pain behavior and open expression indicated that the individuals in this group are neither particularly demonstrative nor particularly stoic. Considering that the majority of the sample group are Hispanic, then two very strong stereotypes about Hispanic pain behavior seem not to apply here. Because the sample group appears to be

very highly acculturated, it is not surprising that stereotypical ethnic behavior does not seem to pertain.

Conclusion

I have chosen to discuss both results and the research design and method here, because research with under-served populations such as those comprised of lower SES or Hispanic-American individuals is particularly challenging. Not a great deal of research on pain and the poor, pain and working groups, nor pain and Mexican Americans exists, thus this study was by necessity exploratory in nature.

Limitations

Participants had a very limited time to take the survey due to their work demands, so I reduced the survey length and eliminated multiple questions on the same topic. While this permitted gathering of data pertaining to demographics, acculturation, and several areas related to the pain experience, validity was consequently decreased.

These individuals are hard to contact for many reasons, not the least of which is that they are very busy working multiple jobs as well as carrying out the other responsibilities of daily life. At work, it is difficult to contact them, because they do not hold enough position within the organization to make personal decisions about how to spend their time at work. Between jobs they may, out of necessity, commute by public transit and thus spend extra time just getting from one responsibility to the next.

There may also be language barriers, since many immigrants take jobs in the unskilled labor force typified by this study group. As suggested by the results of this survey, even individuals raised in this country may have less language skills and thus more difficulty answering survey questions than do the typical undergraduate college-student study participants. Completing a survey will take longer with these participants, and bilingual versions of a test may be necessary.

Consequently, in studying individuals who are in the lower SES, there is a tendency to find marginalized ethnic group members and recent immigrants. Even without a language barrier, these individuals may be shy about responding to survey questions, not knowing if the responses might somehow reflect badly upon them and

impede their opportunities in life. In this study, it was imperative that anonymity be retained, both regarding the participants occupation and their personal identification.

Additionally, survey questions may be offensive to persons from one ethnic background if the survey was designed by an experimenter from a different ethnic background. Even interpretation of the results can be skewed via cultural biases, if participants and experimenters come from different ethnic backgrounds.

In addition to ethnic and SES challenges, pain is itself a difficult entity to study. Not only is pain complex, including psychosocial, as well as biological factors, but pain sensation changes moment to moment, and the memory of pain sensation is influenced by mood on the day of report. Furthermore, individuals who suffer chronic pain change their attitude towards the experience over time, as they psychosocially adjust to the illness.

Self report has additional limitations, including variable response style and different external incentives between individuals. It is subjective. Different people express their suffering in different ways. Results will not be very generalizable, if only workers who were upset about their pain chose to volunteer to participate. Pain prevalence results would then be exaggerated. It is possible individuals thought that they might benefit by participating, because they could meet an experimenter knowledgeable in the subject of pain or willing to listen to their struggle with pain.

Because the survey was designed to be short and many questions were eliminated, validity is lower. For example, in this study several questions from the EPS and EPQ that pertained to heritage consistency were eliminated. To be more confident in assessment of participants' level of acculturation or ethnicity, a standard acculturation measure or ethnic identification measure could be given to a similar group of workers in a follow-up study. When participants are Mexican-American, it is always important to consider level of acculturation or heritage consistency, since this may significantly influence health beliefs and consequently pain perception.

Questions in this survey were high in face validity, and thus it would be easy for an individual to provide answers they thought the experimenter would like to hear. The length of time used for recall may introduce error, since accuracy of recall beyond two weeks time is questionable. Since mood has been shown in past studies to be highly correlated to pain as well as to affect ratings of pain intensity, reliability of results could

be improved by having the ability to statistically control for mood. In particular, measures of anxiety and depression would be useful, although they would take longer to administer.

Any survey given at one point in time has the limitation of not being able to assess cause and effect. The results in this study do not permit the evaluation of which elements in relationships precipitated others.

Focus group

In this study, a focus group, where survey design and content were discussed, was held after all surveys had been returned, for the purpose of inquiring about the participants' impressions of the "pain survey". It was hoped that any unusual perspectives in answering particular questions might come up in such a discussion.

Regarding offensive or sensitive topics, focus group participants did not find it offensive to be asked whether they used alternative care, specifically herbal remedies or a curandera. Some mentioned they would not know where to find a curandera these days, a further indication of the study participants' acculturation. Participants stated that they did not find a question about alcohol-use as a coping strategy to be offensive. They also thought that respondents would be more honest about survey questions if given in a written format. Some topics, such as those relating to religion and spiritual practice and to personal income, were in fact considered to be too sensitive, even in written format.

Additionally, a participant asked why one's religion would be important to a study on pain. Another asked what prayer (if referenced in a question) would have to do with pain and the body. This feedback on religion further indicates that these workers do not evaluate their pain in a bicultural or holistic, traditional Hispanic manner, but rather view their condition solely as biomedical.

In regards to the survey format and language, the focus group members found the assessment to be a good length and stated that the written words and questions were not too hard. Nevertheless, several questions were not answered by respondents, indicating that there may have been confusion for some people about the meaning of some questions.

Future Directions

Future research design should attempt to establish a more random sampling procedure or survey a larger sample of this working group, in order to reduce volunteer

bias. Offering and/or introducing the survey without revealing that it relates to the topic pain may also reduce volunteer bias. Individuals in chronic pain, which includes over half of this study participant group, have been shown to greatly desire the opportunity to talk about their pain publicly.

To explore cultural differences, this research could be replicated using groups of differing SES or differing levels of acculturation, or different ethnicity. As mentioned above, it is difficult to find significant numbers of respondents from lower SES or specific ethnic groups. This is why studies of pain and ethnicity often suffer from small sample sizes.

