A RELATIONSHIP BETWEEN ETHNICITY AND PAIN

by

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ABSTRACT

The relationship between the cultural values of the Mexican-American and his perception of pain after leg trauma, as compared to the Anglo male was the focus of this study.

Ten Mexican-American males and ten Anglo males that had been admitted to the hospital with leg trauma were used as subjects. The General Systems Theory was utilized to correlate the economic, social, psychological, and physiological variables involved in an individual's perception of pain.

Measures for this study were a Cultural Value Scale, The Institute for Personality and Ability Testing Anxiety Scale, Hollingshead's Occupational and Educational Scale, Petrie's Method for Assessment of Pain, and the number of analgesics administered to the subjects within seventy-two hours after leg trauma.

The findings of the study supported the hypothesis, that Mexican-American males with leg trauma, as compared with Anglo males with leg trauma would score higher on a cultural value scale and would: (1) have less physiological and psychological pain as measured by Petrie's Assessment of Pain Scale, (2) have less physiological pain as measured by the administration of fewer narcotics (Morphine and Demerol),
(3) have less psychological anxiety as measured by the Institute for Personality and Ability Testing (IPAT) Anxiety Scale, and (4) have lower socioeconomic pressure as measured by placement in Classes IV and V in Hollingshead's Occupation and Educational Scale: **Two Factor Index of Social Position**.

Further studies are recommended in the area of various ethnic groups, as they apply to cultural values. Additional studies patterned after this research which would embrace a larger, more heterogeneous sample, utilize another hospital setting, and encompass several comparable surgical procedures would be of importance to nursing as a science to improve individualized patient care.
CHAPTER I

INTRODUCTION

Changes are predicted for the Mexican-American way of life, although thus far, the changes are very slow to manifest themselves. The younger generation of Mexican-Americans appears closer to the Anglo culture than their parents, but many of their values continue to complement their heritage.

Several sociological, psychological, economic, and physiological factors prevent a systemic linkage between the Mexican-American and the dominant Anglo society. Despite the fact that changes are inevitable, Kluckhohn and Strodtbeck (1961:257) stated: "Changes are, at the present time, superficial ones made necessary by the demands of adaption, and they have scarcely touched the deeper convictions of the people."

Mexican-Americans who are hospitalized after an injury find themselves confined in a rigid, complex social system. This system does not allow cultural integration; therefore, health practices, family solidarity, respect patterns, and religious values are not understood or interpreted.
The hospitalized patient may be rendered incapable of influencing his environment since the typical hospital leaves little or no room for individual decision making, exercise of initiative, or assumption of responsibility. The hospital personnel may, in this respect, be unintentionally undermining the social competence of each individual by reducing to a minimum any opportunity the patient might have to exercise and practice socially learned skills and habits (Weissman and Kutner, 1967).

In caring for patients in the Southwest, it should be borne in mind that a definite cross-cultural situation does exist, and the culture in which one is reared predisposes one to certain views and values. The Mexican-American who enters a hospital is, in a manner of speaking, entering another culture. He has preconceptions about what is good and what is rational, sensible, and acceptable; and yet, these preconceptions may result in a great misunderstanding and interfere with an objective evaluation of the responses of culturally different people.

Basic changes in family roles in some cultures may occur with extended hospitalization. In the Mexican-American family, as well as the Anglo family, the male has a different but unique position, and is irreplaceable. The strength of the family unit, extended family relationships, social status, financial status, and achievement of goals, rewards, and satisfactions seem to be the factors that
induce pronounced, measurable, and, occasionally, irreversible changes in an individual's attitudes and behavior.

Statement of the Problem

Is there a relationship between the Mexican-American and the Anglo male's perception of pain after leg trauma?

Significance of the Problem

The problem is significant to the care a person receives, in that the cultural components of an individual are an important contributing factor. According to Blaylock (1968) evidence seems to be mounting that pain has meanings which are individual and personal, and can be triggered by psychological forces. When the individual responds to a painful experience in a manner dictated by his socio-cultural milieu, the operation which produces the response takes place within himself.

Purpose of the Study

The purpose of this study is to inquire into the life patterns of Mexican-Americans and Anglos to discover those cultural patterns which might differ in their influence on the individual male's perception of pain after leg trauma. The healing process in a patient during hospitalization is enhanced, according to present nursing practice, if the patient is treated as a whole rather than
treated solely for the physiological problem that resulted in the hospitalization.

An understanding of the relationship of the physiological problem and the patient's response according to his cultural patterns may add to nursing knowledge and indicate the need for continued collaboration between the social sciences and nursing for better understanding of total nursing care and the prevention of unnecessary discomfort. Leininger (1967:27) stated that, "Nursing theory and practice must take into account man's cultural and social behaviors so that the nurse's mode of thinking and interacting with individuals will reflect new and penetrating views about behavior in health and illness."

**Hypotheses**

Mexican-American males with leg trauma, as compared with Anglo males with leg trauma would score higher on a cultural value scale and would:

1. have less physiological pain as measured by Petrie's Method for Physiological and Psychological Assessment of Pain;

2. have less physiological pain as measured by the administration of fewer narcotics (Morphine and Demerol);
3. have less psychological anxiety as measured by the Institute for Personality and Ability Testing (IPAT) Anxiety Scale;

4. have lower socioeconomic pressure as measured by placement in Classes IV and V of Hollingshead's Occupational and Educational Scale: Two Factor Index of Social Position.

Limitations
This study is restricted by the following factors:

1. The size of the sample used.

2. The researcher as an observer has no control over the patient care given, nor any control over extraneous variables that may influence the care given.

3. The sample was limited to male patients in the twenty to fifty years of age group.

4. The researcher's inability to observe all behavior of the subjects and the personnel caring for them.

5. The chasm between the Mexican-American and health professional regarding knowledge and acceptance of cultural patterns has not been controlled.

Theoretical Framework
The theoretical framework upon which this study is based comes from theorists who have used the concept of
cultural patterns as an explanation for individuals' perceptions of pain. This study was an attempt to determine if any relationship exists between the cultural patterns of the Mexican-American and his perception of pain after leg trauma.

Petrie (1967) studied various reactions toward pain according to the perceptual modulation of the individual. In his study he utilized the physics of circuit theory whereby the reactance of a system, although characteristic of itself, can be altered by outside forces such as heredity and environment, or his verbal and non-verbal reaction to pain. The range of the scale was between the augmenter and reducer. The augmenter increased what was perceived and the reducer tended to subjectively decrease what was perceived. The moderate was placed in the middle, and neither reduced nor augmented what was perceived. Petrie's findings on the reducer end of the scale, although not directed toward any certain ethnic group, paralleled the Mexican-American cultural patterns. The desire for physical activity such as strenuous occupational work, rather than the desire to work alone; the necessity of sharing experiences with many friends rather than just a few; the lack of drive toward attaining the highest possible education; or spending innumerable hours reading and dealing with symbols rather than realities were all indicators of a
reducer, according the Petrie's theory. Other comparisons will be found in the review of the literature.

Bruegel (1971) conducted a study of eighty-five patients, nine of whom were Mexican-American, to determine the relationship of anxiety to pain and found differences in the perception of pain according to several sociocultural factors in individuals. The relationship between anxiety and religion showed a definite significance. Individuals with religion preferences were much less anxious than persons with no religion. Other findings were that married persons seemed to experience less pain, and individuals from the lower socioeconomic stratum received the lowest number of analgesic medications.

Zborowski (1952) compared the cultural components in response to pain in Anglos, Jews, and Italians, and although his findings of the Italian's attitude toward pain are similar to that of the Mexican-American, there are several factors which do not coincide. Zborowski found the Italian individual to be a very emotional patient who expressed his feelings quite verbally, and whose anxiety level was very high. The results of his study regarding the Italian's attitudes toward pain are sometimes referred to as the "Latin" attitude. This researcher believes that the Mexican-American's behavior is very different from that of the Italian.
The physicist, economist, psychological, and social scientists are parallel in their cognitive principles, although split into innumerable disciplines, continually generating new subdisciplines (von Bertalanffy, 1968). Thus, according to this researcher, nursing becomes a general science that must integrate these principles, models, and laws into a "wholeness" or else continue to fragment the care given individuals.

In this study, cultural patterns will be the intervening variable used to denote the stimulus or linkage with subjects' response to pain. Indicators of pain utilized will be drawn from natural, social, behavioral, and economic sciences. The contribution of each of the sciences, whatever their component elements, will contribute to the dynamic interaction or energy necessary to combat an unsteady state. The forces of each science will be interpreted as a body of knowledge integrated to provide an essential part of the quest for an understanding of reality--total patient care.

It is through investigation of each of the indicated sciences and integration into a nursing theory that the researcher will attempt to answer the questions of the hypotheses.
Definitions

The following definitions of terms were used for the purpose of this study:

Pain

This term is used to designate hurt or strong discomfort in some part of the body which may be relieved by administration of a narcotic. In this study the intensity of the pain was measured by the number of hypodermics, either Demerol 0.75 or 100 milligrams, or Morphine 10 milligrams administered for relief of the discomfort.

Cultural Values or Patterns

These terms refer to things and events which have their existence in space and time, thus being interorganismal, intraorganismal, and extraorganismal (White, 1966).

1. The term interorganismal refers to within process of social interaction among human beings such as: Spanish language spoken to communicate warm, interpersonal relationship within a minority community.

2. The term intraorganismal refers to human organisms, concepts, beliefs, emotions, and attitudes. For the purpose of this study intraorganismal refers to religious attitudes and family patterns.

