

Culture and pain: A Mesoamerican perspective

Culture has been identified as a factor that influences a person's reaction to and expression of pain. Research in the area of pain and culture has not established a clear link between cultural meanings and attitudes associated with pain and pain behaviors. The purpose of this ethnohistoric study was to explore the beliefs related to the experience of pain within ancient Mesoamerica. The six themes that emerged from this study represent efforts related to the discovery of the epistemics of cultural meanings of pain in contemporary Mesoamerican cultures, specifically Mexican-Americans. These findings serve as a benchmark from which to understand Mexican-American meanings, expressions, and care associated with pain.

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CULTURE HAS LONG been recognized in nursing research and practice as a factor that influences a person's reaction to and expression of pain. Attitudes and reactions to pain are learned in early childhood, within the context of culture group membership. Children learn how to respond to pain, to whom the pain should be reported, and measures that are helpful in relieving pain.¹ Thus, an individual's perception and expression of pain, the meaning and attitude assigned to pain, and the care associated with pain experiences can be said to be culturally derived.¹⁻⁵

With the development of the gate control theory,^{6,7} a widely accepted theory of pain transmission and modulation, theoretic support for the relation between culture and pain has been provided. It is postulated that within the central nervous system, central control mechanisms activate selective brain processes that influence the neurophysiologic basis of pain perception and tolerance. Meanings and attitudes associated

with pain and the amount of attention directed toward pain are examples of factors that influence central control mechanisms and, subsequently, the psychophysiologic and behavioral responses to pain.⁸

While cultural background has been recognized as a major determinant in how individuals perceive and react to pain situations, existing research concerned with the relation between pain and culture has been limited in scope and thus has provided little empirical evidence to support the theoretic relationship between culture and pain.

The majority of studies in relation to pain and culture have been directed toward identifying differences in pain responses among ethnic and cultural groups. These efforts have yielded conflicting findings in the identification of differences between cultural groups in such pain responses as pain behavior,⁹ pain tolerance,¹⁰ pain awareness,¹¹ postoperative analgesic use,¹² and words used to describe pain and pain intensity.¹³ In addition, there has been no conclusive delineation of specific pain responses for any cultural group. These conflicting findings can be partially explained by the myriad methodologic challenges involved in the identification, measurement, and interpretation of culture-specific pain responses. Examples of such challenges including accounting for intraethnic variability (gender, socioeconomic status, acculturation level) and the lack of available pain instruments that have accrued reliable and valid psychometrics with different culture group members. Perhaps a more fundamental issue in relation to research conducted in the area of culture and pain has been the failure to establish links between pain behaviors and corresponding cultural tenets. Thus, while responses to pain may be

universal, meanings and attitudes associated with pain, which determine if and when these behaviors are expressed, may be different across cultural groups. Knowledge of cultural meanings of pain is an important component in the design of culturally competent and relevant nursing care for people experiencing pain.

The purpose of this article is to describe the use of ethnohistory as a method to discover cultural meanings associated with pain. Specifically, this approach was employed to discover meanings associated with pain in Mesoamerica prior to and near the time of the Spanish Conquest. Such a study can be viewed as a critical step in the discovery of the epistemics of pain within contemporary Mesoamerican cultures, specifically those of Mexican-Americans.

PAIN AND MEXICAN-AMERICANS

While several studies were found that dealt with Hispanic or Latin-American subjects,^{10,13-18} only a few specifically addressed the phenomenon of pain within Mexican-American culture. The major focus of existing studies was identification of differences in pain behaviors between cultural groups. In one such study, responses to clinical and induced pain among equal numbers ($n=20$) of black, Mexican-American and white chronic spinal pain patients were examined.¹⁰ Using multiple measures to assess pain (eg, ischemic pain tests as a correlate of back pain, patients' reports of pain intensity, physical therapists' ratings of pain behavior), analysis of variance revealed no significant differences in pain tolerance between cultural groups. However, Mexican-American women, followed by Mexican-American men, endured ischemic pain for a

longer time and indicated a higher intensity of ischemic pain relative to the back pain they were experiencing. In addition, while Mexican-Americans' self-report of pain was higher than that of the other cultural groups, therapists' behavioral rating did not indicate that pain responses were exaggerated. Thus, while Mexican-Americans may have had more pain, their report of pain was less and endurance to pain greater. The researchers indicated that differences in pain responses between groups may have been related to the different measures of pain used.