To draw out more qualitative information, or to clarify difficult dynamics, such as those involved in social support, the written survey could be followed by a structured oral interview. The use of oral format can also help obtain responses from individuals who have difficulty with reading and/or writing. One focus group member would have much preferred to take the survey orally, despite loss of anonymity. Examiners should be able to communicate in Spanish, or at least to code-switch as necessary, if the survey is going to be given orally to a population that is bilingual or solely Spanish-speaking. Rankin-Hill (2002) suggests that a great deal of information can be learned by interviewing in the home, because it is there that one sees the many modifications an individual makes to accommodate their pain. Future studies could focus specifically on medical care seeking and treatments (both prescribed and home remedies) applied by such working adults for relief of pain.

In an oral survey, or when participants have more time to complete the survey, one could use a Likert-scale response set for the last section of this survey, as was done in EPS and EPQ used by Bates and her colleagues. This would provide higher accuracy in response; however, there may be a response bias from Mexican-Americans. Studies report that there is a cultural response set typical of Hispanics, in which they tend to endorse extreme values of scales more often than non-Hispanics (Prelow, et. al., 2000, p.228). It has been suggested that this is due to an Hispanic value of sincerity, in which one must respond with a clear – not middle of the road – expression of one’s position (Prelow, et. al., 2000). These authors used a 4 pt. Likert scale that included the choices: “don’t do this at all”; “do this a little bit”; do this a medium amount”; “do this a lot”.

Pain intensity could also be more accurately measured by the McGill Pain Questionnaire, (MPQ) which has been developed and applied in several languages. The MPQ was developed by Melzack in 1975, and it was used by Bates, et. al. (1992, 1993, 1994, 1995, 1996, 1997) in their Puerto Rican pain research. This measure was designed to be administered verbally and consists of a 78-item adjective checklist that can be scored on the following three sub-scales, or dimensions of pain: sensory; evaluative; and affective. It generally takes 10-15 minutes to complete, but may take substantially longer with this subject pool.

Alternatively, the VAS could be offered twice. One scale could be used for the pain at its most bothersome intensity, and the other could be used for the pain that is the least bothersome intensity. This would provide more of a range of pain intensity experienced by workers. Since most of my sample group experienced intermittent pain, perhaps the intensity rating for their most bothersome site is not an accurate assessment of the likely distress they feel in response to pain over the course of the whole month.

As mentioned above, any of the constructs addressed in this study would be better evaluated by longer measures that have established strong validity. A psychological measure to consider for assessment of psychosocial aspects of the pain experience is the West Haven Yale Multi-dimensional Pain Inventory (WHYMPI) developed by Kerns, Turk, and Rudy in 1985. It contains 52 items and assesses the following scales: pain severity; interference; support; life-control; and affective distress. Again, this measure may take longer to administer, given the education level of these participants.

Since the group used for this study has a high prevalence of pain and the associated occupation has a high risk of musculoskeletal injury, there may be environmental factors that could lessen physical overexertion, psychological distress, and the probability that injury will result in loss of time from work. Research focused more specifically on occupational biomechanics issues may assist in determining whether some of the workers in this study group are feeling unnecessary pain due to work load. Once the physical work load is understood, research could specifically target work pressure or stress, monotony, and support from peers and supervision, since these have also been shown to affect work disability outcomes.

The findings of this study, including both the survey results and the challenges of the research process, are useful, because they provided direction for future work. Lott

(2002) has challenged psychologists to include the poor in studies of a “psychology of diversity”. The author suggests that despite a commitment of the APA to study this topic, there has been a lack of scholarly work with the poor, and that the lack of past work on diversity has demonstrated the existence of a class system in psychology resulting from cognitive and behavioral distancing from the poor.

The results of my brief interview with working adults in the lower SES suggests the need to further investigate and improve the working conditions and quality of life for individuals in similar work groups.

