THE PERCEPTIONS OF MIDDLE-AGED, LOW-INCOME OBESE HISPANICS ABOUT THE RELATIONSHIP BETWEEN OBESITY AND THE PERCEIVED RISK OF DEVELOPING NON-INSULIN DEPENDENT DIABETES MELLITUS (TYPE II)

By

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ABSTRACT

THE PERCEPTIONS OF MIDDLE-AGED, LOW-INCOME OBESE HISPANICS ABOUT THE RELATIONSHIP BETWEEN OBESITY AND THE PERCEIVED RISK OF DEVELOPING NON-INSULIN DEPENDENT DIABETES MELLITUS (TYPE II)

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This pilot study explored the health beliefs of a specific ethnic population, the Hispanics. The individual perceptual variables of susceptibility, severity, benefits, and barriers, as well as related modifying and motivational variables were explored in order to further understand factors which affect an individual's perceptions of the risk of developing diabetes mellitus (Type II).

Both descriptive and inferential statistics were used to analyze the data. Significant correlations were found between increasing age and barriers; increasing age in males and both susceptibility and barriers; increasing age in females and benefits; increasing age in females and negative susceptibility; increasing family developmental stage and barriers; and motivational "cues to action" and negative susceptibility.

A major implication drawn from the research findings was the need for training culturally sensitive health care

providers who could develop and implement health teaching tools and methods which were firmly grounded in cross-cultural nursing theory, and which reflected the individual perceptions of the client.

To Jerry with all my love

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CHAPTER I

THE PROBLEM

Introduction

Individuals whose first language is Spanish, Hispanics, comprise a sizable minority in the United States today (Spector, 1979). Both obesity and non-insulin dependent diabetes mellitus (Type II) have been identified by health care providers as significant threats to health within the Hispanic culture. In order for health professionals to communicate effectively the potentially negative effects of marked obesity upon a specific ethnic population, it is necessary for the provider to possess knowledge of the cultural norms of the ethnic group and to be cognizant of potential cultural barriers within the ethnic group which may hinder the effective application of conventional health teaching programs.

This research study focused upon the perceived effect which obesity has upon the development of diabetes within an Hispanic population. In order to provide a cultural framework for studying obesity among the Hispanic population, common health beliefs and attitudes toward health

care were examined. Obese low-income Hispanics were interviewed to determine their perceived susceptibility to diabetes, the perceived severity of diabetes as a disease entity, and the perceived benefits and barriers to weight reduction as a preventive health care action. Both cultural norms and individual variations in belief were explored in order to propose the development of culturally relevant teaching methods to aid in reducing the threats of obesity and diabetes within the Hispanic population.

The Hispanics as a Minority Group

The United States Department of Commerce Current Population Reports state that as of March 1979, there were 12.1 million persons of Hispanic origin in the United States; including 7.3 million Mexican-Americans; 1.7 million Puerto Ricans; 800,000 Cubans; 800,00 Central and South Americans, and 1.4 million designated as "other." Thus, Hispanics comprise over 5% of the present United States population. Census projections for 1977 stated that by the mid-1980s Hispanic individuals would surpass the number of Blacks and would become the largest single minority group in the United States (Spector, 1979).

The majority of Hispanics reside in the southwestern United States, but sizable populations also exist in other states, notably Florida and New York. In Michigan, in 1979, there were 193,000 Hispanics, who comprised 2.1% of the population as compared to 1.7% in 1970 (United States Department of Commerce, 1979). While the southwestern

Hispanics are mainly of Mexican origin and the eastern Hispanics are of Cuban or Puerto Rican origin, the Hispanic population in Michigan is varied, with Cuban, Puerto Rican, and central American populations in the major cities, and many persons of Mexican heritage scattered throughout the state, especially in the agricultural centers.

The Prevalence of Poverty Among Hispanics

The prevalence of poverty is higher among Hispanics than among the general United States population. In 1969, the number of families below the official United States poverty line was five times greater among Hispanics than non-Hispanics (Spector, 1979). For a non-farm family of four in the United States in 1981, the average poverty threshold was set at $8,449. At this level, 20.4% of all Hispanics fell below the poverty line (United States Department of Commerce, 1979). Thus, the Hispanic population contains a disproportionately high number of low-income persons.

Obesity as a Medical and Social Risk Factor

Obesity is an ever increasing phenomenon in the United States, associated with both a decrease in hard physical labor and exercise, and with an abundance of material resources (Mayer, 1975). Using standard indicators for obesity, it has been estimated that between 30 and 40% of the American population at present is obese (Nuttall, 1979). Although current research indicates that mild to moderate

obesity may not present any serious health risks (Andres, 1980), marked obesity, greater than 20-30% over average weight for height, may be a precursor to a host of medical and/or social maladies.

Medically, obesity has been implicated in the incidence of diabetes mellitus (Type II), osteoarthritis, varicose veins, hernias, and gallbladder disease (Albrink, 1975). Obesity may also lead to increased mortality rates resulting from the development of diseases such as diabetes (Mitchell, Rynberger, Anderson, & Dibble, 1976).

Socially, while the incidence of obesity is rising, the media has portrayed the ideal of "youthful slenderness" as a goal to be attained and maintained by middle-aged individuals. While obesity (especially in women) may be valued in a number of traditional societies, it is discouraged in the image of the present day American (Powdermaker, 1973) Overweight is often viewed as "sin" or as a disease by the mass media (Allon, 1973). Obesity may lead to discrimination in employment and social relations (Martin, 1977). Obese individuals have been the objects of social stigma due to peer opinion that, unlike other physical infirmities, they are to blame for their condition (Bray, 1976).

It may be argued that the preceding description of the social stigma of obesity is relevant only among white, middle and upper-class Anglo Americans, and that obesity carries no such powerful negative image among the predominately low-income Hispanic population (Schulman & Smith,

1963). Allon (1973), however, stated that although differences in the perception of obesity exist among various ethnic, racial, and religious groups, it appears that concern about the social consequences of overweight is now cutting across all socioeconomic lines, especially among the younger age groups. Allon advocated the need for further research into the effect that racial, ethnic, or religious status had upon the perceptions of obesity. The present research study's emphasis upon perceived benefits and perceived barriers to weight reduction was designed to investigate ethnic effects upon perceptions of obesity and thus may contribute to the body of knowledge regarding obesity and ethnic identity.