3. The term extraorganismal refers to within material objects lying outside human organisms but within
the patterns of social interaction among them. A measure of extraorganismal in this study may be found by examining the medicines and treatments prescribed by curanderos, and by the assessment of the individual's participation in sports.

Ethnicity

This is the designation which relates to groups of races of mankind differentiated on the basis of common customs and values.
CHAPTER II

REVIEW OF LITERATURE

The literature was reviewed in relation to the sciences that contribute to the understanding of the cultural process and the influence thereby reflected in the values and patterns of the Mexican-American and his individual perception of pain. In order to correlate this information for sound scientific application to nursing practice, the General Systems theory is applied.

Literature on Physiological Factors Influencing Cultural Relationship to Pain

Many individuals have observed that the same trauma affects people in various ways. Petrie (1967), a physiologist, was one of these observers who based his research on the neurological or physiological variations of pain. He was not convinced that differences based on cultural demands are inherent in the individual, nor are they the principle contributing factor. Petrie's research centered around the differences between people in terms of their modulation of sensory experience. He identified three kinds of persons—the reducer, the augmenter, and the moderate, and each one differs from the other in the ways of processing their experience of the sensory environment.
A few of Petrie's (1967:98) speculations on his findings were:

The extreme differences in sensibility between the augmenter and the reducer lead one to expect many other differences between them. For example, since activity arouses sensation, one could predict greater activity in the reducer. He might be likely to prefer having many friends, whereas fewer, perhaps deeper friendships would be more characteristic of the augmenter. The reducer might wish for an occupation bringing him into contact with many other people, while the augmenter would wish to work alone.

Ryan and Kavacic (1966) and Ryan and Foster (1967) compared the tolerance of pain according to the augmenter-reductive theory. They categorized three groups of male students: those who participated in contact sports such as football and wrestling; those who participated in an individual sport, for example, golf or tennis; those students who did not participate in any sport, and did not wish to do so. After careful analysis of data of the sixty subjects, the degree of perceptual reduction was found to be greatest among the twenty "contact" athletic students and least among the twenty non-athletic students. The degree of reduction of the twenty "non-contact" athletic students lay between these two extremes.

Man, in his cultural environment, needs the support and encouragement of others in order that powerful environmental forces will not be as threatening as individual human pressures. Hardy, Wolf, and Goodell (1952:262) phrased it thus:
The culture in which man finds himself becomes the conditioning influence in the formation of the individual reaction patterns to pain. Although until now these relationships have not been thoroughly explored, it is generally realized that a knowledge of group attitudes toward pain is extremely important to an understanding of the individual's reaction.

In summary, it would appear that, lacking the components of individual perception and cultural conditioning, the physiological experience of pain would not vary between different ethnic groups. Beadle (1970:7) substantiated this theory by saying,

While man has the power to direct his biological inheritance, it is his cultural inheritance and direction that demand the more immediate attention. In our biological inheritance, which is so largely determined by our genes, we are not in principle very different from other living forms.

**Literature on the Psychological Factors Which Influence an Individual's Perception of Pain**

Bonner et al. (1951) studied surgical intervention that alters personality and decreases an individual's perception of pain. The most common surgical intervention of this type is the lobotomy. Persons having had a lobotomy demonstrate inappropriate emotional response, longer latency in responding, and apathy. The above researchers observed, in a series of thirty-eight patients, approximately forty percent of those who had unilateral lobotomies obtained some relief and eighty-five percent with bilateral
operations were relieved temporarily, depending upon the intensity of pain.

The effects of emotional fatigue were observed, and the indications were that there was little noticeable effect on the pain threshold level or distribution of measurement (Chapman and Jones, 1944).

An individual's behavior is a response to, or a function of his culture. As his culture varies, so will his behavior vary. In the Mexican-American culture, there is a built-in mechanism to combat loneliness, which was described by Wallace (1961) as one of the major faults of an organization. This is the family cohesion and closeness which, in itself, is a natural psychological gratification.

The Mexican-Americans have definite attitudes inherent in their cultural patterns which influence their perception of pain. Fatalism is often attributed to the Mexican-American, as noted by Madsen (1964:46).

Most Latins believe that fate is a mechanism of God's will. Although the fate of the individual is decided before birth, God has the power to alter it. . . . The paramount nature of the Divine is reflected in the saying, "Haga uno lo que laga, todo es lo que Dios quiere." (Do what one will, everything is as God wishes.)

Another concept which has been described is that illness or injury, such as a fractured leg, may have been caused by God as a punishment for immoral behavior.
Anxiety of the Mexican-American is described by Schulman (1963:233), who took into consideration the Mexican-American culture:

The Mexican-American does not seem to understand the true nature of health and illness; whenever illness strikes they fail to see the causal factors. Therefore, unless the cause was readily evident, sickness was thought to be a complete matter of destiny. During protracted illness, little could be done to help the person recover. What needed to be done by all concerned was to resign themselves to the problem rather than to become anxious over it.

Psychologists continue to explore the field of culture as it relates to personality, and one of the areas being well-documented is that of the self-concept. According to Clark and Mendelson (1969:90),

Self-esteem is based on the performance of behaviors or the embodiment of characteristics that have been learned by the individual through the medium of cultural values to be "good" and "desirable." ... In other words, the fabric of self-esteem is inevitably supplied by the cultural matrix in which the individual learns to define himself.

Literature on the Economic Factors Which Influence the Mexican-American's Reaction to Pain

Most ethnic groups have improved their economic status by responding to the American ideology of advancement; however, the Mexican-American group has been an exception to this statement because of their values. The Mexican-American males have always considered honor, respect, family obligation, and manliness as their most
important values. These are not values which are conducive to mobility, and are considered obstacles in the initial stages of social advancement, and yet praiseworthy on other grounds (Burma, 1970).

The importance of achievement and economic success within one's culture has been well stated by Saunders (1954:125),

Anglos are doers... One of the best ways for an Anglo to identify another is by his work. ... Associated with the emphasis on work is the Anglo's preoccupation with success... which may include an increased income and an upward social and occupational mobility. Success refers to objective recognition by others that one has attained commonly esteemed goals.

The Mexican-American's attitude toward work is far removed from that of the Anglo's. To the Mexican-American, work is not highly valued and is looked upon as necessary, but of no particular interest in itself. As Bullock (1970:149) observed,

Mexican-American traditional values have been strongly influenced by a folk or ritual culture in which organized and continuous striving for future monetary gains play little part. Satisfaction of present wishes and needs tend to take precedence over long-range planning which requires immediate sacrifices.

Attitudes and values regarding achievement in an occupational setting reflect the degree of economic crises that illness or injury have upon a family. Adaption of a family unit to an injury which effects their economic
status can be determined by their patterns of behavior. Waller and Hill (1951:459) have suggested that,

At least three variables help to determine whether a given event becomes a crisis for any given family: (1) the hardship of the situation or event itself; (2) the resources of the family: its role structure, flexibility, and previous history with crisis; and (3) the definition the family makes of the event; that is, whether family members treat the event as if it were or as if it were not a threat to their status, goals, and objectives.

In interpreting the cultural differences which are attributed to different socioeconomic backgrounds, there appears to be a different attitudinal pattern toward the acceptance of an injury or illness.

Literature Which Reflects Sociological Factors Influencing Pain Reaction in Ethnic Groups

The Mexican-American still maintains many of his traditional kinship systems, that is, family solidarity, devotion to Catholicism, structural separateness, health practices, and use of a "foreign" language for communication purposes, all of which contribute to his distinctive socio-cultural system.

Health practices of the Mexican-American, depending upon his personal experiences and the degree of his participation in the Anglo culture, stem from four separate sources which are: folklore of Spain, the health practices of many American-Indians, Anglo folk medicine, and scientific medical sources, all of which constitute the basis
for much of their knowledge, beliefs, and practices with respect to illness. In cities, as well as in rural areas, the medical practices of Mexican-Americans continue to be a mixture of elements of both cultures. Saunders (1954:168) has commented on these differences as follows:

The most important difference between Mexican-American folk medicine and Anglo scientific medicine that influences the choice of one or the other are these: Anglo scientific medicine involves largely impersonal relations, procedures unfamiliar to laymen, a passive role for family members, hospital care, considerable control by professional healers, and high costs; by contrast the folk-medicine of the Mexican-Americans is largely a matter of personal relations, familiar procedures, active family participation, home care, a large degree of control of the situation by the patient or his family, and relatively low costs. Given these differences, it is easy to understand why a considerable motivation would be necessary for a Mexican-American to have any strong preference for Anglo medicine over that which is more psychologically rewarding, less punishing and also less expensive!

Despite these factors, Anglo medicine is rapidly being accepted by the Mexican-American, especially for the treatment of injuries. However, the Mexican-American has included in his acceptance many of the patterns of folk-medicine, for example active family participation and the personal relationships.

According to Spence (1968:35), language and education in the United States have produced a puzzling effect upon Mexican-Americans in that the Spanish language remains the language of personal gratification and identity, while
the English language in schools is the language of achievement and material rewards.

Fishman (1966:304) characterized this dilemma of language among the Mexican-Americans in these words, "In Spanish, the person exists, functions, and is recognized as a complete whole by others, whereas in English he is perceived in terms of his discrete roles."

For the Mexican-American, English is a second language and when he is confronted with this language in the American school system, he forms a negative pattern which explains his general failure in education. The language barrier and its effect on the Mexican-American is best described by Nava (1970:126),

The net effect of English language instruction is often destructive of the self-image and very ego of many Spanish-speaking children. Their individual needs have been submerged or suppressed in favor of a uniform curriculum established to make everyone speak and act like a typical American. These efforts to suppress certain ethnic backgrounds result in social maladjustment and under-achievement.