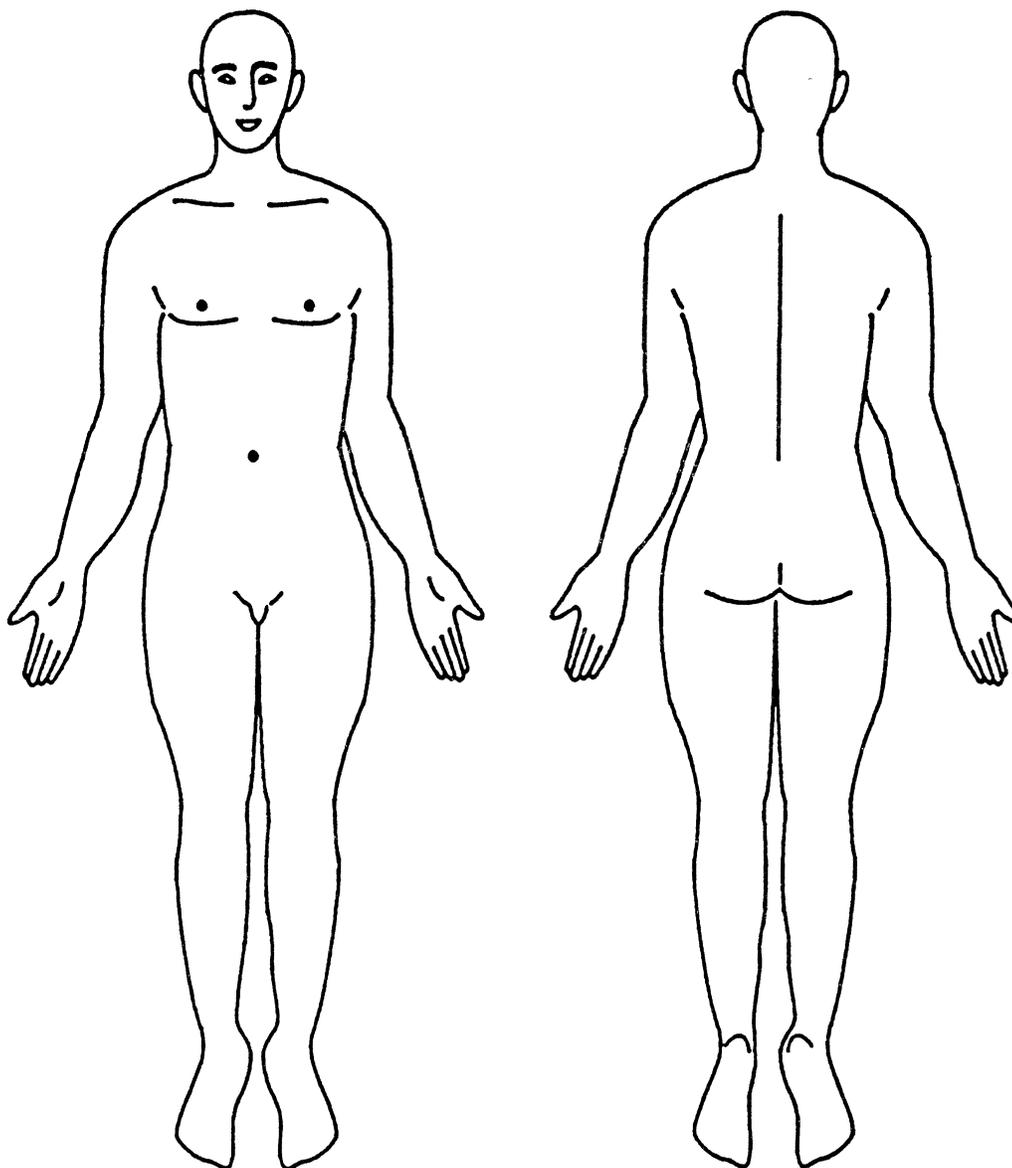
APPENDIX A

Instructions:

Think about how your body feels. Remember back for one month. Did you feel any pain anywhere in your body for at least half a day during the last one month? . "Pain" means any hurt, sore, or ache that is either constant or intermittent.

Please use a pencil to shade in all the areas where you have experienced pain for at least 12 hours (half a day) during the past month.

Put a number one by the pain that bothers you the most. Put the next numbers (ie: 2, 3, 4, and so on) by each of the other places where you have had pain this month.



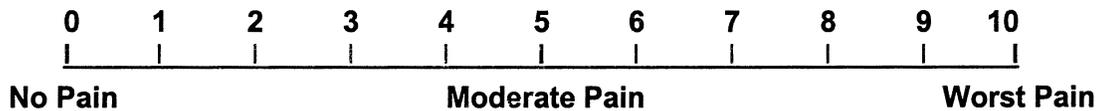
Visual Analog Scale

Instructions.

Please think about the pain that bothers you the most, and use this line to say how much it hurts.

Make a mark on this line to show the number corresponding to the amount of pain you typically feel. Zero means no pain at all, and ten means the worst pain you can imagine.

Use this chart to show how much pain you are having. Zero means no pain and ten means the worst pain imaginable.



SECTION A

1. Year of birth: _____ 2. Place of birth: _____
(State) (Country)
3. Male ___ or Female ___
4. Marital Status: Single _____ Separated/Divorced _____ Widowed _____
Married with partner _____ Unmarried with partner _____
5. Education: Circle the number which indicates the highest level of school completed.
- | | | | | | | | | |
|---|---|---|---|---|---|---|---|--|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Grade school |
| 1 | 2 | 3 | 4 | | | | | High school |
| 1 | 2 | 3 | 4 | | | | | Trade school or College |
| 1 | 2 | 3 | 4 | | | | | Post Bachelors, or Professional School |
6. Are you presently working: _____ Full-time? _____ Part-time?
7. Do you consider yourself to be:
_____ Healthy
_____ Unhealthy
_____ Other (Please specify)

-
8. Do you live: (Please circle as many as apply)
- a. Alone
 - b. With a partner or spouse
 - c. With children
 - d. With other relatives
 - e. With friends
9. How long have you lived in the continental United States? _____
Year(s) Month(s)
10. What religious tradition best describes your religion of choice?
- _____ Protestant
 - _____ Catholic
 - _____ Jewish
 - _____ Agnostic/Atheist
 - _____ Other (Please specify) _____

11. Were you, or your parents or your grandparents born in a country that is not the United States?

_____ Yes _____ No

Whom ? (indicate maternal grandmother or maternal grandfather etc.) In what country?

12. What language was spoken in the home when you were a child?

_____ English

_____ Spanish

_____ Other (please specify) _____

SECTION B

For the following questions, please consider the pain you rated as Number One on the drawing of the body (page 1).

1. How long ago did the pain start?

_____ Less than one month

_____ Between one and three months

_____ Between three and six months

_____ Longer than six months

2. Is the pain: _____ Rarely present ?

_____ Sometimes present ?

_____ Always present ?

3. What would you say was the cause of your pain? (How did it start?) _____

4. Why do you think you have pain in your life? _____

5. Do you ever take medication from a doctor to ease your pain? _____ Yes _____ No

6. Do you ever take anything else to ease your pain? _____ Yes _____ No

7. Please list treatments/therapies used for pain, including surgery.

8. Has your desire for social activities:

- _____ Remained the same as before the pain?
- _____ Become somewhat less than before the pain?
- _____ Become much less than before the pain?
- _____ Completely disappeared?

9. How has your pain affected your ability to engage in social activities?

- _____ It remains the same as before the pain.
- _____ It is somewhat less than before the pain.
- _____ It is much less than before the pain.
- _____ I am not longer able to engage in social activities

SECTION C

Answer each question by circling Yes or No - which best describes your position.