The Prevalence of Obesity Among Low-Income and Ethnic Populations

There is an increased prevalence of obesity among low-income persons. Goldblatt, Moore, and Stunkard (1965) found obesity six times as prevalent among low-income women than among upper-income women and two times as prevalent among men in a non-random sample in New York City. Silverstone, Gordon, and Stunkard (1969) and McLean, Baird, Silverstone, Grimshaw, and Ashwell (1975) reported similar findings of increased obesity among the lower social classes, especially among women.

The Ten State Nutrition Survey (1972); Garn, Bailey, Cole, and Higgins (1977); and Kohrs, Wang, Eklund, Paulsen, and O'Neal (1979) all found that increased skinfold fatness

in females was inversely related to income, while obesity increased with income for males. Silverstone et al. (1969) suggested that low-income men were less prone to obesity due to the hard manual labor they often perform. Oken, Hartz, Giefer, and Rimm (1977) postulated that obesity in women due to weight changes brought on by repeated child-bearing was primarily related to the low-income groups. Regardless of the origins of the obesity, the evidence indicates that obesity is prevalent among low-income populations and is more common among women.

Ethnic identity was also correlated with obesity by Srole, Langner, Michael, Kirkpatrick, Opler, and Rennie (1978). Various ethnic groups were examined (including Puerto Ricans, a subset of Hispanics) with the resulting evidence showing that obesity was more prevalent among recent low-income immigrants to the United States, than among third or fourth generation Americans.

From the above evidence, it may be concluded that the low-income Hispanic population (especially recent immigrants and women) is more prone to obesity. The actual evidence attesting to this hypothesis follows.

The Prevalence of Obesity Among Hispanics

Chase, Kumar, Dodds, Sauberlich, and Hunter (1971); Yanochik-Owen and White (1977); Larson, Dodds, Massoth, and Chase (1974); and Ziegler (1980) found obesity to be prevalent among Hispanic children, particularly among girls. Seventeen percent of the 40,000 low-income persons studied

in the Ten State Nutrition Survey (1972) were Hispanic. Obesity was found to be widespread among the adult women, children, and adolescents. Kaufman, Lewis, Hardy, and Droulx (1973); and McGanity (1969) found obesity prevalence rates of up to 40% among their adult Hispanic samples. Overall, these studies found a higher prevalence of obesity among Hispanic women than among men, which is similar to the findings of the general low-income and ethnic studies. The Hispanic populations studied ranged from first generation in the United States to those individuals whose families had resided in the southwestern United States for centuries, but data were not available correlating length of residency with obesity.

The Prevalence of Diabetes Among Hispanics

Since obesity is a precursor of non-insulin dependent diabetes mellitus (Type II), it can be postulated that any population with a high incidence of obesity may be at increased risk for the development of Type II diabetes. The almost uniformly obese Pima Indians of Arizona have the world's highest known incidence of Type II diabetes (over 30% of adults) (Knowler, Bennett, Bottazzo, & Doniach, 1979; West, 1972).

A host of studies have confirmed a relationship between obesity and diabetes, and have described the incidence and prevalence of Type II diabetes in various populations around the world including the central Pacific, Haiti, Israel, the

Eskimos, the Cherokees of North Carolina, and Central America (Zimmet, Taft, Guinea, Guthrie, & Thoma, 1977; Charles & Medard, 1969; Cohen, 1961; Mouratoff, Carrol, & Scott, 1967; Stein, West, Robey, Tirador, & McDonald, 1965; and West & Kalbfleisch, 1970). However, no descriptive studies have been conducted investigating the incidence or prevalence of diabetes among Hispanics in the United States.

United States government health statistics revealed that in 1973 the prevalence rate for diabetes for whites in the United States was 19.9 per 1,000 population (1.9%), and for non-whites was 23.9 per 1,000 population (2.3%) (Rudov & Santangelo, 1979). A review of government and non-governmental health statistics records revealed that data regarding diabetes were only recorded according to the white/non-white criterion, and that no separate data on minority subgroups were reported (Michigan Department of Public Health, 1979; Bureau of Census, 1979). As Hispanic is a linguistic and not a racial categorization, no specific information on Hispanics was reported. However, it was reported that the prevalence of diabetes varied widely with different population and ethnic groups and was markedly higher among low-income groups. For persons with incomes less than $3,000, the prevalence rate was 249% higher than for persons with incomes greater than $15,000 (Rudov & Santangelo, 1979).

In order to gather relevant statistics on the Hispanic population, it would be necessary to separate the data

according to white, black, and native American categories to rule out the influence of possible racial factors in the rates. Because of the complexity of that task, it is not surprising that no specific statistics are available for diabetes among Hispanics.

The Study of Health Beliefs Within a Low-Income Population

The present research explored the health beliefs of a low-income, ethnic population regarding obesity and its role as a precursor of chronic disease, specifically diabetes. Rosenstock (1969) described the preventive Health Belief Model and how its components of perceived susceptibility, perceived severity, perceived benefits, and perceived barriers related to a specific health action designed to prevent disease. Research studies based upon the preventive Health Belief Model found that those persons who took preventive action and participated in programs to improve their health tended to be young, white, female, well-educated, and of high socioeconomic status (Rosenstock, 1974). Using this data, the preventive Health Belief Model might be assumed to have only limited applicability to low-income persons of ethnic origin.

Rosenstock (1969) supported this contention when he assumed that the low-income person existed in a distinct "culture of poverty." The concept of a subculture of poverty with its own cultural attributes was first described by social scientists who sought to explain the behavior they

observed in ghetto areas such as laziness, lack of ambition, and irresponsibility (Warner, 1962; Davis, 1948; Davis, Gardner, & Gardner, 1941), by using a cultural, rather than socioeconomic, argument to define the origins of the observed behavior. Lewis (1959; 1961; 1968) designated the term "culture of poverty" to the most deprived, poorest, and disorganized of the lower class, those he felt had little or no hope of escaping a cycle of poverty. Harrington (1962), the theoretical architect of the federal government's so-called "war on poverty," stated that poverty itself creates a culture which then becomes self-perpetuating and which denies access to increased affluence to those caught in the cycle. The individual within the "culture of poverty" was described as having a low level of aspiration, feelings of hopelessness, and feelings that life is controlled by fate (Bullough, 1972).