Education is an important factor in fostering certain reactive patterns, and Zborowski (1966:268) found that, "The educational background of the patient played an important role in his attitude with regard to the symptomatic meaning of a pain sensation. The more educated a person is, the more health conscious and more aware of pain as a possible symptom of a dangerous disease."
Characteristics in a person categorized as an augmenter are by no means associated with the Mexican-American, as one of the characteristics ascribed to an augmenter is that of willingness to cultivate language talents. Petrie (1967:101) described this aspect of an augmenter's personality thus:

School grades are, to a certain extent, dependent on one's willingness to cultivate the talents associated with the language. In such cultivation, a person who is willing to spend a great deal of time sitting still while reading or listening and who, moreover, is content to deal with symbols rather than realities has advantages.

Family solidarity is the basis for the existing patterns of the Mexican-American residential separation of other ethnic groups. Spence (1968:48) explained it in the following words, "this separation is one of choice, one of pleasure, and one of dependence on many individuals on the large, extended family and kinship system of the Mexican-American society." It is within this satisfying and secure structure of behavior patterns that the Mexican-American generally continues to reside, vigorously exercising those existing socio-cultural patterns found to be most enjoyable in the past and attenuating or avoiding those behavior patterns unrewarding, unpredictable, or strange (Homan, 1961:186).

When injury to the head of the house occurs in a middle-class Anglo family, the wife must adapt to several new roles, that of bread-winner and authority figure, and
she seeks moral support in these assumed roles. In contrast, illness or injury in the Mexican-American household is not viewed as a crisis.

**Literature Related to the General Systems Theory**

The General Systems Theory stands for the integration of certain applicable knowledge from several special sciences which can be useful when objectives needing higher generality of energy expressed into a flow of processes are considered (von Bertalanffy, 1968).

The basic assumptions accepted in nursing compel one to study many scientific factors that are isolated and fragmented. The General Systems Theory is an approach which provides the comprehensive concept needed to coordinate many elements into a mutual interaction, and, in this thesis, counteract the entropic state caused by a traumatic leg injury. There are several factors implicating the use of the General Systems Theory to coordinate the sciences under investigation in this thesis. Selective readings make it evident that the Mexican-American has a very clearly defined environment in which he must exist, that environment being bounded by complex cultural patterns which include economics, education, language, religion, family patterns, and the state of being a member of a minority community. These patterns reflect personal
satisfying rewards, and yet are unacceptable to the Anglo as the behavioral schemata.

Parsons (1959:37) substantiated the use of this theory in an applied science by referring to the "middle range" and "codification of levels." He stated that codification of levels was only possible if the theoretical resources of a whole series of neighboring scientific fields were integrated. It was his conviction that no matter how firmly grounded the scientist in his discipline, the scientist must inevitably apply the General Systems Theory as an interdisciplinary theory in the field of human action.

The review of the literature reinforces the premise that the cultural components of a Mexican-American individual are important factors that might influence his perception of pain.
CHAPTER III

RESEARCH DESIGN

The design of this study was to compare the life patterns of the Mexican-American with those of the Anglo and to discover cultural variables which might differ in their influence on a male's perception of pain after leg trauma. The relationship of the physiological problem and the patient's response according to his cultural patterns is nursing knowledge and demonstrates a need for continued collaboration between the social sciences and nursing as a general science to achieve "wholeness" which is imperative in assessing the needs of any individual.

The focus of this comparative study was on the identification and analysis of the relationship between ethnicity and pain. The study was designed to correlate the economic, social, psychological, and physiological variables involved in an individual's perception of pain. Through the utilization of the General Systems Theory, the integration of cognitive principles into a "wholeness" provides the necessary basis for total patient care. The questions to be answered in this study were: Do the Mexican-American males with leg trauma, as compared to the Anglo male with leg trauma:

23
1. have less physiological pain as measured by Petrie's Method for Assessment of Impact on Pain or Sensory Lack?

2. have less physiological pain as measured by the administration of fewer narcotics (Morphine or Demerol)?

3. have less psychological anxiety as measured by the Institute for Personality and Ability Testing (IPAT) Anxiety Scale?

4. have lower socioeconomic pressures as measured by placement in Hollingshead's Two Factor Index of Social Position?

Design of the Study

This comparative investigation was focused on the cultural patterns, which are subdisciplines of several sciences, and the individual's perception of pain. The patients in this study included ten Mexican-American males (Group A) and ten Anglo males (Group B) who were admitted to the hospital with leg trauma who were willing to participate. The sample size was limited to twenty patients with the following delimitations:

1. The patient was an Anglo or Mexican-American male between the ages of twenty-five and fifty years.

2. He was able to communicate in English.
Selection of Hospital

The hospital selected for this study was a three hundred and five-bed, non-profit, community hospital located in the southwestern part of the country. In this study the patients represented a cross-section of the population in this area, and were admitted to the fifty-bed orthopedic unit for hospital care. Although the majority of patients were self-supporting and covered by medical insurance, many injured patients would not be assured of hospital protection were it not for the fact that industrial compensation (Workmen's Compensation) is required of employers in the State of Arizona.

Collection of Data

The researcher obtained information from the patient's clinical record regarding age, address, marital status, religion, actual diagnosis, and occupation. Information regarding education was gathered from the nursing history on the chart and confirmed by the patient. Health practices relevant to the patient's culture were also confirmed by the patient. These data and information on cultural patterns were placed on the Data Collection Form (see Appendix A). Participant observation was recorded while caring for the patient within seventy-two hours after admission (see Appendix B). Participant observation was
used to gather the data needed for Petrie's Method for Assessment of Impact on Pain or Sensory Lack (see Appendix B).

Informal interviews with the patients were used to obtain additional information. This included the Institute for Personality and Ability Testing--(IPAT) Anxiety Scale, which was recorded by the researcher. The nurse researcher interviewed each patient to establish a level of rapport which was conducive to trust and cooperation needed for this study. Answers to the IPAT Anxiety Scale were recorded according to the patient's response, thus eliminating the possibility of misinterpretation by the patient (see Appendix C).

Social class membership was determined by Hollingshead's Two Factor Index of Social Position (see Appendix D). Observation, collaboration with other nurses caring for the patients, as well as review of the patient's record were utilized to categorize behavioral reactions on Petrie's Method for Assessment of Impact on Pain or Sensory Lack.

**Techniques for Categorizing Data**

The information regarding education and occupation was obtained to establish social class membership, and for this classification Hollingshead's (1957) Two Factor Index of Social Position was used. This index was developed to
meet the need for an objective, easily applicable procedure to estimate the positions individuals occupy in the status structure of our society. An individual's occupation reflects the skill and power he possessed as he performed the many maintenance functions in society. Education based on formal education reflected not only knowledge, but cultural patterns as well (see Appendix D).

Petrie's Method for Assessment of Impact on Pain or Sensory Lack was employed to distinguish the subjects as being either on the augmenter's or reducer's end of the scale (see Appendix B).

The IPAT Anxiety Scale was employed to differentiate the importance of attitudes and behaviors in relation to cultural traits as an influence on the individual's perception of pain.

The IPAT Anxiety Scale was developed as a means of obtaining anxiety information rapidly, and is a brief, clinically-valid questionnaire. The IPAT Anxiety Scale is easily administered and gives an accurate appraisal of free anxiety level, facilitating all kinds of research or mass-screening operations where very little assessment time can be spent with each subject (see Appendix C). Scoring was done by using a simple scoring key. The single range score between 0-80 has been obtained from each respondent. Construct or concept validity is estimated at +.85 to +.90
for the total IPAT Anxiety Scale (Cattell and Scheier, 1963:7).

A structured interview questionnaire and Cultural Rating Scale, devised by the nurse researcher, was used to score the subjects' cultural values. Priorities according to cultural values or patterns were categorized. Inter-organismal values, such as language and membership in a minority community, were scored and assigned a weight factor of five.

This was followed by intraorganismal values which consisted of religious beliefs, fatalism and attendance at church, and the score plus a weight factor of four was used. Another category of intraorganismal values was family patterns which included number of persons in household, number of close friends, and visits with relatives in a month's period. The score plus a weight factor of three was used to obtain the desired score and rank.

The last category scaled was that of extraorganismal cultural values, such as health practices and participation in active sports which are outside human organisms, but within patterns of social interaction. The score, plus a weight factor of two, was employed.

All the cultural value scores were then calculated to obtain the total derived score or raw score for each subject. These were computed as the individual's measurement for his cultural values (see Appendix A). The possible
range of scores was from 37 to 111. The scores were divided into five ranks. The higher the subject's score, the greater was his adherence to the Mexican-American cultural values (see Appendix A).

The number of pain medications administered within seventy-two hours after leg injury was used as a physiological measurement of pain for each individual. In this study the narcotics given hypodermically were Demerol, dosage, 75 or 100 milligrams, and Morphine, dosage, 10 milligrams.
CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The analysis of the data of this study which compared ten Mexican-American males with ten Anglo males and related differences in their cultural patterns to their perception of pain after leg trauma are presented in this chapter. Correlations and analysis of variance were the statistical methods used.

The characteristics of the sample are presented, followed by findings related to the four hypotheses.

Characteristics of Sample

Ten Mexican-American male patients and ten Anglo male patients hospitalized with leg trauma were compared. The age range of the subjects, reported in Table 1, was from 25 to 50, with a mean age of 35.8 years for the Mexican-American males and 36.2 years for the Anglo males. All patients were treated by private orthopedic surgeons in a non-profit community hospital located in the southwestern part of the country.