- | | | |
|---|-----|----|
| 1. I see and visit my brothers, sisters, or parents regularly. | Yes | No |
| 2. I still identify with the cultural traditions of my childhood, and these traditions are still part of my life today. | Yes | No |
| 3. I talk to others frequently about my pain. | Yes | No |
| 4. It helps me to talk about my pain. | Yes | No |
| 5. I get emotional when I describe my pain to doctors or other persons. | Yes | No |
| 6. When the pain is strong, sometimes I sigh or moan. | Yes | No |
| 7. I cannot hide the fact that I have pain. | Yes | No |
| 8. The pain prevents me from doing the work I did previously. | Yes | No |
| 9. Although I had to change activities due to the pain, I have been able to find other activities that keep me active and busy. | Yes | No |

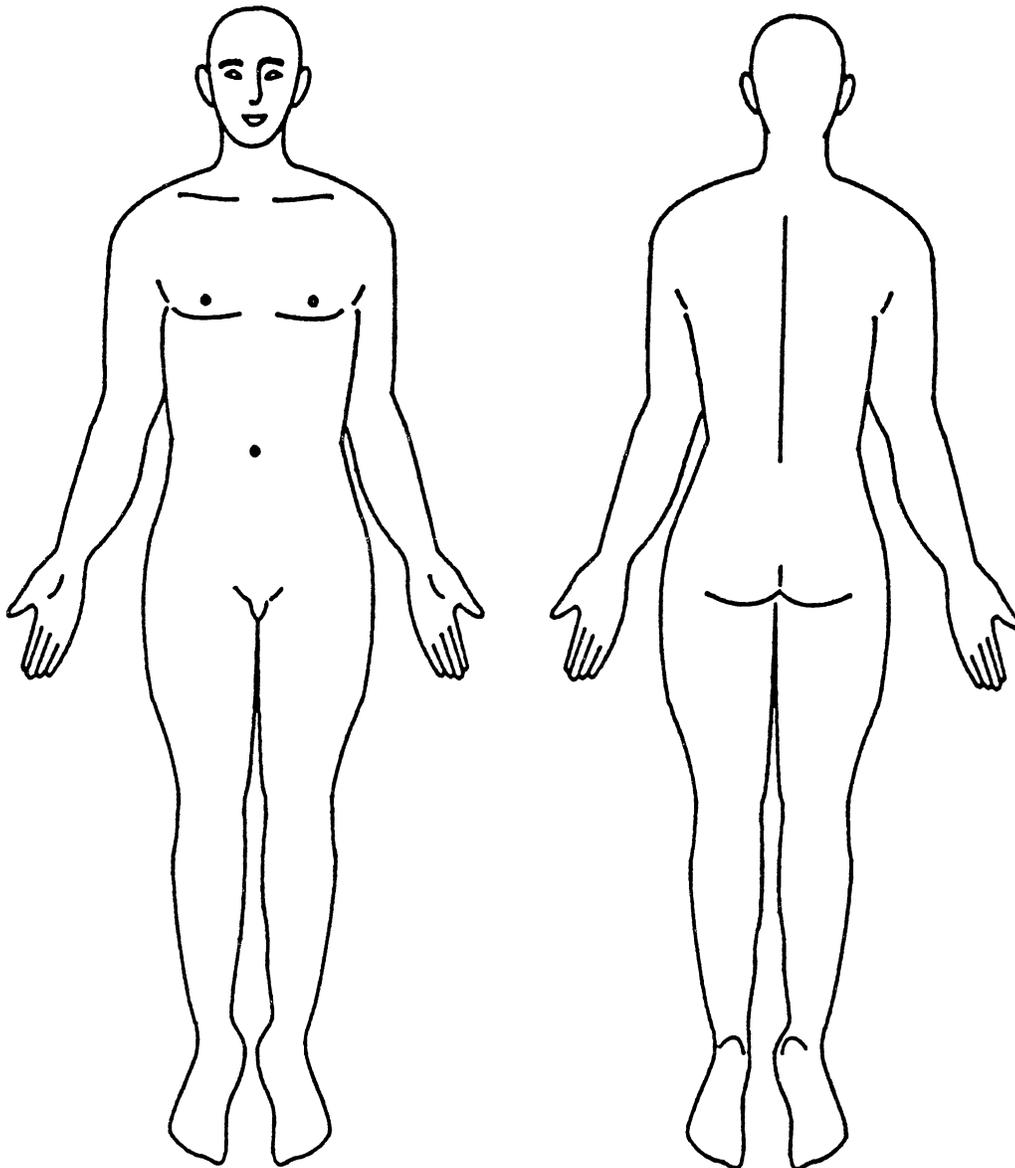
10. Because of the pain I worry about what might be wrong with me.	Yes	No
11. I think a lot about my pain.	Yes	No
12. My greatest worry is that I might have cancer or another serious disease.	Yes	No
13. I think a lot about what I might have done to deserve this pain.	Yes	No
14. I feel tense when I have a lot of pain.	Yes	No
15. I feel anger when I have pain.	Yes	No
16. I feel depressed when I have pain.	Yes	No
17. I intend to conquer this pain.	Yes	No
18. I will never enjoy a full and happy life while I have this pain.	Yes	No
19. When the pain began I went immediately to the doctor.	Yes	No
20. I do not believe in taking medication for pain.	Yes	No
21. I have gone to my family and friends for help since I have had this pain.	Yes	No
22. My family and friends support me during moments when I have serious problems because of my pain.	Yes	No

Instrucciones:

Piense en cómo se siente su cuerpo. Recuerde atrás para un mes. ¿Sentía usted dolor en alguna parte de su cuerpo por lo menos medio día durante el último mes? El “dolor” significa cualquier lastimado, dolorado, o el dolor que es constante o intermitente.

Utilice por favor un lápiz para sombrar en todas las áreas donde usted ha experimentado el dolor por lo menos 12 horas (metad del día) durante el último mes pasado.