Rosenstock (1969) applied the concept of "culture of poverty" to health beliefs by stating that the poor tended to not possess the beliefs which would lead to preventive health actions. The poor were seen as having less knowledge of the disease process and less ability to plan for the future. Rosenstock hypothesized that the origins of health behavior by the poor might have arisen out of economic deprivation, but that now the "culture of poverty" had its own self-perpetuating structure. Removal of economic barriers alone would not lead to increased utilization of health care services by the poor, because they felt bypassed

by the professional health care system and were more comfortable with a lay or folk health care system (Rosenstock, 1969).

Since its inception, much criticism has been directed at the concept of "culture of poverty." The "culture of poverty" concept asserts that the deprived possess different attitudes and perceptions about life and health than the more affluent population. Valentine (1968) defined poverty as "a condition of being in want of something that is needed, desired, or generally recognized as having value" (p. 12) and stated that "the essence of poverty is inequality and relative deprivation" (p. 13). Valentine argued that references to "culture of poverty" and all other attempts to categorize the poor as a separate cultural group contradicted the positive meaning of the concept of culture and denied the basic injustices which result in poverty. He suggested that the poor have similar cultural values to the middle class, but that these have been modified due to situational stress. Thus, the lack of attention to preventive health care which Rosenstock (1969) pointed to as a symbol of "culture of poverty" may in fact be more indicative of a different set of financial priorities due to necessity, rather than of a different set of cultural beliefs.

Alternative theories to the "culture of poverty," also developed in the 1960s, emphasized the examination of economic, political and structural features of society rather than beliefs or values (Harris, 1968). Kupferer

(1962) found that behavioral differences in matters of health were more closely related to social class than to acculturation and advocated economic reform to improve health status rather than attempting to change cultural beliefs. Valentine (1968) cautioned that the poor should not be lumped together indiscriminately, but that ethnic differences should be explored, in order to differentiate between cultural and socioeconomic causes of behavior.

Nursing research has also emphasized the need for both socioeconomic and cultural studies concerning health beliefs and practices (Dorsey & Jackson, 1976; Spector, 1979). Bullough (1972) studied the impact of social alienation in three forms; powerlessness, hopelessness, and social isolation, as barriers to preventive health care. This social alienation was thought to have developed out of poverty. Boyden-West (1980) studied both ethnic and poverty issues and differed from Rosenstock in that Boyden-West attributed a <u>difference</u> in knowledge due to cultural variation, rather than a <u>lack</u> of knowledge, as being the prime factor in the variance among health beliefs within different populations. Both Bullouth and Boyden-West subscribed to a modified theory of the "culture of poverty" which they related to both economic poverty and to minority status in the United States.

In conclusion, controversy exists as to whether the "poor" are different than other members of society in ways other than socioeconomic. Most early research focused on

individual beliefs and values, while more recent researchers have emphasized the need for a more thorough investigation into the causes of poverty. The present research was undertaken with the understanding that the low-income Hispanic population is beset by both economic and cultural barriers to preventive health care. However, the concepts that these individuals are hopelessly caught in a "culture of poverty" which defeats all attempts at self-care, or that these individuals are necessarily different because they are poor are rejected by this researcher. Even Rosenstock (1974) conceded that individual variance, within low-income and ethnic groups, existed and that individual health beliefs could override specific socioeconomic and cultural barriers to preventive health behavior.

Therefore, the present research focused on the study of individual Hispanics and their health beliefs, while acknowledging and studying the impact of both socioeconomic and cultural identity upon perceptions of health. Based on the knowledge generated, appropriate nursing interventions can be proposed which are sensitive to the needs of the Hispanic population.

Purpose of the Study

This research study focused on the health beliefs of a specific ethnic population and on the effect these beliefs may have upon possible preventive health care behavior. Middle-aged, low-income obese Hispanics, at risk to develop diseases such as diabetes, are affected by a number of

subjective factors which may inhibit attempts at weight reduction. These factors include individual perceptions about the risk of developing a disease as the result of obesity, about the potential severity of the disease process, and about emotional, physical, and socioeconomic benefits and barriers to weight reduction. Collection of subjective data about these factors can aid in the development of weight reduction teaching programs which are as individually and culturally barrier free as possible.

Statement of the Problem

What are the perceptions of middle-aged, low-income obese Hispanics about the relationship between obesity and the perceived risk of developing non-insulin dependent diabetes mellitus (Type II)?

Research Questions

1. Does the middle-aged, low-income obese Hispanic perceive that he/she is susceptible to develop non-insulin dependent diabetes mellitus (Type II)?
2. What is the perceived severity of Type II diabetes mellitus among middle-aged, low-income obese Hispanics?
3. Are there perceived benefits to weight reduction among middle-aged, low-income obese Hispanics?
4. Are there perceived barriers to weight reduction among middle-aged, low-income obese Hispanics?

5. What are the relationships between perceived susceptibility to and perceived severity of disease, and perceived benefits and perceived barriers to weight reduction?
6. What are the relationships between the modifying variables of age, sex, family developmental stage, and family history of diabetes, and the main perceptual variables of susceptibility, severity, benefits, and barriers?
7. What are the relationships between the motivational "cues to action" and the main perceptual variables of susceptibility, severity, benefits, and barriers?

Definitions of Terms

Obesity--Although there is much controversy over the operational definition of obesity, most definitions linked skeletal size and body weight. Bray defined obesity in terms of an energy balance, an excess caloric intake relative to caloric expenditure, which results in the storage of fat (Texter, 1977). Obesity may also be defined as a bodily state in which there is an excessive accumulation of fat in both the absolute and relative sense or as body weight greater than is consistent with body build (Kiell, 1973). Mayer made a distinction between obesity, which is a pathological accumulation of weight much beyond normal, and overweight, which is body weight in excess of average (1980).

To determine obesity in the individual, the appearance of the naked person is often sufficient for a qualitative

diagnosis to be made. When quantitative data are desired, the easiest and most commonly used guidelines are height-weight tables such as those of the Metropolitan Life Insurance Company based on data reported in 1959 or the tables of the 1960-1962 health survey of the United States Department of Health, Education, and Welfare (Mayer, 1980). The individual's weight is compared to a standard weight determined for height, sex, and age. Overweight is generally defined as up to 20% over the standard, and obese is greater than 20% over the standard weight.