Findings Related to the First Hypothesis

The first hypothesis of this study stated that Mexican-American males with leg trauma as compared with
Table 1. Age Characteristics of Ten Mexican-American and Ten Anglo Males Admitted to the Hospital with Leg Trauma

<table>
<thead>
<tr>
<th></th>
<th>Number of Subjects</th>
<th>Range of Age</th>
<th>Mean Age of Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>M. A. Males</td>
<td>10</td>
<td>26-50</td>
<td>35.8</td>
</tr>
<tr>
<td>Anglo Males</td>
<td>10</td>
<td>25-50</td>
<td>36.2</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td></td>
<td>36.0</td>
</tr>
</tbody>
</table>

Anglo males with leg trauma would score higher on a cultural value scale and would have less physiological pain as measured by Petrie's Method for Assessment of Impact on Pain. Patient information concerning cultural values was categorized and ranked. The Interorganismal cultural values were weighed and scored and accorded hierarchial precedence. The ten Mexican-American males were described as Group A and Anglo males as Group B.

The raw scores on the cultural value scale are presented in Table 2. The range of scores for the Mexican-American males was from 77 to 104 with a group mean score of 89.7. In contrast, the range of cultural value scores for the Anglo males was from 41 to 70 with a group mean score of 54.5.

An analysis of variance among cultural value rank was computed and reported in Table 3. The F-Ratio of
Table 2. Comparative Raw Scores of Data Collected to Differentiate Variables of Ten Mexican-American and Ten Anglo Males Admitted to the Hospital with Leg Trauma

<table>
<thead>
<tr>
<th>Group</th>
<th>Cultural Value</th>
<th>Institute for Personality and Ability Testing</th>
<th>Hollingshead's Educational and Occupational Status</th>
<th>Petrie's Method for Assessment of Pain</th>
<th>Number of Pain Medications 72 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Score</td>
<td>Anxiety Scale Score</td>
<td>Score</td>
<td>Social Class</td>
<td>Score</td>
</tr>
<tr>
<td>A. Mexican-American</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>77</td>
<td>21</td>
<td>59</td>
<td>IV</td>
<td>42</td>
</tr>
<tr>
<td>2</td>
<td>102</td>
<td>20</td>
<td>77</td>
<td>V</td>
<td>24</td>
</tr>
<tr>
<td>3</td>
<td>89</td>
<td>33</td>
<td>66</td>
<td>V</td>
<td>42</td>
</tr>
<tr>
<td>4</td>
<td>91</td>
<td>30</td>
<td>62</td>
<td>V</td>
<td>28</td>
</tr>
<tr>
<td>5</td>
<td>90</td>
<td>22</td>
<td>77</td>
<td>V</td>
<td>32</td>
</tr>
<tr>
<td>6</td>
<td>77</td>
<td>16</td>
<td>55</td>
<td>IV</td>
<td>28</td>
</tr>
<tr>
<td>7</td>
<td>104</td>
<td>36</td>
<td>62</td>
<td>V</td>
<td>28</td>
</tr>
<tr>
<td>8</td>
<td>84</td>
<td>33</td>
<td>66</td>
<td>V</td>
<td>24</td>
</tr>
<tr>
<td>9</td>
<td>88</td>
<td>28</td>
<td>51</td>
<td>IV</td>
<td>30</td>
</tr>
<tr>
<td>10</td>
<td>95</td>
<td>27</td>
<td>73</td>
<td>IV</td>
<td>44</td>
</tr>
<tr>
<td>Mean</td>
<td>89.7</td>
<td>26.6</td>
<td>64.8</td>
<td>V</td>
<td>32.2</td>
</tr>
<tr>
<td>B. Anglos</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>41</td>
<td>35</td>
<td>22</td>
<td>II</td>
<td>26</td>
</tr>
<tr>
<td>12</td>
<td>41</td>
<td>43</td>
<td>26</td>
<td>II</td>
<td>80</td>
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<td>53</td>
<td>23</td>
<td>11</td>
<td>I</td>
<td>44</td>
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<td>14</td>
<td>70</td>
<td>28</td>
<td>47</td>
<td>IV</td>
<td>68</td>
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<td>58</td>
<td>24</td>
<td>51</td>
<td>IV</td>
<td>42</td>
</tr>
<tr>
<td>16</td>
<td>64</td>
<td>49</td>
<td>32</td>
<td>III</td>
<td>72</td>
</tr>
<tr>
<td>17</td>
<td>51</td>
<td>28</td>
<td>38</td>
<td>III</td>
<td>38</td>
</tr>
</tbody>
</table>
Table 2.--Continued

<table>
<thead>
<tr>
<th>Group</th>
<th>Cultural Value Score</th>
<th>Institute for Personality and Ability Testing Anxiety Scale Score</th>
<th>Hollingshead’s Educational and Occupational Status Score</th>
<th>Social Class</th>
<th>Petrie’s Method for Assessment of Pain Score</th>
<th>Number of Pain Medications 72 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>64</td>
<td>23</td>
<td>40</td>
<td>III</td>
<td>46</td>
<td>9</td>
</tr>
<tr>
<td>19</td>
<td>49</td>
<td>44</td>
<td>51</td>
<td>IV</td>
<td>40</td>
<td>12</td>
</tr>
<tr>
<td>20</td>
<td>54</td>
<td>15</td>
<td>11</td>
<td>I</td>
<td>66</td>
<td>16</td>
</tr>
<tr>
<td>Mean</td>
<td>54.5</td>
<td>31.2</td>
<td>32.9</td>
<td>III</td>
<td>52.2</td>
<td>13.3</td>
</tr>
</tbody>
</table>
Table 3. Analysis of Variance of Cultural Value Rank Between Ten Mexican-American and Ten Anglo Males Admitted to the Hospital with Leg Trauma

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cultural Value Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>Mean Square</td>
</tr>
<tr>
<td>Total</td>
<td>409.5684</td>
</tr>
<tr>
<td>Groups</td>
<td>6195.2000</td>
</tr>
<tr>
<td>Error (G)</td>
<td>88.1444</td>
</tr>
</tbody>
</table>

70.285 was statistically significant beyond the .00001 level. This finding related to cultural values, the independent variable, and was not repeated when describing the finding of other hypotheses in this chapter.

The raw scores for the Mexican-American and Anglo males on Petrie's Method for Assessment of Pain were tabulated in Table 2. The mean score for the Mexican-American males on Petrie's Method was 32.2 compared with a mean score of 52.2 for the Anglo males and is also shown in Table 2. An analysis of variance using the mean scores on the Petrie scale was computed as shown in Table 4. An F-Ratio of 10.666 was obtained. This value was statistically significant at the .0045 level. The hypothesis that Mexican-American males with leg trauma have higher pain levels as measured by the Petrie Method for Assessment was thus supported.
Table 4. Analysis of Variance of Pain Between Ten Mexican-American and Ten Anglo Males Admitted to the Hospital with Leg Trauma, as Measured by Petrie's Method for Physiological and Psychological Assessment of Pain

<table>
<thead>
<tr>
<th>Variable</th>
<th>Petrie's Method for Physiological and Psychological Assessment of Pain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>Mean Square</td>
</tr>
<tr>
<td>Total</td>
<td>282.9053</td>
</tr>
<tr>
<td>Groups</td>
<td>2000.0000</td>
</tr>
<tr>
<td>Error (G)</td>
<td>187.5111</td>
</tr>
</tbody>
</table>

Findings Related to the Second Hypothesis

The second hypothesis of this study was that Mexican-American males with leg trauma, as compared with Anglo males with leg trauma, would score higher on a cultural value scale and would have less physiological pain as measured by the administration of fewer narcotics (Morphine and Demerol) within the first 72 hours after hospitalization.

The range in the number of pain medications required during the first 72 hours after leg trauma was from 4 to 10 for the Mexican-American males with a mean of 7.0 compared with a range from 4 to 24 and a mean of 13.3 for the Anglo males. These statistics are shown in Table 2. An analysis of variance was computed and gave an F-Ratio
of 10.756 which had a probability of .0043 as shown in Table 5. The second hypothesis that hospitalized Mexican-American males with leg trauma would require the administration of fewer narcotics than would Anglo males with leg injury was supported.

Table 5. Analysis of Variance of Number of Pain Medications Received Seventy-two Hours After Leg Trauma by Ten Mexican-American and Ten Anglo Males Admitted to the Hospital with Leg Trauma

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of Pain Medications Received Seventy-two Hours After Leg Trauma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>Mean Square</td>
</tr>
<tr>
<td>Total</td>
<td>27.9237</td>
</tr>
<tr>
<td>Groups</td>
<td>198.4500</td>
</tr>
<tr>
<td>Error (G)</td>
<td>18.4500</td>
</tr>
</tbody>
</table>

Findings Related to the Third Hypothesis

The third hypothesis stated that Mexican-American males with leg trauma as compared with Anglo males with leg trauma would score higher on a cultural value scale and would have less psychological anxiety as measured by the IPAT Anxiety Scale. The range of scores for the Mexican-American males was from 16 to 36 with a mean of 26.6 as compared with a range for the Anglo males from 15 to 49.
with a mean of 31.2, as shown in Table 2. An analysis of variance yielded an F-Ratio of 1.273 which had a probability of .2736 as shown in Table 6. Although the differences in the IPAT Anxiety Scale were slightly positive, the differences were not statistically significant and the hypothesis was not supported.