A similar finding was identified by Adams^{16,17} in studies that examined psychometric properties of an observational and self-report assessment instrument with Hispanic and white children. The Children's Procedure Behavioral Checklist (CPBC) and the Children's Procedural Interview (CPI), which incorporates the use of a facial visual analogue scale, was used to assess pain associated with invasive procedures. Hispanic (n=37 Mexican-American; n=6 other Hispanic) and white (n=37) pediatric oncology patients, ages 3 to 15, constituted the sample for this study. In general, the reliability of the assessment measures was lower for Hispanic children ($\alpha=.54-.81$) than for white children ($\alpha=.79-.86$). The one exception was that the reliability for the faces scale component of the CPI was slightly higher for Hispanic children ($\alpha=.87$) than for white children ($\alpha=.84$). In addition, Hispanic children, while reporting similar levels of pain and anxiety as their white counterparts, evidenced an earlier control of behavior. Based on these findings, Adams¹⁷ suggested that self-report measures such as the facial visual analogue scale be used as an adjunct to assessment for younger chil-

dren and those from other cultural groups such as Hispanics, as they are not language dependent. The significance of this study is that attention is drawn to issues related to the influence of culture on the expression of pain, and the subsequent assessment and measurement of pain in children.

In another study,¹⁸ health beliefs of Mexican-Americans (n=30) related to symptoms of chest pain were compared with those of a white lay group (n=30) and those of a predominantly white nurse practitioner group (n=30). A 43-item questionnaire was developed from a literature review of relevant Mexican-American writings and from unstructured interviews with Mexican-Americans. A one-way analysis of variance and post hoc analysis indicated that Mexican-American respondents demonstrated a stronger belief in folk etiologies (eg, punishment from God, fright experience [*susto*], bad luck) and treatments (use of hot liquids) for the symptoms of chest pain than did the lay control or nurse practitioner group. Further, results from the open-ended questions indicated that Mexican-American respondents were less likely to identify medical reasons as a cause of chest pain (46%) than the white lay group (91%). No relationship was found between belief in folk etiologies and sociodemographic variables such as age, gender, education, experience of chest pain, or whether respondents were born in the United States or Mexico. The significance of this study is the beginning identification of Mexican-American cultural beliefs that are associated with the cause and treatment of pain.

While studies that relate to pain and Mexican-Americans are few, they represent important contributions in identifying specific pain beliefs and behaviors of Mexican-

Americans associated with pain experiences. Further, beginning links have been established between pain behaviors and nursing practice and research issues, such as the methods used in the assessment and measurement of pain for this population. A needed component to this beginning work is the development of cultural matrices from which the broader meaning of pain behaviors can be understood. Such cultural matrices are critical to enable nurses to provide culturally sensitive, competent, and relevant care in relation to pain.

RELEVANCE TO ETHNOHISTORY

Ethnohistory is a research method used widely in anthropology. This method combines the use of diachronic, or historic, sources or strategies with synchronic, or theoretical, abstractions derived from existing data in an effort to provide a more complete understanding of a cultural or social phenomenon.¹⁹ The ethnohistoric method has been identified within the field of transcultural nursing as a relevant and valid approach in establishing comparative differences between and within specific cultures related to specific domains of inquiry and in the discovery of epistemics of nursing phenomena.²⁰ While existing ethnohistoric studies in nursing are rare, this method is often applied as a component of transcultural nursing studies. The appropriateness of this method in discovering the epistemics of cultural meanings of pain among Mexican-Americans, a contemporary Mesoamerican culture, is of particular relevance, given that the link between past and present Mesoamerican cultures has been firmly established.