There are both limitations and benefits to utilization of the height-weight tables. Although the tables are categorized into different body builds, no criteria are given for determination of body build. The tables also cannot distinguish between muscle weight and true adiposity, therefore a muscular athlete and a sedentary overweight individual may both be typed as obese without adequate description of the source of the extra poundage (Mayer, 1980).

The major benefit of the height-weight tables is the ease with which they can be utilized compared to more scientific measurements of body fat such as the measurement of skin-fold thickness with calipers of the use of whole body specific gravity (Albrink, 1975). Exact as the latter methods may be, they are not crucial to a study of adults which does not require an exact percentage of obesity. For the purpose of this study, the ease of utilization combined with a good "estimate" of body weight in a general adult

population resulted in the decision to use the tables of the United States Department of Health, Education, and Welfare, 1966 (Appendix A). Obesity was defined as 20% over the standard weight for height.

Non-insulin dependent diabetes mellitus (Type II)--The traditional nomenclature for non-insulin dependent diabetes has been adult-onset or maturity-onset diabetes. In accordance with the National Diabetes Data Group classification of 1979, the designation was changed to non-insulin dependent diabetes mellitus or Type II. Within this category, there are two subsets, obese and non-obese. For the purpose of the present study, only the obese non-insulin dependent diabetes was considered.

In Type II diabetes, the pancreas possesses a diminished islet cell reserve of insulin. The relative insulin deficiency and consequent decreased tolerance to glucose may only become apparent when an external factor such as obesity exerts an extra demand on the pancreas for insulin (Albrink, 1975). Type II diabetics are not prone to ketosis and generally do not require insulin replacement unless diet or oral agents do not control their fasting blood glucose. The Type II diabetic may be asymptomatic and non-detected for years and even decades, yet is subject to the same systemic disease manifestations (macroangiopathy, microangiopathy, neuropathy, and cataracts) as the insulin dependent diabetic (National Diabetes Data Group, 1979).

The etiology of Type II diabetes involves several factors. There is a genetic basis for the disease, which appears stronger than for insulin dependent diabetes. Environmental factors interacting with genetic predisposition account for many occurrences of the disease. Excessive caloric intake leading to weight gain and obesity are important etiologic agents. It has been estimated that between 60 and 90% of all Type II diabetics are obese in Western society. Although the most common onset is after age 40, the disease may occur at any age. In obese persons with Type II diabetes, glucose tolerance and hyperglycemia are often improved by weight loss (National Diabetes Data Group, 1979).

The National Diabetes Data Group (1979) stated that a diagnosis of diabetes should be based on one of the following:

1. Unequivocal elevation of plasma glucose concentration together with the classical symptoms of diabetes.
2. Elevated fasting plasma glucose concentration (above 140 mg/dl) on more than one occasion.
3. Elevated plasma glucose concentration after an oral glucose challenge on more than one occasion.

The definitive diagnosis of diabetes has often been made from the results of the glucose tolerance test. However, Siperstein (1979) argued that the glucose tolerance test may be an inaccurate predictor of hyperglycemia and may have caused many individuals to be falsely labeled as diabetic. The National Institute of Health, on the basis

of Siperstein's work, stated that persistent (at least two) fasting plasma glucose levels in excess of 140 mg/dl are a reliable diagnostic indicator of diabetes (1979). Since the label of diabetic may carry a serious social stigma (increasing insurance rates, and possible job and other discrimination) and often requires drastic changes in habits, an accurate diagnosis is essential.

Middle-aged--The middle-aged adult was chosen for study in the present research for two reasons; the potential impact of family developmental stage upon perceptions of obesity and disease risk and the typical age of onset of Type II diabetes. Stevenson (1977) defined early middle-age or middlescence I as age 30 to 50. During this life stage, the individual is concentrating on childrearing and launching the children into society, as well as achieving personal and occupational goals. According to Duvall's (1977) eight stages of family development, the family progresses smoothly from the early stages of establishing the marital unit and childbearing, to childrearing and the launching of children into society. The Duvall model is based on the presupposition that childbearing will occur during a fairly short span of time, thus allowing the children to progress almost simultaneously through the various stages of development.

In contrast, within the Hispanic culture, it is common to begin childbearing at a young age, to have a large family, and to bear the last child at an older age (Clark, 1970). Therefore, the tasks of raising and launching the family,

very important in the Hispanic culture, are prolonged in comparison to Stevenson's definition of middlescence I. The Hispanic family may be involved in several stages of development at one time, such as caring for preschoolers and launching teenagers. These family demands may preoccupy the Hispanic individual to the extent that individual goals are difficult to focus on. Thus, the Hispanic middle-aged person may not have the time or energy to be concerned with obesity and its risk factors. Likewise, the ability to adhere to a diet regimen may be severely compromised when meals must be prepared for a large family with varied schedules. Even with these deterrents to the perception of the potential seriousness of obesity, it is important to study the middle-aged Hispanic because of the typical age of onset of Type II diabetes mellitus.

Aging is an important factor in the incidence of both obesity and Type II diabetes. Silverstone stated that average weight increases with age as does the incidence of significant obesity (1973). The Metropolitan Life Insurance Company tables documented an increase in weight in advancing years (Mayer, 1980), and the National Center of Health Statistics for the Public Health Service stated that the maximum average weight for men is attained between the ages of 35 and 54 and for women between 55 and 64 (Mayer, 1980). The National Diabetes Data Group (1979) defined Type II diabetics as generally over 40 years of age.

The above data have shown that it is important to study obesity in middle-aged Hispanics both because the middle-aged Hispanic may have many family stressors which contribute to obesity and difficulty in weight reduction and because the incidence of both obesity and Type II diabetes increase with advancing age. For the present research the age range of 30 to 60 was chosen to define middle-aged. The upper limit was extended from Stevenson's age 50 for middlescence I because of the tendency to bear the last child at an older age among the Hispanic population, and thus to prolong the stage of childrearing and launching into society. Since it is the youngest child who determines how long the couple will be responsible for childrearing, it was also the age of the youngest child which was used to determine the family developmental stage.

Low-income--In March 1981, the federal government's poverty threshold for a non-farm family of four was $8,449. The federal guidelines are utilized by individual states and counties to establish charges for health care. Generally, families with up to double (200%) the federal poverty threshold income are classified as low-income (Appendix B). For the purpose of this study, the term low-income was applied to those individual whose family income fell below 200% of the poverty threshold set by the federal government.