Table 6. Analysis of Variance of Results of Scores of the Institute for Personality and Ability Testing, Anxiety Scale, Between Ten Mexican-American and Ten Anglo Males Admitted to the Hospital with Leg Trauma

<table>
<thead>
<tr>
<th>Variable</th>
<th>Source</th>
<th>Mean Square</th>
<th>D.F.</th>
<th>F-Ratio</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>84.3052</td>
<td>19</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Groups</td>
<td>105.8000</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Error (G)</td>
<td>83.1111</td>
<td>18</td>
<td>1.273</td>
<td>.2736</td>
</tr>
</tbody>
</table>

Findings Related to the Fourth Hypothesis

The fourth hypothesis tested was that Mexican-American males with leg trauma as compared with Anglo males with leg trauma score higher on a cultural value scale and have lower socioeconomic pressures as measured by placement in Classes IV and V of Hollingshead's Two Factor Index of Social Position. According to the raw scores shown in
Table 2, the range of scores for Mexican-American males was 51 to 77, with a mean of 64.8. All of these scores were in Hollingshead's Social Classes IV and V. On the other hand, the Anglo male scores ranged from 11 to 51 with a mean of 32.9 and with no Anglo males within Class V and only three within Class IV. When analysis of variance was computed (Table 7), the F-Ratio value was 33.177 which was statistically significant at the .0001 level. The hypothesis was supported that the Mexican-American males have lower socioeconomic pressures.

Table 7. Analysis of Variance of Results of Scores of Hollingshead's Occupational and Educational Scale Between Ten Mexican-American and Ten Anglo Males Admitted to the Hospital with Leg Trauma

<table>
<thead>
<tr>
<th>Variable</th>
<th>Hollingshead's Occupational and Educational Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>Mean Square</td>
</tr>
<tr>
<td>Total</td>
<td>413.0816</td>
</tr>
<tr>
<td>Groups</td>
<td>5088.0500</td>
</tr>
<tr>
<td>Error (G)</td>
<td>153.3611</td>
</tr>
</tbody>
</table>
Comparison of Sample with the National Average on the IPAT Scale

Table 8 compares the conversion of raw IPAT total scores for each group into the sten system and percentiles. Standardized norm tables for the IPAT Anxiety Scale were used as a basis for this conversion (Cattell and Scheier, 1963). A mean sten of 5.7 and a mean percentile of 53.7 was computed for the Mexican-American males compared to a mean sten of 6.1 and a mean percentile of 61.4 for the Anglo males.

Sten scores for the Mexican-American males in all cases indicated an average degree of anxiety. There were no scores below a sten score of 4 or above a sten score of 7. Stens of 4, 5, 6, and 7 are in the "normal range" and need no particular further inquiry if the individual (or group) has no other indications of psychological difficulty.

The Anglo males' sten scores ranged from 4 to 9. Seventy percent indicated an average degree of anxiety. Twenty percent indicated a sten of 8 and 10 percent a sten of 9. When the sten level reaches 8 or 9, a serious anxiety level is revealed which is almost certain to have adverse effects on an individual's social and emotional adjustment (Cattell and Scheier, 1963:13).
Table 8. Conversion of Institute for Personality and Ability Testing Anxiety Scale Raw Scores to Sten and Percentiles

<table>
<thead>
<tr>
<th>Subject</th>
<th>Raw Score</th>
<th>Sten</th>
<th>Percentile</th>
<th>Raw Score</th>
<th>Sten</th>
<th>Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>21</td>
<td>5</td>
<td>40</td>
<td>35</td>
<td>7</td>
<td>77</td>
</tr>
<tr>
<td>2</td>
<td>20</td>
<td>4</td>
<td>23</td>
<td>43</td>
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</tr>
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<td>23</td>
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</tr>
<tr>
<td>4</td>
<td>30</td>
<td>6</td>
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<td>9</td>
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<td>10</td>
<td>27</td>
<td>6</td>
<td>60</td>
<td>15</td>
<td>4</td>
<td>23</td>
</tr>
<tr>
<td>Mean</td>
<td>26.6</td>
<td>5.7</td>
<td>53.7</td>
<td>31.2</td>
<td>6.3</td>
<td>61.4</td>
</tr>
</tbody>
</table>
Findings Related to Social Class and Pain and Medication

Social class differences were also analyzed to learn if there was a relationship between class and frequency of pain, as measured by the number of medications given. Seventy percent of the Mexican-American patients were in Hollingshead's Social Class V and the remaining thirty percent were in Social Class IV. Of the Anglo males, twenty percent were in Social Class I, twenty percent in Social Class II, and thirty percent were in Social Classes III and IV. There were no Anglos in Social Class V. These findings are summarized in Table 9.

Table 9. Relationship Between Frequency of Pain Medications and Social Class of Ten Mexican-American and Ten Anglo Males Admitted to the Hospital for Leg Trauma

<table>
<thead>
<tr>
<th>Social Class</th>
<th>Number of Subjects</th>
<th>Number of Medications in 72 Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M.A.</td>
<td>Anglo</td>
</tr>
<tr>
<td>I</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>II</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>III</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>IV</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>V</td>
<td>7</td>
<td>0</td>
</tr>
</tbody>
</table>
These findings indicate that social class as well as cultural values do have an effect upon the frequency of pain medications received after leg trauma.

Correlations Among Variables in Study

In order to learn to what extent the measures used in this study were related, correlation matrices were utilized. The intercorrelations, based on the raw scores of ten Mexican-American males with leg injuries, are shown in Table 10. There was a moderate correlation, which Guilford (1956:145) considers to represent a substantial relationship, between the Cultural Value Score and the IPAT Scores (.4086), and Hollingshead's Social and Economic Status Score (.5078). The highest correlation in Table 10 was between Petrie's Method for Assessment of Pain and the actual number of narcotic pain medications given to each subject within seventy-two hours after leg injury. The correlation of .8571 shows a marked relationship and is a measure of the validity of the two instruments.

The intercorrelation, based on the Anglo males' raw scores, presented in Table 11, showed a slight and almost negligible relationship with the exception of Petrie's Method for Assessment of Pain and the number of pain medications administered. The latter high correlation of .8171 indicated a marked relationship similar to that among the Mexican-American males.
Table 10. Intercorrelation Analysis of Five Variables Among the Ten Mexican-American Male Subjects Admitted to the Hospital with Leg Trauma

<table>
<thead>
<tr>
<th></th>
<th>Group A--Ten Mexican-American Males</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cultural Value Rank</td>
</tr>
<tr>
<td></td>
<td>Institute for Personality and Ability Testing Anxiety Scale</td>
</tr>
<tr>
<td></td>
<td>Hollingshead's Social and Economic Status</td>
</tr>
<tr>
<td></td>
<td>Petrie's Method for Assessment of Pain</td>
</tr>
<tr>
<td></td>
<td>Number of Medications in 72 hours</td>
</tr>
<tr>
<td>Means</td>
<td>89.7000</td>
</tr>
<tr>
<td>Sigmas</td>
<td>8.6261</td>
</tr>
<tr>
<td>Scores</td>
<td></td>
</tr>
<tr>
<td>1. Cultural Value</td>
<td>1.0000</td>
</tr>
<tr>
<td></td>
<td>.4086</td>
</tr>
<tr>
<td></td>
<td>.5078</td>
</tr>
<tr>
<td></td>
<td>-.2105</td>
</tr>
<tr>
<td></td>
<td>-.0719</td>
</tr>
<tr>
<td>2. Institute for Personality &amp; Ability Testing Anxiety Scale</td>
<td>1.0000</td>
</tr>
<tr>
<td></td>
<td>.4086</td>
</tr>
<tr>
<td></td>
<td>1.0000</td>
</tr>
<tr>
<td></td>
<td>-.0700</td>
</tr>
<tr>
<td></td>
<td>.0062</td>
</tr>
<tr>
<td></td>
<td>.1485</td>
</tr>
<tr>
<td>3. Hollingshead's Social and Economic Status</td>
<td>.5078</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>4. Petrie's Method for Assessment of Pain</td>
<td>.2832</td>
</tr>
<tr>
<td>5. Number of Medications in 72 Hours</td>
<td>-.0719</td>
</tr>
</tbody>
</table>
Table 11. Intercorrelation Analysis of Five Variables Among the Ten Anglo Male Subjects Admitted to the Hospital with Leg Trauma

<table>
<thead>
<tr>
<th>Group B--Ten Anglo Males</th>
<th>Cultural Value Rank</th>
<th>Institute for Personality and Ability Testing Anxiety Scale</th>
<th>Hollingshead's Social and Economic Status</th>
<th>Petrie's Method for Assessment of Pain</th>
<th>Number of Medications in 72 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Means</strong></td>
<td>54.5000</td>
<td>31.2000</td>
<td>32.9000</td>
<td>52.2000</td>
<td>13.3000</td>
</tr>
<tr>
<td><strong>Sigmas</strong></td>
<td>9.1788</td>
<td>10.5052</td>
<td>14.3419</td>
<td>16.8867</td>
<td>5.5326</td>
</tr>
<tr>
<td><strong>Scores</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Cultural Value</td>
<td>1.0000</td>
<td>-.2416</td>
<td>.3855</td>
<td>.2832</td>
<td>.2806</td>
</tr>
<tr>
<td>2. Institute for Personality &amp; Ability Testing Anxiety Scale</td>
<td>-.2416</td>
<td>1.0000</td>
<td>.2504</td>
<td>.2185</td>
<td>.3414</td>
</tr>
<tr>
<td>3. Hollingshead's Social and Economic Status</td>
<td>.3855</td>
<td>.2504</td>
<td>1.0000</td>
<td>-.1428</td>
<td>-.2819</td>
</tr>
</tbody>
</table>
### Table 11.—Continued

<table>
<thead>
<tr>
<th>Cultural Value Rank</th>
<th>Institute for Personality and Ability Testing Anxiety Scale</th>
<th>Hollingshead's Social and Economic Status</th>
<th>Petrie's Method for Assessment of Pain</th>
<th>Number of Medications in 72 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Petrie's Method for Assessment of Pain</td>
<td>.2832</td>
<td>.2185</td>
<td>-.1428</td>
<td>1.0000</td>
</tr>
<tr>
<td>5. Number of Medications in 72 Hours</td>
<td>.2806</td>
<td>.3414</td>
<td>-.2819</td>
<td>.8171</td>
</tr>
</tbody>
</table>
The correlation analysis of variables of the combined groups is reported in Table 12. A high correlation of .8304 demonstrates a marked relationship between Hollingshead's Social and Economic Status and the Cultural Value Scales. This was an expected relationship.