Geographically, Mesoamerica comprises the territory known today as central Mexico, Guatemala, Honduras, and El Salvador. Perhaps more important than geography, the people from this area share a rich cultural and historical tradition.^{21,22} Although there are regional and temporal differences among cultural groups, such as the classic Maya and the Aztec, significant elements of Mesoamerica cosmovision have been found to transcend space and time, extending to the present indigenous groups of this region.²³ The world view of this geographic region is communicated in past and present aspects of arts, social structure, rituals, and beliefs related to health and illness. Elements of this shared cosmovision are framed within the context of the reciprocal and circular relationship among humans, nature, and the supernatural and include the central concepts of duty, destiny or fate, duality, and equilibrium.

The transcendent nature of one component of this shared cosmovision, the concept of duality, as expressed in the relation between life and death, will be presented. A predominant belief in ancient Mesoamerica was that the creation of life was intertwined with death. The concept of life and death as facets of a shared reality is manifested in masks, dating from as far back as 200 to 700 AD, that represent one half of the face as having flesh and the other side as being fleshless.²⁴ Life emanating from death is a major theme depicted on the sarcophagus cover of a Mayan ruler, dated 684 AD.²² Mayan and Aztec myths indicate that since the sacrifice of the gods created life, continued existence in time and space could only be sustained by the subsequent sacrifice of human life.²⁵⁻²⁸ This notion was translated in daily life to the belief that the very existence

of all things desired was ultimately dependent upon death.²⁷

There is evidence of this pre-Columbian concept of death in present-day Mexican popular culture in art, songs, literature, and satirical cartoon and writings.²⁹ The attention and respect demonstrated toward death in daily rituals, while at the same time accompanied by an indifference and even humor, illustrate the dual nature of death.³⁰ This duality is clearly manifested in practices and rituals associated with the annual Day of the Dead celebration, a day that honors the dead but humorously taunts the living with their eventual fate.

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This shared and persistent cosmovision has given relevance to ethnohistory as a valid approach to understanding health related beliefs and practices of Mesoamerica, such as those associated with pain. In addition, the use of ethnohistory as a means to understand health related beliefs and practices of Mesoamerica has been well established by several anthropologists.^{26,27,31-34} A major premise of these works maintains that the Spanish conquest of Mesoamerica created a syncretic mixture of cultures (Spanish and Indian), of religions (Catholicism and native), and in medicine that persists today. Peasant cultures, which typify the dominant culture of ancient and contemporary Mesoamerica, are conservative by nature and re-

tain beliefs and practices for long periods of time.

One example of this syncretic mix is evident in certain beliefs related to pregnancy. Before the Conquest, the Aztecs believed that pregnant women should not go out at night in order to avoid seeing a lunar eclipse. Eclipses were thought to be caused by bites taken out of the moon. If, therefore, a pregnant woman were to see an eclipse, it was believed her baby would, by sympathetic magic, be born with a harelip, that is, with a bite taken out of its mouth. To ward off this event, a pregnant woman would place a knife made of obsidian next to her abdomen before going out at night.^{35(Books 7,8)} Hundreds of years later, Madsen³² found this belief practically unchanged, with the exception that the knife used was made of metal because obsidian was no longer available. This belief can also be found in Mexican-American communities across the United States in all its details with the substitution of a metal key for the knife. The extraordinary fidelity of transmission of this belief is due in part to the fact that it concerns a crucial event in a woman's life. Thus, this belief can be transmitted orally from mother to daughter, wholly outside any system of formal education.