Hispanic--The term Hispanic was used in this study to refer to any individual whose first language is Spanish.

This includes Spanish-speaking persons from diverse locations such as Cuba, Puerto Rico, Mexico, and Central and South America, as well as Spanish-speaking individuals born in the United States (Verway, 1978). Spanish-speaking people are of varied and often mixed racial background and, for the 1980 census, were able to choose the race with which they most closely identified.

Modifying Variables or Factors--The modifying variables studied included age, sex, family developmental stage, and family history of diabetes. Age and sex provided background sociodemographic data. The determination of family developmental stage provided insights into possible environmental factors affecting perceptions of obesity and diabetes. Because diabetes has a genetic component and because familiarity with the disease within the family structure may affect the individual's perceptions, it was important to ascertain whether the individual had a history of familial diabetes.

Motivational "Cues to Action"--The Hispanic culture traditionally places a strong emphasis upon the power of the spirit world. In many rural regions of Latin America, the Native American spiritual beliefs have remained virtually untouched by the Catholic church. In other areas, the Catholicism of the Spanish conquistadores blended with the traditional religions into a belief system which emphasizes the individual's submission to fate (whether fate is expressed as the will of God, the power of the devil or spirits, or

merely as chance). The attaining and maintaining of good health is linked to the interaction between good (as represented by God and the saints) and evil (the devil and human witches) (Holland, 1978).

The present investigation explored the extent of local Hispanics reliance upon powerful others and/or chance for guidance in relation to health matters. Reliance upon scientific and/or lay or folk health care practitioners was also studied.

Limitations of the Study

1. The subjects who agreed to participate in the study may be different from those persons who refused. The subjects may, therefore, not be representative of the low-income Hispanic population at large.
2. The sample was a convenience, rather than a random sample. Every person who qualified in the age, weight, and language categories and was not a diagnosed diabetic was asked to participate.
3. The questions in the interview were close-ended and therefore limited the subjects' answers to those perceptions which the researcher believed were important. The questionnaire may not have measured other valid perceptions of the subjects.
4. The sample was drawn from a limited geographic area.

5. Subjects who had close family or friends with diabetes may have possessed significantly more knowledge about the disease than other subjects.

Assumptions

1. The subjects were able to understand the questions on the instrument (given in interview format) and answered in as honest a manner as possible.
2. Study participants acknowledged that they were obese and answered the items accordingly.
3. The subjects had at least heard the term "diabetes" and held some opinions about the disease.

Overview of the Chapters

In the preceding chapter, an introduction to the study, statement of the problem, research questions, definition of concepts, limitations, and assumptions were presented. In Chapter II, a conceptual framework is presented which integrates the preventive Health Belief Model variables and modifying and motivational factors with cross-cultural nursing and self-management theories. In the review of the literature, Chapter III, the sources of concepts relevant to the research questions are documented.

The methodology and procedures utilized in this study are presented in Chapter IV. Descriptions of the sample, setting, instrument, data collection procedures with human rights protection, scoring of the data, and procedures for data analysis are presented. Data describing the study

sample and data pertaining to the research questions are presented in Chapter V. In Chapter VI, the summary and interpretations of the findings are presented. The research findings are analyzed in terms of limitations, implications for nursing practice and education, and recommendations for future research.

CHAPTER II

CONCEPTUAL FRAMEWORK

Overview

In this chapter, a conceptual framework is presented which integrates the preventive Health Belief Model variables and modifying and motivational factors with cross-cultural nursing and self-management theories. The framework presentation includes a brief review of the origin of the preventive Health Belief Model; descriptions of the main study variables of perceived susceptibility, perceived severity, perceived benefits, and perceived barriers; a discussion of modifying and motivational factors which may affect individual perceptions (Rosenstock, 1974); and an exploration of the manner in which cross-cultural nursing theory (Leininger, 1978) can be utilized to enhance preventive health care behavior.

The Health Belief Model

The Health Belief Model was developed to explain preventive health behavior which was defined by Kasl and Cobb (1966) as

> Any activity undertaken by a person who believes himself to be healthy for the purpose of preventing disease or detecting disease in an asymptomatic stage. (p. 246)

The Health Belief Model described by Rosenstock (1974) is based upon the theories of decision-making and behavior motivation first proposed by Lewin (1935), who postulated that behavior is derived from positively, negatively, or neutrally valued individual perceptions. Each individual constructs his own world view, giving meaning to events, objects, or words from the symbolism they represent to the individual rather than from any universal cultural determinant or stereotype. This theoretical framework emphasizes the importance of the individual defining one's own behavior (Wagner, 1970). In developing the Health Belief Model, Rosenstock utilized an individually based definition of perception:

> that it is the world of the perceiver that determines what he will do and not the physical environment, except as the physical environment comes to be represented in the mind of the behaving individual. (1974, p. 2)

The Health Belief Model integrates Lewin's psychological theories of decision-making into a framework which permits the analysis of the individual's process of decision-making regarding health behaviors. This Health Belief Model allows sociopsychological variables to be used to explain preventive health behavior. Using Rosenstock's (1974) interpretation of Lewin's theory, disease would be regarded as negative. An individual would initiate action to change health behavior to avoid or minimize the disease unless that

preventive action was perceived by the individual as more negative than the actual disease process. In order for preventive action to occur, the individual would have to feel personally susceptible to the illness, would have to acknowledge the potential severity of the diagnosis, would have to recognize that the preventive action would produce benefits in the form of reduced susceptibility and/or severity, and would have to feel that there would not be insurmountable barriers to its enactment.

For the present research, the preventive Health Belief Model was utilized to determine the individual perceptions of obese Hispanics regarding their perceived risk of developing Type II diabetes mellitus (Figure 1). In the following sections, the individual variables of perceived susceptibility, perceived severity, perceived benefits, and perceived barriers are examined in relation to traditional Hispanic health beliefs.

Perceived Susceptibility

In order to perceive a disease such as diabetes mellitus as a potential threat to one's own health, the individual must feel both susceptible to the disease, and that the disease is severe in present or future ramifications. Susceptibility is defined by Rosenstock as "the subjective risk of contracting a condition" (1974, p. 3).