The Cultural Value Scores and both Petrie's Method for Assessment of Pain and the number of pain medications administered in 72 hours showed moderate negative correlations of -.4967 and -.4805, respectively. Since both were measures of pain, similar levels were expected.

The lowest correlations were with the IPAT Anxiety Scale. A low correlation of .3887 occurred between the IPAT Scores and the number of pain medications administered to all subjects.

Hollingshead's Social and Economic Status Scale showed a negative moderate correlation of -.5391 or a substantial relationship (Guilford, 1956:145) with Petrie's Method for Assessment of Pain. The same moderate negative relationship (-.6006) existed with the number of pain medications administered.

In the combined group, a high correlation of .8843 was present between Petrie's Method for Assessment of Pain and the number of pain medications administered within 72 hours after leg injury.
Table 12. Correlation Analysis of Variables Between Ten Mexican-American and Ten Anglo Males Admitted to the Hospital with Leg Trauma

<table>
<thead>
<tr>
<th></th>
<th>Group A and Group B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cultural Value Rank</td>
</tr>
<tr>
<td>Means</td>
<td>72.1000</td>
</tr>
<tr>
<td>Sigmas</td>
<td>19.7254</td>
</tr>
<tr>
<td>Scores</td>
<td></td>
</tr>
<tr>
<td>1. Cultural Value</td>
<td>1.0000</td>
</tr>
<tr>
<td>2. Institute for Person-</td>
<td></td>
</tr>
<tr>
<td>ality &amp; Ability Testing</td>
<td></td>
</tr>
<tr>
<td>Anxiety Scale</td>
<td>-.2328</td>
</tr>
<tr>
<td>3. Hollingshead's Social</td>
<td></td>
</tr>
<tr>
<td>and Economic Status</td>
<td>.8304</td>
</tr>
</tbody>
</table>

48
Table 12.—Continued

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Institute for Personality and Ability Testing</th>
<th>Hollingshead's Social and Economic Status</th>
<th>Petrie's Method for Assessment of Pain</th>
<th>Number of Medications in 72 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural Value Rank</td>
<td>4. Petrie's Method for Assessment of Pain</td>
<td>-.4967</td>
<td>-.5391</td>
<td>1.0000</td>
<td>.8843</td>
</tr>
<tr>
<td>Anxiety Scale</td>
<td>5. Number of Medications in 72 Hours</td>
<td>.2898</td>
<td>.3887</td>
<td>.8843</td>
<td>1.0000</td>
</tr>
</tbody>
</table>
In the following chapter, the findings of this study will be discussed in relation to the conceptual framework described in Chapter I.
CHAPTER V

DISCUSSION OF FINDINGS

This chapter discusses the findings pertinent to both the theoretical framework and the results of this study.

Findings Related to Theoretical Framework and First Hypothesis

The first hypothesis of this study, Mexican-American males with leg trauma, as compared with Anglo males with leg trauma, would score higher on a cultural value scale and would have less physiological and psychological assessment of pain, has been supported by the findings. The interpretation of the Cultural Value Scale pertaining to the Mexican-American subjects tended to parallel the reducer end of the scale in Petrie's Augmenter-Reducer Theory, as described in Chapter I. The Mexican-American male subjectively decreased what was perceived, indicated a desire to compete in contact sports, actually worked in a strenuous occupation, described a need for many friends and lacked the drive toward attaining further education.

Other findings generated from this study, pertaining to the cultural patterns of the Mexican-American,
support the fact that the Mexican-Americans are still unable to compete equally with the Anglos in educational and occupational endeavors. This supports Burma's (1970) findings that the number of Mexican-American students in institutions of higher education is proportionately less than Blacks or any other minority group.

The Mexican-Americans are still concentrated in the lowest paying occupations, and their existence remains one of fatalism and anomie. The family emerged as the strongest area of life activity and one that seems to provide the greatest satisfaction. Nine of the Mexican-American subjects were of the Catholic religion and the remaining subject professed to the faith of the Seventh Day Adventist. They all claimed to attend church at least once a month. These findings support the literature that the Mexican-American still maintains his devotion to Catholicism as a traditional socio-cultural value.

The area of health does not seem to be of particular concern to the Mexican-American subjects. They resigned themselves to their injury and did not appear to become anxious over their extended hospitalization, although some concern was expressed regarding their families' economic needs. An interesting finding was their belief in the Anglo physician and complete rejection of the curanderas. This could be interpreted as a process of acculturation, or that the cultural heritage of the
Mexican-American is becoming more imbued with the Anglo-American traits.

Although data support evidence that a transition to a blended Anglo-Mexican culture may be taking place within the Mexican people, many valuable Mexican traits such as the strong, extended family, the tendency toward mutual aid, the Spanish language and such personality characteristics as placing more emphasis upon interpersonal relationships continue to survive.

The Spanish language must be considered the Mexican-American's strongest cultural asset. The Spanish language was favored over the English language by 80 percent of the Mexican-American subjects. One hundred percent of them spoke either Spanish or a dialect of the Spanish language. All of the subjects were bilingual, speaking both Spanish and English. If the bilingual tradition in the Mexican-American society continues, and certain Anglo values become acceptable, a biculture may emerge which would, in all probability, be more stable, and would prove more attractive to both Anglos and Mexican-Americans.

From the information gathered, it appears that the Mexican-American culture is continuing as a functioning societal unit with considerable ability to determine and project its own future course of development.
Findings Related to Theoretical Framework and Second Hypothesis

The second hypothesis which stated that the Mexican-American males with leg trauma, as compared with Anglo males with leg trauma, would score higher on a cultural value scale and would have less physiological pain as measured by the administration of fewer narcotics (Morphine and Demerol) has also been supported. The range in the number of pain medications required during the first 72 hours after leg trauma was from 4 to 10 for Mexican-Americans, with a mean of 7.0, compared with a range from 4 to 24 and a mean of 13.3 for the Anglo males.

Findings Related to Theoretical Framework and Third Hypothesis

The third hypothesis which stated that the Mexican-American males with leg trauma, as compared with Anglo males with leg trauma, would score higher on a cultural value scale and would have less psychological anxiety as measured by the Institute for Personality and Ability Testing--(IPAT) Anxiety Scale was not supported, as the differences in the IPAT Anxiety Scale, while slightly positive, were not statistically significant.

Bruegel (1971), in her study of pain, as described in Chapter I, found a difference in the relationship between religion and anxiety. Although a definite relationship between anxiety and religion can not be supported
in this thesis, there is a definite correlation between religion and pain. A finding which does support Bruegel's study was that individuals from the lower socioeconomic strata received the lowest number of pain medications.

A comparison of this study and Zborowski's (1952) findings in a similar study of the Italian's reaction to pain shows a definite difference. Zborowski found the Italian individual to be very emotional, one who expressed his feelings quite verbally and whose anxiety level was rather high. This researcher found the Mexican-American subjects to be stable, secure, tough, and very relaxed. Those differences support the researcher's statement that although reference is made to both ethnic groups as "Latins," there is a distinct difference in their cultural values in relationship to anxiety and pain.

Findings Related to Theoretical Framework and Fourth Hypothesis

The Mexican-American male remains heavily concentrated in the blue-collar job categories. Low income and poor occupational status in this study are related to the low educational attainment level. The range of the computed scores was categorized into social classes (Appendix D). The Mexican-American subjects had a mean score of 4.7, while the Anglo males had a mean score of 2.7. These findings would support that portion of the hypothesis which holds that injury to a Mexican-American
does not present a threat to his status or social role structure, and, therefore, demonstrates less socioeconomic pressures.

Findings as Related to the General Systems Theory

An attempt was made in this research study to integrate important core subject matter from several sciences into a "wholeness" which has been expressed in the theoretical framework as a part of a quest for an understanding of total patient care.

The General Systems Theory has assisted this researcher in correlating specific knowledge, already established, with new knowledge related to the findings in this study. This correlation of knowledge, such as Mexican-American cultural patterns and their relationship to pain and anxiety, generates a better understanding of genetic factors and environmental forces which are so frequently expressed in a patient's behavior in an extended hospitalization.

Pain, anxiety, socioeconomic pressures, and cultural values have never been specifically defined in the concept of nursing, and while the connotation is present in the phrase, "well-being," without an understanding of these terms, the nurse as a professional, loses certain conceptual tools and is denied the application of theories from other sciences. Without this
knowledge already established, nursing science would be little more than a vast collection of poorly ordered data. Through utilization and integration of the various scientific principles that are applicable to patient care, nursing may become better coordinated and more easily modified to meet the needs of individuals as subsequent relevant data become available.

In conclusion, the results of this research support the belief that the cultural patterns of the Mexican-American male do influence his perception of pain after leg trauma. In addition, anxiety and socioeconomic pressures can precipitate pain in an extended hospitalization.

**Recommendations**

The association between cultural values and pain, as they apply to various ethnic groups, has been a matter of primary concern for many years for persons in the health field.