Ponga un número uno (1) para el dolor que las incomodidades usted el la mayoría y que mas le moleste. Ponga los números siguientes (i.e. 2, 3, 4 etcétera) alado de algunos otros dolores que a tenido durante el mes.



Visual Analog Scale

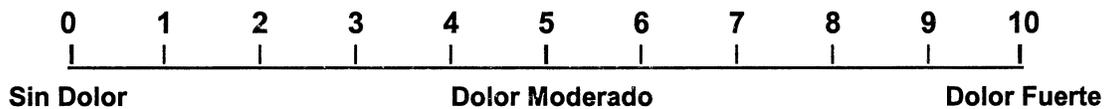
Instrucciones:

Piense por favor del dolor que las incomodidades usted en la mayoría, y utiliza esta línea para decir cuánto lastima.

Haga una marca en esta línea para demostrar el número que corresponde a la cantidad de dolor que usted se siente típicamente.

Cero (0) no significa ningún dolor en todos, y diez (10) medios el dolor peor que usted puede imaginee.

Use este cuadro para decir cuanto dolor tiene actualmente. El cero (0) indica ningún dolor, y el numero 10 indica el dolor mas fuerte (o mas intenso).



Sección A

1. Año de Nacimiento: _____ 2. Lugar de Nacimiento: _____
(Estado) (País)

3. Hombre _____ o Mujer _____

4. Estado Civil: Soltero(a) _____ Separado/Divorciado _____ Viudo(a) _____
Casado y con pareja _____ Viviendo con pareja _____

5. Educación: Ponga un círculo en el número que indica al nivel más alto de la escuela terminado.

1	2	3	4	5	6	7	8	Escuela Primaria
1	2	3	4					Escuela Secundaria
1	2	3	4					Preparatoria, o Bachillerato
1	2	3	4					Universidad o nivel Post-graduado

6. ¿Está usted trabajando: _____ a tiempo completo (40 horas)?, o
_____ Medio tiempo?

7. ¿Se considera usted:

_____ Saludable ?
_____ Enfermo(a) / incapacitado(a) ?
_____ Otro? (favor de especificar)

8. ¿Usted vive: (Por favor circule las que aplican)

a. Solo(a)?	d. Con otros familiares ?
b. Con un esposo(a)?	e. Con amigos(as)?
c. Con sus hijos(as) ?	

9. ¿Cuanto tiempo ha vivido usted en los Estados Unidos? _____
Año(s) Mes(es)

12. ¿Que tradición religiosa describe lo más mejor posible su religión de los que tiene para escoger.

_____ Protestante
_____ Católica
_____ Judía
_____ Agnóstica/atea
_____ Otro (favor de especificar) _____

11. ¿Usted, sus padres o sus abuelos nacieron en otro país que no es los Estados Unidos?

_____ Si _____ No

¿Quién? (indique abuela o abuelo por parte de madre o de padre, etc.) y ¿En qué país?

12. ¿Qué lenguaje habla usted en su casa (ojar) cuando era niño(a)?

_____ Español

_____ Anglais

_____ Otro lengua (por favor de especificar) _____

Sección B

En las siguientes preguntas, favor de considerar el dolor que usted indicó como el número uno en el dibujo del cuerpo (la primera página).

1. ¿Cuándo tiempo duro su dolor?

_____ Menos de un mes

_____ Entre uno y tres meses (1-3 meses)

_____ Entre tres y seis meses (3-6 meses)

_____ Mas de seis meses (>6 meses)

2. ¿Este dolor lo siente:

_____ muy pocas veces?

_____ Muchas veces?

_____ Constantemente?

3. ¿Que usted diría era la causa de su dolor? (¿Que lo hizo comenzar?) _____

4. ¿Porqué usted piensa tiene dolor en su vida? _____

5. ¿Alguna vez a tomado medicinas de doctores medicales para el dolor? ____ Si ____ No

6. ¿Alguna vez a tratado de tomar otros medicamentos para el dolor? ____ Si ____ No

7. Indique los tratamientos/terapias que usted haya recibido para el dolor, aparte de la cirugía.

8. Su deseo de participar en actividades sociales.

(Por favor circule uno) **Mi deseo:**

- _____ es igual que antes de comenzar el dolor.
_____ es un poco menos que antes de comenzar el dolor.
_____ es mucho menor que antes de comenzar el dolor.
_____ ha desaparecido completamente.

9. ¿Como ha afectado su dolor su participación en actividades sociales? ¿Escoja la respuesta?:

- _____ Es igual que antes de comenzar el dolor.
_____ Es un poco menos que antes de comenzar el dolor.
_____ Es mucho menos que antes de comenzar el dolor.
_____ Ya no puedo participar en las actividades sociales.

Sección C

Para contestar cada pregunta o declaración, ponga un círculo alrededor a Si o No de la respuesta más parecida a la suya.

- | | | |
|--|----|----|
| 1. Veo y me reúno con mis hermanos, hermanas o padres con regularidad. | Si | No |
| 2. Todavía me identifico con las tradiciones culturales de mi niñez y estas tradiciones siguen siendo parte de me vida hoy en día. | Si | No |
| 3. Frecuentemente le hablo a otros acerca de mi dolor. | Si | No |
| 4. Me ayuda hablar de mi dolor. | Si | No |
| 5. Me emociono cuando describo mi dolor a los médicos u otras personas. | Si | No |
| 6. Cuando el dolor es fuerte, a veces suspiro y gimo. | Si | No |