Within the Hispanic culture susceptibility to a disease can be based upon several factors. The traditional Catholic

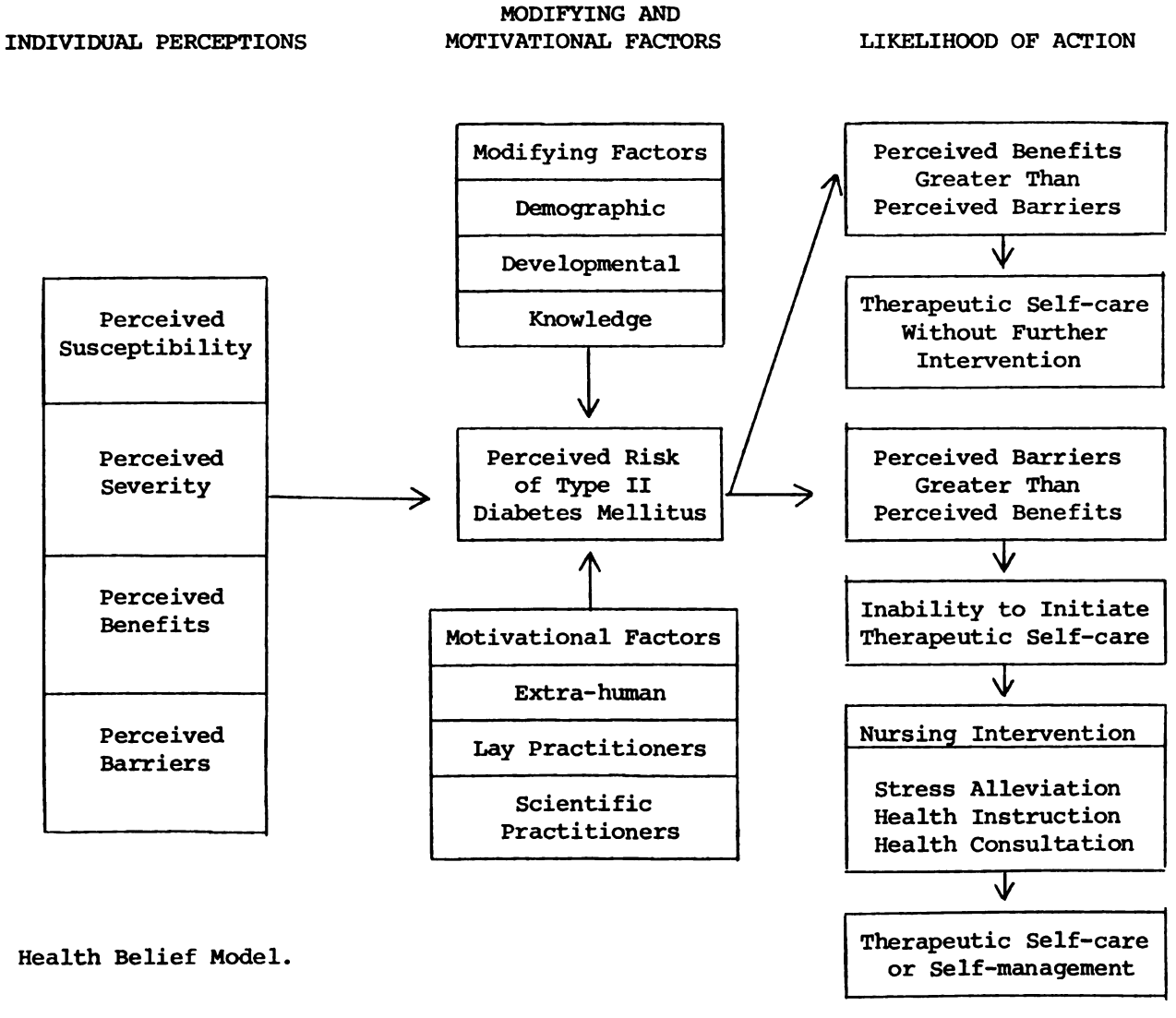

Figure 1. Health Belief Model.

and folk religious beliefs permeate the conceptions of life and health. The traditions of the Catholic church remain strong within the Hispanic culture. "God . . . is omnipotent" and man is "subject to His judgment and justice" (Samora, 1978, p. 66). Because man is perceived as basically evil, there will always be hardships and sufferings in this life. However, by subjecting one's life to God's will, the individual may achieve both eternal salvation for the soul, and the peaceful knowledge that the sufferings of this life, whether caused by "castigos" or punishments meted out by God for wrongdoing, or merely to strengthen the individual to endure suffering for its own sake, are not without meaning (Samora, 1978).

Samora viewed this life of "submission and acceptance" as "fatalistic and even defeatist," stating that an individual with this world view can do little, if anything, to attempt to change life's course.

> Such a conception of life is highly resistant to active, conscious attempts to change the way of life, because one accepts life as it is and adjusts to it in general and to specific situations in particular. (1978, p. 67)

Thus, it might be presumed to be very difficult to introduce the concept of disease prevention into a culture which allows for precautionary measures to be taken against natural occurrences, but does not believe it can "prevent God's will" from taking place, or illness from occurring if it has been preordained.

In addition to traditional religious beliefs, there are two other explanations for disease causation among the Hispanic population; the personalistic and the naturalistic medical systems (Foster, 1978). Within the personalistic system, illness is believed to be caused by the intervention of an agent who may be supernatural or human. The affected individual is deemed the victim of aggression carried out by the intervenor.

In the Hispanic culture, the general category of personalistic or "unnatural" illness is known as "mal puesto." "Mal puesto" is perceived of as a "product of undue influence one individual exercises over another" (Rubel, 1966, p. 155), and as a social device of coercion and influence. The condition of "mal puesto" may be brought about through the use of bewitchment, magic, or Satanic forces, and is cured by a special healer through the use of countermagic or by removing the source of harm (Madsen, 1973; Rubel, 1966). Common causes of "mal puesto" are family or lovers quarrels, personal jealousy or envy of material possessions. It is thought possible that an illness of "natural" etiology may be further prolonged by "mal puesto." Thus, chronicity of a condition, regardless of its origin, is often associated with the concept of "mal puesto" (Madsen, 1973).

The second explanation for disease causation within the Hispanic culture, the naturalistic medical system, developed from the humoral theory of disease. Humoral pathology, mentioned in literature as early as the sixteenth century

B.C., is based upon the Greek theory of the four "elements" of earth, water, air, and fire. Hippocrates is credited with combining the four elements with the four "qualities" of hot, cold, dry, and moist, to produce the four "humors" of blood (hot and moist), phlegm (cold and moist), black bile or melancholy (cold and dry) and yellow bile or choleric (hot and dry).