Other folk-illness beliefs ranging from the "hot-cold" model of disease to certain ailments that are prevalent in Mexican-American communities have been traced to ancient Mesoamerica. *Caida de mollera* ("fallen fontanelle") is one such common folk-illness associated with children. It is referred to as mechanical "sinking" of the fontanelle and soft palate of a small child and is associated with the occurrence of a fall or a sudden withdrawal of the nipple while feeding. Symptoms associated with

this folk-illness include restlessness, crying, and a refusal to eat. Treatment is directed toward facilitating a mechanical restoration of the palate, which will subsequently result in a restoration of the fontanelle. This folk-illness can be traced back to a pre-Columbian belief that maintains that humans had several "souls." Under certain conditions, a soul could leave the body, which would result in illness. Children were viewed as particularly susceptible to loss of souls as a result of their open fontanelles. While there is still a persistent belief in the illness and symptoms of *caida de mollera*, the cause has been changed from the ancient belief of soul loss to a contemporary belief in relation to a mechanical dysfunction.³⁶

Given the prevalence of health- and illness-related beliefs existing in contemporary regions of Mesoamerica that can be systematically traced to ancient times, the purpose of this study was to discover meanings associated with pain in this region in the period prior to and near the time of the Spanish Conquest. The discovery of health beliefs, such as those associated with pain, within an ethnohistoric context serves as a benchmark in untangling and understanding contemporary Mesoamerican medical practices and beliefs.³⁴ In this manner, current cultural Mexican-American beliefs and practices related to pain can be identified and understood.

PROCEDURE

Primary and secondary sources concerned with Aztec and Mayan civilizations were selected for study. These included eyewitness accounts of events,³⁷ myths,²⁵ previous ethnographies,³⁵ archaeology, art and art history,²² ethnohistory and linguistics,²⁷ and

ethnomedicine.^{26,33} Sources had been previously examined by the second author for existing bias,²⁶ and were selected for this study on the basis of availability, accuracy, and credibility. Phases of thematic and pattern analysis²⁰ were utilized in examining data, from which six themes related to beliefs associated with pain emerged.

Once this study was completed, a series of confirmatory analyses was performed to ensure the credibility of results. Evidence used to derive patterns was reviewed to ensure that meaning in context of data had been preserved. Themes that emerged in relation to pain were examined within the context of existing writings and of theories related to health beliefs and practices of ancient Mesoamerica. Finally, further exploration of completed ethnomedicinal studies and additional linguistic analysis was conducted. The results of the confirmatory analysis provided support for the themes related to pain derived from this ethnohistorical study.

RESULTS

The six themes that emerged in this study are presented with supporting evidence.

Pain was an accepted, anticipated, and necessary part of human life.

A primary function of the Aztec and Mayan ideology, which exalted stoicism and duty, was to reconcile people to their fate by attributing suffering to the immutable will of gods and to the nature of life on earth.²⁶ This ideology is reflected in the creation myths of this region. For example, the *Popol Vuh*, the legend of the Quiche Maya, presents the following concept of humans as

perfect beings created by gods through sacrifice.

They were simply made and modeled . . . We have named the men by themselves . . . By sacrifice alone, by genius alone they were made, they were modeled . . .^{25(p165)}

As further told in this creation myth, man was made to ensure the survival of the gods.

For we must make a provider and nurturer. How else can we be invoked and remembered on the face of the earth? So now, let's try to make a giver of praise, giver of respect, provider, nurturer.^{25(p79)}

Not only did people attribute their existence to the gods, but so too did their purpose on earth carry with it a sense of duty and obligation to the very gods that created them.

The prevalent themes of duty and obligation are also present in Aztec myths of creation. Aztec origin myths reinforced the belief that man "owed" the gods, as their divine sacrifices had created the world and man himself.²⁶ Man needed to continue the practice of sacrifice in order to ensure the survival of mankind, the gods, and the universe.