7. No puedo ocultar que tengo dolor.	Si	No
8. El dolor no me dega hacer el mismo tragajo que hacía antes.	Si	No
9. Aunque tuve que cambiar mis actividades debido al dolor, he podido encontrar otras actividades y trabajo que me mantienen activo(a) y ocupado(a).	Si	No
10. El dolor hace que me preocupe por lo que pueda estar mal conmigo.	Si	No
11. Pienso mucho en mi dolor.	Si	No
12. Mi mayor preocupación es que pueda tener cáncer u otra enfermedad grave.	Si	No
13. Yo pienso mucho en qué habré hecho para merecer este dolor.	Si	No
14. Cuando tengo mucho dolor me seinto muy tenso(a).	Si	No
15. Cuando tengo mucho dolor me siento enojado(a) (coraje)	Si	No
16. Me siento atemorizado(a) cuando tengo dolor.	Si	No
17. Me siento deprimido(a) cuando tengo dolor.	Si	No
18. Estoy decidido(a) a vencer este dolor.	Si	No
19. Jamás tendré una vida feliz o completa mientras sufra este dolor.	Si	No
20. Cuando me empezó el dolor fui al médico inmediatamente	Si	No
21. Yo no creo en tomar medicinas para el dolor.	Si	No
22. Yo he ido con mi familia y a mis amigos por ayuda cuando tengo dolor.	Si	No
23. Mi familia y mis amigos me han apoyado durante los momentos en que he tenido problemas serios a causa de mi dolor.	Si	No

APPENDIX B

CONSENT FORM

*Community Pain Study – Health Psychology
Southwest Texas State University*

Principal Investigator: *Julia Z. Deal, Graduate Student (ph.512-245-2526)*

Research Supervisor: *Dr. Leticia Y. Flores, Assistant Professor (ph.245-3167)*

Purpose & Benefits:

You will be asked to describe pain in your own words. We hope that the information you give will help medical doctors and nurses pay better attention to their patients' pain experience. Most research studies have asked Anglo-American hospital patients about their pain. Not many have asked regular, working people, who are not seeing a doctor regularly, to explain their pain.

Procedures:

This study is voluntary. You may decide not to participate at any time. The experimenter (Julia Deal, or a student assistant under Julia's supervision) will tell you basic information about this survey. The experimenter will then answer questions you have. If you agree to participate, the experimenter will ask you to sign this form and then answer some questions.

If you participate, you will be asked to identify where you have had pain during the last month, rate the intensity of that pain, and answer several questions about your background and your pain experience. This test should take about fifteen minutes.

At a future date, a small group of people who have taken this test will be selected randomly and asked to volunteer again. If you are asked, and if you agree to participate at that time, you will meet the experimenter for an anonymous discussion group. You will be asked for your opinions about the test questions. That meeting should take 30-45 minutes.

Risks:

Some people may find that answering some questions are uncomfortable. You do not have to answer the questions, if you do not want to. Participation will have no effect on your treatment or benefits as an employee of Southwest Texas State University.

Confidentiality:

All the information obtained in this experiment will be anonymous. You will not put your name or address or phone number on the test form. (Each survey will be identified by a number that is sequential and not related to your personal identity.)

The answers to the survey will be only be available to the experimenter, her supervising faculty, and students working with the Health Psychology program. Conclusions from this study will be published as a "Thesis", and one copy will be kept in the Alkek library. In that paper, participants will be referred to as "an occupational group at a southern university". If there are new and unique findings, this study may be published in a research magazine. Again, the participants will not be individually identified, and they will be referred to as "an occupational group at a southern university".

Signature of Experimenter

Date

Participant's Statement:

I have read the information about this study, presented above. I voluntarily agree to participate in this activity. I understand that future questions I may have about the research or my rights as a subject will be answered by the investigator listed above. I will be given a copy of this consent form, so I may contact the experimenter with any questions.

Signature of Participant

Date

Proposito y Beneficios:

Se le pedira que describa el dolor del que sufre, en sus propias palabras. Esperamos que la informacion que usted comparta con nosotros le puede ayudar a los medicos y enfermeras darle mejor atencion a la experiencia de sus pacientes con el dolor. La mayoría de los estudios de investigacion sobre la experiencia con el dolor han cuestionado a pacientes anglos hospitalizados. Muy pocos de estos estudios se han dirigido a un grupo de gente trabajadora que no consulta a su medico regularmente sobre su dolor.

Proceso:

Participacion en esta investigacion es totalmente voluntaria. Usted puede decidirse a no participar durante cualquier etapa del estudio. La investigadora Julia Deal o un estudiante asistente bajo la supervision de Julia Deal le dara informacion sobre esta encuesta(survey). Si usted tiene preguntas sobre esta investigacion el investigador estara a su disposicion para contestarlas. Si usted decide tomar parte en esta investigacion de estudio, el investigador le pedira que firme la el documento apropiado Luego le pidera que conteste algunas preguntas. Si se decide participar le preguntara en que parte de su cuerpo ha sentido dolor durante el mes pasado, y el grado de intensidad del dolor. Le pedira que conteste unas preguntas sobre su historial y sobre su experiencia con el dolor. Esta encuesta se tomara unos quince(15) minutos.

En una fecha futura, un pequeno grupo de personas que participaron en esta investigacion seran escogidas al azar(sin proposito) y se les pedira que participen de nuevo. Si usted es seleccionada y decide participar se encontrara(reunira) con el investigador para llevar una discusion con un grupo anonimo. Se le pedira su opinion sobre las preguntas contenidas en el cuestionario. La reunion del grupo se llevara de 30-40 minuto

Riesgos:

Algunas personas encontraran que al responder a algunas preguntas es muy incomodo. Usted no tiene que responder a cualquier pregunta si no desea. Su participacion no tendra ningun efecto en su trato o beneficios como trabajador de la Universidad de Southwest Texas State.