Using the naturalistic medical system, in order to maintain good health, it is necessary that the individual possess the correct proportions of each substance according to body type. Pain occurs when one of the substances is deficient, in excess, or not well-mixed throughout the body. Each person is believed to possess a distinct personality type based on the dominant humor within the body, thus the origin of the term "melancholic" individual (Foster, 1978). Medical care based upon humoral pathology consists of examining the natural temperment of the individual, discovering any momentary imbalances, and prescribing special diets, medicines, or purges (Foster, 1978).

The concepts of humoral medicine, translated from Greek to Arabic, were refined and modified by the Persian physician, Avicenna, in the eleventh century. As the Arabs conquered North Africa and Spain, humoral medicine was integrated with European medicine. During the transition to the New World, the classical humoral system lost the concepts of moist (or wet) and dry (Foster, 1953), and was integrated with native Indian health beliefs.

Today, Hispanic folk medical practices are based mainly on a hot-cold dichotomy with health being attributed to a balance of hot and cold forces within the body and illness being the result of excess heat or cold. Actual temperature, as with immersion in hot or cold water, or a more metaphorical explanation such as attributing hot properties to a certain herb, may be used to explain the imbalance and to prescribe treatment. Treatment consists of correcting the imbalance through the use of opposing forces, such as using a "cold" treatment to cure a "hot" illness. The hot-cold dichotomy is also used to classify foods, beverages, and medicines, again according to their effect upon the body, rather than solely upon their physical properties (Clark, 1970; Foster, 1953).

As stated previously, it may be very difficult to discuss the concept of susceptibility to disease as something which the individual may have control over within the context of Hispanic culture. The traditional religious and health beliefs all point to the conclusion that God, an evil spirit, or a "natural" force are dictating the occurrence and/or prevalence of disease. The individual may take precautionary measures (such as prayer, countermagic, or employing the opposing force in the hot-cold dichotomy) to decrease the severity of any impending or existing condition, but there is little evidence to suggest that preventive medicine has been traditionally employed within the Hispanic culture. Preventive medicine, is therefore, a concept which

has been introduced by the scientific medical community and which may be met by resistance if there is credibility to Samora's view that the Hispanic way of life is "fatalistic and even defeatist" (1978, p. 67).

Because of the traditional emphasis on precautionary, rather than preventive, health care measures, and the belief that man does not have control over his own destiny (Samora, 1978), it could be predicted that the Hispanic subjects in the present study might not perceive themselves as susceptible to the development of Type II diabetes mellitus. In the present research, both the perceived susceptibility to diabetes as a result of obesity, and the perceived susceptibility to illness as a result of the power of external forces were explored. The concept of susceptibility to diabetes as a result of obesity was pursued under the individual perceptual variable of susceptibility in the Health Belief Model (Figure 1). The significance of external forces such as powerful others and chance in the perceived susceptibility to disease was explored as a "cue to action" under motivational factors in the conceptual framework (Figure 1).

Perceived Severity

The perceived severity of a condition is dependent upon the perceptions of the present or potential physical limitations to be incurred, the socioeconomic burdens imposed, the individual emotional arousal and the cultural connotation of the diagnosis (Rosenstock, 1974). None of these dimensions pertaining to the obese Hispanic and his/her perceptions of

Type II diabetes mellitus has been discussed in the literature. The present research was, therefore, concerned with an initial attempt to tap the variable of perceived severity within the known cultural context of health and illness.

Baca stated that the Hispanic perceives health status according to how he feels at the present moment. To be healthy is to be pain free and to be active in society. The healthy person is "well-fleshed, the face is full, and the complexion is rosy" (1978, p. 92). Good health is associated with the ability to work hard and to thereby maintain respectability within the community through fulfilling one's responsibilities (Schulman & Smith, 1963).

Illness is not often acknowledged unless it is incapacitating and then it is viewed as misfortune because it prevents the individual from completing social and moral obligations and may result in the loss of respect from family and friends within the community (Clark, 1970). Because of the possibility of social stigma, the potential severity of an illness is often not acknowledged until there is physical or emotional discomfort. If no symptoms occur, (as in most Type II diabetics), no illness is admitted, for illness is viewed by the Hispanic community as expensive, time-consuming, and threatening to economic and social well-being (Clark, 1970).

In order to perceive either susceptibility to or severity of a disease entity, it is virtually imperative that the individual possess some medical knowledge base.

However, this knowledge base is not easy for the Hispanic to attain. Even among Hispanics who are fluent in English, technical terms may be misleading or confusing. The Spanish-speaking Hispanic may never have had any verbal health teaching in Spanish or any simple written instruction made available to acquire basic knowledge (Martinez, 1978). It can also be hypothesized that even the well-informed Hispanic who theoretically understands the severity of diabetes may deny perceived severity in order to avoid facing the negative prospect of possibly disabling symptoms, discomfort, or death.

In conclusion, it can be stated that the Hispanic generally regards health and the ability to be active as very high priorities. This may lead to the denial of the importance of asymptomatic or potential disease both because it does not seem to adversely affect the robust individual and because the diagnosis signifies illness, which may carry a strong social stigma within the culture. As with the concept of perceived susceptibility, it appears unlikely that the individual Hispanic would acknowledge that obesity might be a potential threat to health, especially since the obese person may be culturally defined as being a perfect example of good health. The ability of the present research study to assess the perceived severity of diabetes as a disease within an Hispanic population served to further knowledge about the cultural perceptions of disease and to aid in the development of culturally relevant preventive health teaching methods.

Perceived Benefits

The physical and psychosocial benefits to be incurred from a preventive health measure such as weight reduction must be weighed against possible barriers related to the action itself such as cost, inconvenience, or painful physical or emotional stimuli. If the perceived benefits outweigh the barriers to action, it is highly possible that the individual will initiate action without any outside intervention such as teaching or counseling. If, however, the perceived barriers to action outweigh the benefits, or if both the benefits of action and the barriers to it are costly in terms of material, physical, or emotional consequences, outside intervention may be necessary to instigate action (Rosenstock, 1974).