An exploratory study of the nursing care of Mexican-American patients, related to those patients' expectations and perceptions, would be of benefit in determining other factors which could readily have an influence on a patient's perception of pain, his degree of tolerance for, and acceptance of hospitalization. It should also be determined if a nurse's perception of a patient's expectations differs from those expressed by the
Mexican-American patient. Toward this same end, a further recommendation is that additional studies, which could be patterned from this research, be undertaken, but which would embrace a larger, more heterogenous sampling, utilize other hospital settings, and encompass several comparable surgical procedures.

A final recommendation which should be of importance to nursing as a science would be to conduct a comparative study of values, social class, and expectations from different ethnic backgrounds. The findings of such a study might have the effect of erasing from the nurse's conscious or subconscious mind, stereotyped patient images. This, in turn, might deter the nurse from relying upon her previous criteria for treatment of those patients who, she feels, "fit the picture." To eliminate this "stereotyped patient image" from nurses' minds would, of itself, be a step forward, and should remove a stumbling block in the path of improved, individualized patient care.
CHAPTER VI

SUMMARY

Nurses often find it difficult to care for patients from the lower socioeconomic class. Many nurses express difficulty in comprehending the attitudes and values of patients with an ethnic background differing from their own, especially when the nurse’s expectations of how the patient will behave do not coincide with the patient’s actual behavior. Hollingshead and Redlich (1958) found that individuals in dissimilar social classes tend to have difficulty communicating. Hughes, Hughes, and Deutscher (1958) concluded that nurses, generally, are products of, and reflect values ascribed to middle-class background, and, therefore, frequently their concept of the attitudes and values of a patient from the lower socioeconomic group is based either on stereotypes from past experience, or on similarities of all patients. The study described in the preceding chapters was an attempt to apply the General Systems Theory by integrating concepts, theories, and principles from several sciences, thereby increasing the knowledge and understanding of the Mexican-American culture in order to remove communication barriers that might hamper effective practice.
Purpose of the Study

The purpose of this study was to further knowledge of the behavior and cultural values of the Mexican-American as compared to those of the Anglo to determine those patterns which might influence the differing reactions of the individual male, insofar as they concerned each one's perception of pain after leg trauma.

Petrie's Augmenter-Reducer Theory was also used as the framework for this study. It was the belief of the investigator that cultural patterns of the Mexican-American coincided with Petrie's findings of a "Reducer" in his investigation of the perceptual modulation of the individual reactions to pain.

Other concepts of cultural patterns used to aid in the development of the theoretical framework for this study were Bruegel's findings that individuals from the lower socioeconomic strata received the lowest number of analgesic medications, and Zborowski's comparison of the cultural components in response to pain in Anglos, Jews, and Italians. The problem which was researched was: What relationship is there between the cultural patterns of the Mexican-American and his perception of pain after leg trauma, as compared to that of the Anglo? The problem is significant to the care a person receives, in that the cultural components of an individual are important contributing factors to that care.
Included in this investigation were the variables anxiety and socioeconomic status. Evidence seems to be mounting that pain has meanings which are individual and personal, and can be triggered by psychological forces. Another concept under investigation is that social status may affect the care given to individuals.

**Methodology**

This comparative study was designed to focus on the identification and analysis of the relationship between ethnicity and pain. The General Systems Theory was employed to correlate the economic, social, psychological, and physiological sciences involved in an individual's perception of pain after leg trauma while hospitalized. The instruments used were:

1. A structured interview questionnaire and Cultural Rating Scale devised by the nurse researcher. Priorities according to cultural patterns were categorized. Interorganismal cultural values were weighed, scored, and accorded the highest rating. This was followed by intra-organismal and extra-organismal values.

2. The Institute for Personality and Ability Testing (IPAT) Anxiety Scale, which is designed to measure free-floating, manifest anxiety, was used to analyze psychological anxiety.
3. Petrie's Method for Assessment of Impact on Pain or Sensory Lack is designed to distinguish subjects as being either on the augmenter or reducer end of the pain scale.

4. Information regarding education and occupation was obtained in order to measure social class membership, and for this purpose Hollingshead's Two Factor Index of Social Position was employed.

5. The number of pain medications within a seventy-two hour period after leg trauma was calculated and computed as a physiological measure of pain.

The sample for the study included ten Mexican-American males and ten Anglo males who were admitted to the hospital with leg trauma and met the following criteria:

1. The patient was an Anglo or Mexican-American male between the ages of twenty-five and fifty years.
2. He was able to communicate in oral English.

Findings

The specific hypotheses that were tested in this study were: Mexican-American males with leg trauma, as compared with Anglo males with leg trauma would score higher on a cultural value scale and would:

1. Have less physiological pain as measured by Petrie's Method for Physiological and Psychological Assessment of Pain.
2. Have less physiological pain as measured by the administration of fewer narcotics (Morphine and Demerol).

3. Have less psychological anxiety as measured by the Institute for Personality and Ability Testing--(IPAT) Anxiety Scale.


The differences between mean scores of Petrie's Method for Assessment of Pain, the Cultural Value Scale, Hollingshead's Two Factor Index, the IPAT Anxiety Scale, and the number of pain medications received by the individual subjects within seventy-two hours after their leg injury were correlated and analyzed. All of the correlations were statistically significant, with the exception of the IPAT Anxiety Scale. The Cultural Value Scale and the social status mean score, correlated with the number of pain medications received, had the greatest statistical significance.

There was no significant correlation between the IPAT Anxiety Scale and the testing devices of cultural values, Hollingshead's Two Factor Index, and Petrie's Method for Assessment of Pain. There was a slight
correlation between the IPAT Anxiety Scale and the number of medications given for pain.

When the IPAT raw scores were converted to the Sten System, mean stens of 5.7 for the Mexican-American males and 6.1 for the Anglo males were computed. The sten score of all the Mexican-Americans was within the average anxiety level, while 30 percent of the Anglo males' sten score is considered indicative of a level of anxiety high enough to cause emotional instability.

The variable, socioeconomic level, or social class, correlated significantly with Petrie's Method for Assessment of Pain and the number of pain medications received. It was found that the lower the patient's social class, less was the anxiety expressed while having pain, and less were the medications needed to relieve physical discomfort.

**Conclusion**

The findings of the research point toward a basis in fact for the premise that the cultural components of a Mexican-American individual are important factors relating to his perception of pain. The conclusions are predicated on the results of a comparative study from data collected on ten Mexican-American males and ten Anglo males hospitalized after leg trauma. In addition, the patients studied, whose scores were such that they were ranked in
the lower socioeconomic class, exhibited less anxiety and received less pain medications.

Since cultural values of the Mexican-American male were found to have an effect on their perception of pain, these findings should be of importance to nurses in predicting behavior more accurately, and establishing goals for individual patient care. It was also found that the higher the social status, the more a person is aware of pain and the more anxiety is expressed. This study is valuable to nurses practicing in the Southwest because of the definite cross-cultural situation that exists in the area.

A recapitulation of the recommendations stated in Chapter V would suggest that an extension of this same type of study, together with other more ethnically diversified investigations would open more vistas germane to nurse/patient interaction.
APPENDIX A

DATA COLLECTION FORM AND CULTURAL RATING SCALE

Data Collection Form

Date:_________________ Patient's Hosp. #____________________

Age:_________________ Race: A.________ M.A.________

Diagnosis:_____________ Address:_______________________

Marital Status: S.____ M.____ D.____ W.____

Religion: C.____ P.____ J.____ Other_____

Number of Children: _________ Ages of Children:___________

Education: Circle years completed: 0-6; 7-9; 10-11; 12;

College: 1; 2; 3; 4

Graduate professional training: Yes____ No____

With degree? _________

Occupation: Specify____________________________________

If unemployed, what was last job held?_________________

If wife is employed, what is her occupation?___________

Is present occupation one you would select if you had a
choice? If the answer is no, specify other:_____________

Language: What language is spoken most often in your
home?_____________________________________________

Family: Number in household (immediate family):

Adults____ Children____

(Relatives or Friends): Adults____ Children____

66
Visits to relatives past month? __________
Visits from relatives? ________________
Recreation: What sports do you, or have you participated in? ____________________________________________
Other activities in which you have an interest? _______
Estimate the number of friends: 0-3; 4-6; 6 or more? Circle number.
Medical Care: Do you use, or have you used the services of medicas or curanderas? Always_____; Frequently____; Occasionally_____; Seldom____; Never_____ Number of visits by members of family to physician or clinic in past year____
Religious Pattern: Do you attend church? Yes____ No____; if answer is yes, how often? Weekly?____ Monthly?____
Convictions: Do you think fate is a mechanism of God's will? Always?____; Sometimes?____; Never?____

Index of Social Position

<table>
<thead>
<tr>
<th>Scale x Factor Weight</th>
<th>Score</th>
<th>Social Class</th>
<th>Derived Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>11-17</td>
<td>I</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>18-27</td>
<td>II</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>28-43</td>
<td>III</td>
<td></td>
</tr>
<tr>
<td></td>
<td>44-60</td>
<td>IV</td>
<td></td>
</tr>
<tr>
<td></td>
<td>61-77</td>
<td>V</td>
<td></td>
</tr>
</tbody>
</table>

Education Score plus Occupation Score ______ Derived Score ______ Social Class
Cultural Rating Scale

1. Language Spoken in Household:
   1) English only
   2) Both English and Spanish
   3) Spanish only

   Scale x Factor Weight = Score
   ______ x 5 = Language Score________

   Derived Scores
   Rank   Scores
   1       5
   2       10
   3       15

2. Geographic Location of Member of Minority Community:
   1) Predominately Anglo
   2) Both Anglo and Mexican
   3) Mexican only