Confidencialidad:

La informacion obtenida atraves de esta investigacion sera anonima. Usted no pondra su nombre ni su numero de telefono en este cuestionario. Cada cuestionario sera identificado utilizando un numero fuera de orden no relacionado de ninguna manera con su identidad. Las respuestas a estas preguntas seran disponibles nada mas al investigador, la supervisidora(miembro de la

faculta) y estudiantes en el departamento de psicología de salud. Las conclusiones obtenidas a través de esta investigación serán publicadas en un "Tesis" y una copia será puesta en los archivos de la biblioteca ALKEK. En este documento los participantes serán identificados como "un grupo de trabajadores de una universidad del sur". Si hay nuevos o únicos descubrimientos en esta investigación podrían ser publicados en un magazine de salud. Le repito que los participantes no serán identificados individualmente y serán referidos como "un grupo de trabajadores de una universidad del sur"

Firma de Investigador

Fecha

Declaracion de Participante

He leído la información sobre esta investigación presentada en la página anterior. Estoy voluntariamente de acuerdo a participar en esta investigación. Comprendo que cualquier pregunta sobre esta investigación o sobre mis derechos como participante serán contestadas por el investigador indicado al principio de esta declaración. Recibiré una copia de este documento de consentimiento para poder ponerme en contacto con el investigador si surgen algunas preguntas.

Firma de Participante

Fecha

GLOSSARY

HERITAGE CONSISTENCY

From Spector, R. E., (2000). Cultural health and Diversity in illness, 5th edition, Prentice-Hall, N.Y., pp.78-81.

“Heritage consistency is a concept developed by Estes and Zitzow (1980) to describe ‘the degree to which one’s lifestyle reflects his or her respective tribal culture.’ The theory has been expanded in an attempt to study the degree to which a person’s lifestyle reflects his or her traditional culture, whether of European, Asian, African, or Hispanic origin. The values indicating heritage consistency exist on a continuum, and a person can possess value characteristics of both a consistent heritage (traditional) and an inconsistent heritage (acculturated). The concept of heritage consistency includes a determination of one’s cultural, ethnic, and religious background (see figure below).”

Socialization

Culture

Ethnicity

Religion

Model of heritage consistency (four overlapping components)

- | | |
|---------------------------|---------------------------------|
| I. SOCIALIZATION | III. RELIGION |
| Extended family | Extended family |
| Place reared | Church membership/participation |
| Visits home | Historic beliefs |
| Raised w/extended family | IV. ETHNICITY |
| Name | Extended family |
| II. CULTURE | Resides in ethnic community |
| Extended family | Participates in folkways |
| Participation in folkways | Socializes with members |
| Language | of same ethnic group |
| | Identifies as ethnic-American |

Socialization. “The process of being raised within a culture and acquiring the characteristics of that group.”

Culture. “Culture is a ‘metacommunication system,’ wherein not only the spoken words have meaning, but everything else as well (Matsumoto, 1989, 14)”

Religion. “The belief in a divine or superhuman power or powers to be obeyed and worshipped as the creator(s) and ruler(s) of the universe; and a system of beliefs, practices, and ethical values.”

Ethnicity. “The condition of belonging to a particular ethnic group. . . the phenomenon of ethnicity is ‘complex, ambivalent, paradoxical, and elusive’ (Senior, 1965, 21). . . . There are 106 ethnic groups and more than 200 American Indian groups in the United States”

“Ethnicity is indicative of the following characteristics a group may share in some combination:

1. Common geographical origin
2. Migratory status
3. Race
4. Language and dialect
5. Religious faith or faiths
6. Ties that transcend kinship, neighborhood, and community boundaries
7. Shared traditions, values, and symbols
8. Literature, folklore, and music
9. Food preferences
10. Settlement and employment patterns
11. Special interest with regard to politics in the homeland and in the United States
12. Institutions that specifically serve and maintain the group”
13. An internal sense of distinctiveness
14. An external perception of distinctiveness”

DEFINITIONS

Acculturation

Process through which one ethnic or cultural group assimilates or adapts to another ethnic group or another culture. An individual may exchange their own values, language, or lifestyle for those of the predominant culture. This can include assimilation of particular attitudes, customs, and behaviors, such as those generally accepted and expected by the American medical profession*.

(Gordon, 1997, Lipton and Marbach, 1984, p.1284, Zea, 1995)

*These are values that have been established by middle and upper middle class, primarily male, Anglo-American medical practitioners.

Cognitive appraisal

The process whereby an individual judges whether a specific stressful encounter will result in the preservation of well-being or not and mobilizes efforts to manage the situation.

(Folkman, et. al., 1986, cited in Barkwell, 1991)

Coping

The efforts and individual makes to lessen or reduce the impact of a stressor.

(Lazarus & Folkman, 1984, cited in Prelow, et. al., 2000)

Culture.

Shared values, beliefs, knowledge and understandings about what words and actions mean, and the ways in which these values and beliefs are expressed.

The distinctive knowledge, habits, responses, ideas, language, and ways of living, working, or playing shared by a group of people.

Culture acts as an interpretive guide for the symbolic significance people attach to behavior, social interactions, and the material products of human life.

Includes health beliefs and health practices.

(Davidhizar, et.al., 1997, Gordon, 1997, Zea, 1995)

Ethnicity and the pain experience.

An individual's behaviors, attitudes, beliefs, and meanings associated with pain,

many of which are learned from the social group, whether society, community, or family.

(Lipton & Marbach, 1984)

Ethnicity.

An individual's identification as part of a social group with a common racial, national, tribal, or linguistic background. An ethnic group can hold common cultural beliefs, values, or patterns of behavior, as well as history, experience, or ancestry. These qualities may encompass social, psychological, cultural, and political realms.

(Edwards, et. al., 2001, Gordon, 1997)

Hispanic

A person of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin regardless of race (U.S. Office of Management and Budget, cited in Zea, 1995)

Pain behavior

Changes in facial expression, such as grimaces; changes in demeanor or activity; certain sounds made by the victim, such as sighing, groaning; or words used to describe the pain or to appeal for help.

Some pain behavior is revealed or expressed (public pain), other behavior is not (private pain). In the extreme this presents as "expressive" or demonstrative pain behavior versus "stoic" pain behavior.