Another means of communicating this ideology was use of Aztec recitations known as *huehuetlatolli*. These were admonitions and instructions concerned with the proper and ideal forms of behavior and thought, viewed as a vehicle to communicate societal ideals advocated by the ruling class.²⁶

The concept of pain as duty or obligation is evident in the following excerpts from several of the *huehuetlatolli* recorded by Sahagun in the *Florentine Codex, Box 6, Rhetoric and Moral Philosophy*.³⁵ An address to a newborn:

Thou wert sent here on earth, a place of weariness, a place of pain, a place of pain and affliction . . . a place where they . . . emerge; where they arise; there where pain, where affliction are endured, suffered, glorified. Thou camest . . . that thy bones, thy body should endure pain, suffer affliction. And thou wilt work like a slave . . . For this reason thou wert sent.^{35(p184)}

A discourse of father to son:

May thou live on earth . . . Certainly it is a dangerous place, a revolting place, and a painful and afflicting place.^{35(p105)}

A discourse of rulers to daughters upon reaching the age of discretion:

. . . there is no rejoicing, there is no contentment; there is torment, there is pain . . . torment, pain dominate. Difficult is the world, a place where one is caused to weep, a place where one is caused pain . . . The earth is not a good place. It is merely said it is a place of joy with fatigue, of joy with pain on earth . . .^{35(p93)}

The recurring themes in these discourses, in addition to creation myths, provide support for the derived theme that pain and suffering were viewed in Mesoamerica as characteristic of the fate of man here on earth.

Humans had an obligation to the gods, and to the community of man, to endure pain in relation to the performance of duties.

The belief in the reciprocal relationship between man and gods reinforced the concept of duty. Earth and its creatures were created through sacrificial acts of the gods. Humans, in turn, were required to strengthen and nourish the gods. The stability of the cosmos, the continued existence of the gods, and the fate of man on earth were dependent on the ability of humans to feed hungry

gods.²⁷ Sustenance for the gods took the form of blood from sacrificial victims and from bloodletting of the tongue, earlobes, and genitals performed during self-sacrifice.²² The fate of man was viewed as being inextricably linked to the gods and in this manner was used by the ruling class to justify class differentiation, human hardship, war, self-sacrifice, and human sacrifice.

Within this concept of duty and in the means through which it was expressed, the experience of pain can be viewed. For example, bloodletting, a common form of self-sacrifice in Mesoamerica, was a means by which humans expressed their duty to the gods. Such rituals as performed by the Mayas were described by Friar Diego de Landa:³⁷

At times they sacrificed their own blood . . . they perforated their cheeks or the lower lip; again they made cuts in parts of the body, or pierced the tongue crossways and passed stalks through, causing extreme pain . . . ^{37(p48)}

The object of bloodletting and flesh piercing was to cause physical pain and to obtain the vital fluid to offer the gods. The willingness and capacity to experience and endure pain can be viewed as an expression of the duty humans had toward the gods and the community of man. Life was seen as an ephemeral moment and earth was seen as a place where suffering, metaphorically expressed as fatigue or physical pain, was the norm.²⁶

The ability to endure pain and suffering stoically was valued.

Not only was pain anticipated and accepted in relation to the performance of ritual self-sacrifice, but the ability to bear pain stoically was admired as both coura-

geous and pious.²² Diego de Landa³⁷ in his description of a self-sacrificing ritual illustrates how this theme was enacted in Mayan culture:

At other times they practiced a . . . sacrifice whereby . . . they gathered . . . and each made a pierced hole, through the member across from side to side, and then passed through as great as a quantity of cord as they could stand . . . The one able to endure the most was considered most valiant, and their sons of tender age began to accustom themselves to this suffering.

The type and amount of pain a person experienced was in part predetermined by the gods.