   Scale x Factor Weight = Score
   ______ x 5 = Geographic Location Score________

   Derived Scores
   Rank   Scores
   1       5
   2       10
   3       15

3. Religious Patterns:
   A. Denomination
      1) Protestant
      2) Catholic
      3) Other

   Scale x Factor Weight = Score
   ______ x 4 = Religious Denomination Score________

   B. Do you think fate is a mechanism of God's will?
      1) Never
      2) Sometimes
      3) Always

   Scale x Factor Weight = Score
   ______ x 4 = Belief in Fate Score________
C. Attendance at Church

1) Never  
2) Monthly  
3) Weekly  

Scale x Factor Weight = Score  

_____ x 4 = Attendance Score  

4. Family Patterns:

A. Number in Household

1) 0-3  
2) 4-6  
3) 6 and over  

Scale x Factor Weight = Score  

_____ x 3 = Household Number Score  

B. Number of Friends (Close)

1) 0-3  
2) 4-6  
3) 6 and over  

Scale x Factor Weight = Score  

_____ x 3 = Friendship Score  

C. Visit with Relatives in Past Month

1) 0-1  
2) 2-4  
3) 5 and over  

Scale x Factor Weight = Score  

_____ x 3 = Relatives Visitations Score  

5. Health Practices:

A. When you or your family are sick do you:  

1) See medical physician only?  
2) See both physician and other person with medical knowledge?  
3) See Curanderas?
B. Number of visits by family to physician or clinic in past year:
1) 11 and over
2) 10-6
3) 5-0

Scale x Factor Weight = Score
___ x 2 = Health Practices Score

<table>
<thead>
<tr>
<th>Rank</th>
<th>Derived Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4-6</td>
</tr>
<tr>
<td>2</td>
<td>7-9</td>
</tr>
<tr>
<td>3</td>
<td>10-12</td>
</tr>
</tbody>
</table>

6. Recreation: Sports Participation

1) No participation
2) Individual sport
3) Contact sport

Scale x Factor Weight = Score
___ x 2 = Recreation Score

<table>
<thead>
<tr>
<th>Rank</th>
<th>Derived Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
</tr>
</tbody>
</table>

Total Range: 37-111

<table>
<thead>
<tr>
<th>Rank</th>
<th>Derived Scores</th>
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</thead>
<tbody>
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<td>1</td>
<td>37-51</td>
</tr>
<tr>
<td>2</td>
<td>52-66</td>
</tr>
<tr>
<td>3</td>
<td>67-81</td>
</tr>
<tr>
<td>4</td>
<td>82-96</td>
</tr>
<tr>
<td>5</td>
<td>97-111</td>
</tr>
</tbody>
</table>
## APPENDIX B

**PETRIE'S METHOD FOR ASSESSMENT OF IMPACT ON PAIN OR SENSORY LACK**

<table>
<thead>
<tr>
<th></th>
<th>2</th>
<th>4</th>
<th>6</th>
<th>8</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Involuntary verbal expressions of pain (e.g., moaning, yelling, screaming).</td>
<td></td>
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<tr>
<td>2. Demand for analgesics.</td>
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<tr>
<td>3. Spontaneous reports of pain.</td>
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<tr>
<td>4. Restlessness.</td>
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<tr>
<td>5. Squirming, stiffening, gripping.</td>
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<tr>
<td>6. Interference with breathing.</td>
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<tr>
<td>7. Interference with talking.</td>
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<tr>
<td>8. Physical signs of pain (e.g., blanching, sweating, tremor, dilation of pupils).</td>
<td></td>
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<tr>
<td>9. Interference with sleeping.</td>
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<tr>
<td></td>
<td>2</td>
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<tr>
<td>None</td>
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<tr>
<td>Slight</td>
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<tr>
<td>Moderate</td>
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</tr>
<tr>
<td>Severe</td>
<td></td>
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<tr>
<td>Agony</td>
<td></td>
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</tbody>
</table>

10. Interference with eating and other daytime activities.

Total Score 100
APPENDIX C

INSTITUTE FOR PERSONALITY AND ABILITY TESTING--
(IPAT) ANXIETY SCALE
1. I find that my interests, in people and amusements, tend to change fairly rapidly.

2. If people think poorly of me I can still go on quite serenely in my own mind.

3. I like to wait till I am sure that what I am saying is correct, before I put forward an argument.

4. I am inclined to let my actions get swayed by feelings of jealousy.

5. If I had my life to live over again I would:
   (A) plan very differently, (B) want it the same.

6. I admire my parents in all important matters.

7. I find it hard to "take 'no' for an answer", even when I know what I ask is impossible.

8. I doubt the honesty of people who are more friendly than I would naturally expect them to be.

9. In demanding and enforcing obedience my parents (or guardians) were: (A) always very reasonable, (B) often unreasonable.

10. I need my friends more than they seem to need me.

11. I feel sure that I could "pull myself together" to deal with an emergency.

12. As a child I was afraid of the dark.

13. People sometimes tell me that I show my excitement in voice and manner too obviously.

14. If people take advantage of my friendliness I:
   (A) soon forget and forgive, (B) resent it and hold it against them.

15. I find myself upset rather than helped by the kind of personal criticism that many people make.

16. Often I get angry with people too quickly.

17. I feel restless as if I want something but do not know what.

18. I sometimes doubt whether people I am talking to are really interested in what I am saying.

19. I have always been free from any vague feelings of ill-health, such as obscure pains, digestive upsets, awareness of heart action, etc.

20. In discussion with some people, I get so annoyed that I can hardly trust myself to speak.

CONTINUE ON NEXT PAGE.
21. Through getting tense I use up more energy than most people in getting things done

22. I make a point of not being absent-minded or forgetful of details

23. However difficult and unpleasant the obstacles, I always stick to my original intentions

24. I tend to get over-excited and "rattled" in upsetting situations

25. I occasionally have vivid dreams that disturb my sleep

26. I always have enough energy when faced with difficulties

27. I sometimes feel compelled to count things for no particular purpose

28. Most people are a little queer mentally, though they do not like to admit it

29. If I make an awkward social mistake I can soon forget it

30. I feel grouchy and just do not want to see people:
   (A) occasionally, (B) rather often

31. I am brought almost to tears by having things go wrong

32. In the midst of social groups I am nevertheless sometimes overcome by feelings of loneliness and worthlessness

33. I wake in the night and, through worry, have some difficulty in sleeping again

34. My spirits generally stay high no matter how many troubles I meet

35. I sometimes get feelings of guilt or remorse over quite small matters

36. My nerves get on edge so that certain sounds, e.g., a screechy hinge, are unbearable and give me the shivers

37. If something badly upsets me I generally calm down again quite quickly

38. I tend to tremble or perspire when I think of a difficult task ahead

39. I usually fall asleep quickly, in a few minutes, when I go to bed

40. I sometimes get in a state of tension or turmoil as I think over my recent concerns and interests

STOP HERE. BE SURE YOU HAVE ANSWERED EVERY QUESTION.
APPENDIX D

HOLLINGSHEAD'S OCCUPATIONAL AND EDUCATIONAL SCALE: TWO FACTOR INDEX OF SOCIAL POSITION

The Two Factor Index of Social Position is based upon three assumptions: (1) the existence of a status structure in the society; (2) positions in this structure are determined mainly by a few commonly accepted symbolic characteristics; and (3) the characteristics symbolic of status may be scaled and combined by the use of statistical procedures so that a researcher can quickly, reliably, and meaningfully stratify the population under study.

The Occupational Scale

Occupation is presumed to reflect the skill and power individuals possess as they perform the many maintenance functions in the society. The following seven categories are used in the occupational scale:

1. Executives and proprietors of large concerns and major professionals.
3. Administrative personnel of large concerns, owners of small independent businesses and semi-professionals.
4. Owners of little businesses, clerical and sales workers, and technicians.
5. Skilled workers.
7. Unskilled workers.

The Educational Scale

The educational scale is based upon the assumption that individuals who possess similar education will tend to have similar tastes and attitudes, and will also demonstrate similar behavior patterns. The seven positions on the educational scale are:

1. Graduate professional training. (Persons who complete a recognized professional course leading to a graduate degree are given scores of 1.)
2. Standard college or university graduation. (All individuals who had completed a four-year college or university course leading to a recognized college degree were assigned the same score. No differentiation was made between state universities or private colleges.)
3. Partial college training. (Individuals who had completed at least one year but not a full college course were assigned to this position.)
4. High School graduation. (All secondary school graduates whether from a preparatory school,
public high school, trade school, or parochial high school were given this score.)

5. Partial high school. (Individuals who had completed the tenth or eleventh grades but had not completed high school were given this position.)

6. Junior high school. (Individuals who had completed the seventh grade through the ninth grade were given this position.)

7. Less than seven years of school. (Individuals who had not completed the seventh grade were given the same scores irrespective of the amount of education they had received.)

The factors of occupation and education are combined by weighing the individual scores obtained from the scale position. The weight for the occupational factor is seven and for the educational factor, it is four. The scale score for both factors is then multiplied by the factor weight and then summed to obtain the individual's index of social position score. The range of computed scores is then categorized into the following social class categories:

<table>
<thead>
<tr>
<th>Social Class</th>
<th>Range of Derived Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>11-17</td>
</tr>
<tr>
<td>II</td>
<td>18-27</td>
</tr>
<tr>
<td>III</td>
<td>28-43</td>
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<tr>
<td>IV</td>
<td>44-60</td>
</tr>
<tr>
<td>V</td>
<td>61-77</td>
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</tbody>
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SELECTED BIBLIOGRAPHY