(Helman, 1994)

Pain expression.

An individual's way of publicly showing and behaviorally responding to pain.

Pain threshold

The least experience of pain that a subject can recognize. Psychologists classically define the threshold in terms of the stimulus, and that limits the usefulness of pain threshold for clinical application. The stimulus is not pain and cannot be a measure of pain outside the confines of psychophysical modeling.

(IASP, 1999)

Pain tolerance level

The greatest level of pain that a subject is prepared to tolerate. Because the pain tolerance level is the subjective experience of the individual, the same considerations limit the clinical value of pain tolerance as pain threshold.

(IASP, 1999)

Quality of Life

Satisfaction with life, including the domains of physical and psychological well-being, social concerns, and spiritual well-being.

(Gordon, 1997)

Social Assimilation.

Process by which an individual integrates with members of the dominant culture at the level of close and intimate relationships. Greater social assimilation is indicated by the degree to which member of one's primary network differ from him/her in terms of national, religious, or racial ancestry – at the community level, at the social group level, and at the family level. At the family level, assimilation is determined by the degree of orientation to family tradition and authority.

(Lipton and Marbach, 1984, p.1284)

The pain experience.

An individual's perception and manifestation of pain, including thoughts, feelings, reactions, expectations, and past experiences associated with pain.

(Martinelli, 1987)

Hispanic Cultural Values (from Zea, 1995)

Aguantar

Tolerating adversity; long-suffering. Associated with self-sacrifice in caring for the home and others. May be supported by spiritual beliefs.

Allocentrism

Group-orientation

Familialism

Family orientation.

Feelings of mutual obligation to provide and receive support from one's family (Marin & Marin, 1991, cited in Prelow, et. al., 2000).

Interdependence

Values a more relational, less independent stance. The well-being of the group is valued, and an individual is thought to progress most with the help of others and through reciprocation for the support received. It is not the same as dependence.

Machismo

Maleness, or virility. Dominance. Associated with the ability to provide for the group or family.

Respeto (respect)

Deference to power and to authority figures.

Simpatia

Congeniality orientation. Associated with interpersonal conflict avoidance, as well as a climate of support for those in need.

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VITA

Julia was born at Walnut Creek, California in 1956, the first child of chemists Virginia Z. Deal and Carl H. Deal II, PhD. After completing high school in Houston, Texas, she attended the University of Houston for one semester and then entered Duke University, Durham, NC as an undergraduate student. During the Spring and first Summer Semesters, 1977, she attended classes at the Duke University Marine Station in Beaufort, NC. She completed her independent research on the morphology of Hairstreak Butterflies. Julia graduated magna cum laude from Duke in 1978, with a B.S. in Zoology, having also completed requirements for the major in Art Design.

Following graduation, Julia attended the Summer Workshop at Rhode Island School of Design in 1978, studying Watercolor and Design Structure. In the Fall of that year, she entered Texas Tech University, Lubbock, TX as a graduate student. From the summer of 1979 to the summer of 1980, Julia completed internship requirements for her degree at Texas Tech by working at the Carnegie Museum of Natural History, Pittsburg, PA in the Departments of Mammalogy, Education, and Exhibits. She graduated from Texas Tech University in December of 1980, having completed requirements for the Degree of Master of Arts in Museum Science, with minors in biology and art.

During her undergraduate years, Julia gained work experience as a chemistry technician for Shell Development Company, Houston, TX and a teaching assistant in zoology at Duke University. As a graduate student, Julia was employed as a teaching assistant in the Biological Sciences Department and as an exhibits assistant at The Museum of Texas Tech University. After graduation, Julia was employed at various locations as a museum exhibit designer, museum programs interpreter, museum programs administrator, graphic designer and illustrator, chemistry technologist, administrative assistant, or contract illustrator. She was certified to work with hazardous and radioactive chemicals at a SARA-OSHA Superfund Site. Julia has prepared annual reports, brochures, certificates, invitations, and illustrations for Lawrence Livermore National Laboratory and has illustrated the "owl" logo used by Kautz-Ironstone Vineyards on all their products.

In the summer of 1996, Julia entered the University of California, Berkeley, Extension Certificate Program in Art Therapy. She completed her 700-hour supervised practicum requirements working with children at the Pediatrics ward and Cancer Center of University Medical Center, Lubbock, TX, and the Family Crisis Center, Bastrop, TX. After entering the Graduate College of Southwest Texas State University in the Fall of 1999, Julia received her Certificate in Art Therapy from UC Berkeley. Her required case study involved the use of art therapy with a 6-year old Mexican American boy housed in a women's protective shelter. During the Fall and Spring semesters 2000-2001, Julia completed her 450-hour supervised practicum requirement in Health Psychology at the St. David's Rehabilitation Hospital in Austin, TX. Papers prepared for courses in the Masters Program in Health Psychology covered topics in: Obesity and health; the neurophysiology of Guillian-barré Syndrome; traditional (non-allopathic) health care providers; (use of the Julia Cameron's "Artists Way" techniques in) group therapy for battered women in a protective shelter; teaching art and observation in challenged populations (as presented in a case-study by art educator Henry Schaeffer-Simmern); and use of Contact Improvisational Dance with Spinal Cord Injured individuals.

In addition to her volunteer work, Julia has been paid to do art therapy with clinical populations as an Adjunct Faculty member of Las Positas Community College, Department of Art, having held classes at the Veterans Affairs Nursing Home and Alzheimer's Unit, Livermore, CA. Julia is presently employed by the Department of Art and Design, SWTSU, San Marcos, TX and resides at 817 Highland Terrace, San Marcos, TX.

Julia enjoys being outdoors, horseback riding, photography, watercolor painting, traveling, gardening, cooking, singing, and dancing, when she can find the time to "re-create".