The concept of fate being determined by the gods and the relationship between humans and gods are evident in beliefs about the human body, health, illness, and pain. As an example, within the Maya area, certain days were considered to be good or bad for health. Day 9, for example, was associated with chronic illness, pain, and fighting, while day 6 was a good day for health.³³

In addition, the body was believed to contain multiple souls, divine forces, or animistic centers. Each of these souls, centers, or forces had a special function and location within the body. One such animistic force, known as *tonalli*, will be discussed in relation to the concept of fate or destiny. While all forces could be viewed within this context, the *tonalli* will be used as the illustrative model.

The *tonalli* intimately tied humans to cosmic agents, thus making fluid the boundaries between humans, nature, and the supernatural. Animistic centers such as the *tonalli* provided the mechanism for interaction, or exchange, to occur among these forces. The *tonalli*, believed to be located at

the top of the head, was the force that determined a person's temperament, affected future conduct, and through fate, established the link between the person and divine will.²⁷ A person's fate depended on the allotment of *tonalli*, which in turn was predetermined by the gods.

The noun *tonalli* has definitions that in context mean "day sign, the destiny of a person according to the day of his birth."^{27(p204)} When a baby was born, soothsayers were called upon to read the day signs of the calendar in order to identify the factors, good and evil, that would affect the baby's fate. According to accounts of Sahagun:

... they looked at their books; there they saw the sort of merit of the baby, perhaps good, or perhaps not, according as was the mandate of the day sign on which he was born."^{35(Book 6,p197)}

As a person's *tonalli* was introduced by means of ritual bathing, his or her fate could be altered by assigning or postponing the bathing so that it corresponded with a good or more favorable day sign.^{27(p205)} This ritual bathing, however, could not be postponed for an indefinite period of time. Thus, if a bad fate was determined to be an inevitable occurrence for a child on earth, the parents would offer the child as a sacrifice in order to secure a good destiny in the next world.²⁷ It was believed that individuals who were offered as sacrifices to the gods would travel to the Overworld (heaven).

Pain and suffering were viewed as a consequence of immoral behavior.

Pain was also viewed as a bad fate, a consequence of doing evil, as shown in the following discourse in the Florentine Codex addressed to a person who had confessed sexual sins.

Punishments for earthly misconduct were expressed in the suffering of the family, and evident in accepted occurrences of hunger, thirst, fatigue, and disease.

... and thou shalt suffer, thou shalt endure misery ... Thy heart, thy body, will suffer torment, pain. Torment, pain, fatigue, will reach to thy nose.^{35(Book 6,p31)}

Punishments for earthly misconduct were expressed in the suffering of the family, and evident in accepted occurrences of hunger, thirst, fatigue, and disease.²⁷ The performance of duty and penance would secure a good fate, while indulging in excesses, for example, would assuredly bring about a bad fate. According to Friar Diego de Landa³⁷ "the Yucatanans naturally knew when they had done wrong; they believed disease, torments would result from evil doing and sin."

Specific methods of pain alleviation were directed toward maintaining balance within the person and the surrounding environment.

A significant organizing principle of Mesoamerican cosmovision is illustrated in beliefs about the order, organization, and structure of the universe. This was the recurring theme in the understanding of the dual opposition of contrary elements (eg, life and death). The universe was thought to be divided by a horizontal plane that separated the Great Mother and related elements, which include cold, below, underworld, darkness, weakness, night, water, death, wind, and sharp pain, from the Great Father and related elements such as hot, above,

heaven, drought, light, strength, large fire, life, flower, fire, irritation, stream of blood—life, perfume.²⁷ Balance and equilibrium were seen as critical elements in maintaining a universal order.

The structure of the human body was seen as parallel to the structure and organization of the universe, that is, there was a dual nature of the body and in the composition of specific elements contained within the body. In addition, there was a link between the universe and humans, in that behavior of persons affected the equilibrium and stability of the cosmos and, conversely, forces in the cosmos could affect behavior and human functions.³⁴ The maintenance of equilibrium directed human behavior in relation to one's health and well-being within the context of self and the universe.

Within this context, the experience of pain could be viewed as a type of imbalance, disharmony, or disequilibrium between opposing forces. It was believed that equilibrium could be lost and restored by a number of factors internal and external to humans.²⁷ It followed that pain experienced by man could also be caused by internal and external forces being in a state of imbalance. For example, an imbalance of hot and cold within the body and in the environment could be viewed as a cause of pain. It is important to recognize that the circular and reciprocal relationship among humans, nature, and the supernatural, together with the central concepts of fate or destiny and duty, magnifies the importance of the concept of balance and equilibrium within Mesoamerican culture.

Additional support for this theme is provided by examining Mesoamerican medicinal cures associated with pain. An underlying

premise in examining medicinal cures is that a clear connection can be discovered, by examining remedies for specific illness conditions, between those remedies and beliefs concerning the etiology of the conditions. For example, following the principle that hot substances will balance cold ones, tobacco or *axin* (an unguent derived from an insect), which in the native classification were considered to be "hot," were remedies recommended for the pain due to cold in cracked feet.²⁶ Other remedies for pain include sulphur baths, which are still being used today in highland Guatemala for ailments that include cramps, body pain, and rheumatism.^{33(p58)} Steam baths were thought to improve damage to the nerves believed to have been caused by the intrusion of cold supernatural forces.²⁷ Bleeding was used as treatment for wound scars and healing, but in addition, it was also a remedy used for headaches. As headaches were believed to be caused by an excess of blood in the head, removing the blood from the area was a logical remedy.²⁶

A number of herbal remedies have been listed by various sources as having been prescribed for painful conditions such as spider bites, kidney or urinary pain, pain in the side, muscle cramp, liver pain, toothache, headache, rheumatism, and joint pain. Such remedies include the use of maguey sap, tobacco, coconut, wormwood, and atropine.^{26,33} While an analysis of how these remedies were believed to be useful for pain relief within the context of ancient Mesoamerica is not within the scope of this paper, further work in this area would be useful in helping to identify and delineate Mesoamerican beliefs related to the etiology of pain.

DISCUSSION

This ethnohistoric study is a critical step in the discovery of the epistemics of pain within contemporary Mesoamerican cultures. These six themes represent beginning efforts to synthesize Mesoamerican beliefs as they relate to experiences of pain. Of particular relevance for nursing practice and research is to determine whether and how these beliefs are expressed in contemporary Mesoamerican cultures.

Specific Mexican-American culture responses to pain that have been identified in previous studies clearly fall within the themes emerging from this study. For example, health beliefs and care associated with symptoms of chest pain, as identified by Kosko & Flaskerud,¹⁸ are consistent with themes identified as relating to causation of pain in this study. Viewing pain as a consequence of immoral behavior is similar to the belief that chest pain was inflicted as a type of punishment from god. Pain seen as a type of imbalance is illustrated in attribution of chest pain to a fright experience, which causes a loss of the soul, as well as in treatment of chest pain, a "cold" symptom, with hot liquids. The finding of pain caused by bad luck is similar to the theme of pain caused by bad fate. The value of enduring

pain stoically is reflected in pain behavior of both children^{16,17} and adults.¹⁰

The recurrence of similar themes related to beliefs about pain in different studies and in different periods lends beginning credence to the transferability of findings of this ethnohistoric study to contemporary times and Mesoamerican cultures. Future confirmation through research needs to be conducted, specifically directed toward the identification of Mexican-American cultural meanings, attitudes, and beliefs associated with pain. It would then be possible to identify existing remnants of ancient Mesoamerican beliefs associated with pain and to determine how these ancient beliefs have evolved and are expressed in contemporary cultures.

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This study represents an important contribution in directing nursing research and practice with Mexican-American populations. The use of ethnohistory as a method to discover the epistemics of phenomena of interest to nursing has been demonstrated. Most important, findings from this study represent beginning efforts to provide the context from which pain as experienced by Mexican-Americans can be understood and from which culturally relevant and competent nursing care can be designed.

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