Both physical and psychosocial benefits to weight reduction have been described in the literature. Craddock (1978) found both increased mortality rates and a specific increase in the incidence of diabetes among the obese, especially those 20% or more overweight. He concluded that physical benefits to weight reduction would include a decrease in mortality to the normal age-correlated rates, a decrease in the incidence of Type II diabetes mellitus, and a lessening of the adverse effects of various chronic medical conditions. Because low-income Hispanics have been shown to have a high incidence of both obesity and Type II diabetes mellitus, it can be assumed that weight reduction

among the Hispanic population would have the same types of physical benefits as Craddock described.

Psychosocial advantages to weight reduction include increased job opportunities, increased ability to obtain attractive clothing (Craddock, 1978), improved body image (Wineman, 1980), increased self-esteem, increased social acceptance and increased desire for social conformity (Rodin, Bray, Atkinson, Dahms, Greenway, Hamilton, & Molitch, 1977). Whether the low-income Hispanic has assimilated the dominant negative American attitude towards obesity as Allon asserted has been occurring among various low-income, ethnic, and religious groups (1973), or whether the low-income Hispanic still ascribes to the traditional view that the "robust" appearance is favored (Schulman & Smith, 1963), determines the potential benefits that Hispanics would perceive as accruing from weight loss.

If the traditional beliefs are still dominant in the individual's perception, weight loss which signifies loss of the "robust" healthy appearance will not be perceived as desirable. Conversely, Hispanics who have been influenced by the mass media or by association with the Anglo culture may agree that weight loss would lead to increased benefits and opportunities both socially and psychologically such as increased job mobility, improved appearance, increased self-esteem, and increased social acceptance by peers within the wider social environment. The present research explored which of these perceptions regarding the physical and/or

psychosocial desirability of weight reduction are held by the low-income Hispanic population.

Perceived Barriers

Regardless of how many benefits the individual may perceive as the potential result of weight loss, the positive reward symbolized by the benefits must be weighed against the perceived barriers related to the action of weight reduction itself. In order for weight loss to actually occur, the barriers must be reduced to a minimum so that the benefits clearly outweigh the barriers.

Perceived barriers related to weight reduction include the perceived cost of special diets, the inconvenience of special and/or unusual meal preparation, and potentially painful emotional or physical stimuli. Oscanova and Hejda (1975) stated that a high protein, low calorie diet is far more expensive than a high fat and high carbohydrate diet. Although no research has explored the perceptions of diet cost among low-income persons, it can be assumed that the mass media emphasis on special dietetic foods and on special weight loss programs such as Weight Watchers, which are commonly thought to be expensive, may lead to a perception that dieting requires extra expense.

For a family accustomed to a diet high in refined carbohydrates and in fats and low in fresh fruits and vegetables, as is the typical Hispanic diet (Williams, 1974), having one member on a special diet may be considered a major inconvenience to the family's functioning. This may be especially

true if the dieting woman is expected to continue cooking the traditional foods for her husband and children. In addition, the typical low calorie, high protein diet consisting of bland ingredients is often unappealing and foreign to the Hispanic would-be dieter. Thus, both the perceived cost and the inconvenience of food preparation may be significant barriers to weight reduction among the Hispanic population.

Painful emotional or physical stimuli related to weight reduction efforts may also be barriers to weight loss. A variety of psychiatric researchers concluded that the obese individual may maintain a balanced emotional status by the mechanism of overeating (Freed, 1947; Crisp & McGuinness, 1976; Simon, 1963; Hamburger, 1951; Bruch, 1957; and Stunkard, 1976). These researchers cautioned against weight reduction attempts in individuals who use their obesity as a protective mechanism. Other studies emphasized that psychiatrists would naturally be exposed to a higher incidence of psychological pathology among obese individuals than the general practitioner (Silverstone & Solomon, 1965; Silverstone & Lascelles, 1966; Silverstone, 1973; Shipman & Plesset, 1963; and McCance, 1961). Craddock (1978) concluded that individuals who exhibit symptoms of significant emotional disturbances related to obesity should not be encouraged to undertake weight reduction without psychiatric consultation. However, the majority of obese individuals who present themselves to a primary health care provider for the problem of obesity

can reduce safely without fear of precipitating serious emotional reactions. These individuals, who are not psychologically disturbed, may eat when challenged with the minor stresses of everyday life, instead of, or in addition to, using other coping behavior such as smoking, drinking alcohol or caffeine or biting the nails. Craddock (1978) characterized these persons as often being hypersensitive individuals whose reaction to life is frequently passive rather than active.

The "hypersensitivity" Craddock (1978) referred to is related to the theory that physical or emotional stimuli affect some individuals more than others. It has been hypothesized that a greater than normal response to external stimuli among some individuals is the cause of overeating and weight gain (Rodin, 1975). Rodin and Slochower (1976) postulated that external reactivity is a general response style, acquired either biologically or through early environmental influences, which easily affects weight when salient cues are present. The hyperresponsive individual is readily affected by external food cues such as sight, smell, or taste of food whether or not actual physiological hunger is present. Why some hyperresponsive individuals become obese, while others can control their impulses is not known, but hyperresponsiveness to food cues has been found among normal weight as well as obese persons (Rodin & Slochower, 1976). It is not known to what extent emotional or physical response signals contribute to obesity among the Hispanic population.

In conclusion, the perceived cost of special diets, the inconvenience of special food preparation, and potentially painful physical or emotional stimuli are barriers to weight reduction which have not been researched within the Hispanic population. The present research attempted to ascertain the extent to which some of these potential barriers to weight reduction are perceived by middle-aged, low-income obese Hispanics.

Modifying Factors

In addition to the individual perceptual variables of susceptibility, severity, benefits, and barriers defined above, Becker (1974) postulated that there are a variety of modifying factors which may alter an individual's perception of the threat of a disease entity (Figure 1). For the purpose of this study, demographic, developmental, and knowledge related modifying variables were selected.

The demographic variables of age and sex were determined for each subject in order to identify whether there were age or sex-related differences in relation to the individual perception variables. The particular stage of family development (Duvall, 1977) and prior knowledge of and contact with diabetes within the family unit may also affect the individual's perceptions. Therefore, family developmental stage and family history of diabetes were determined for each subject. In summary, the modifying factors investigated in this study were age, sex, family developmental stage, and family history of diabetes.

Motivational "Cues to Action"

In addition to factors which modify the individual's perceptions of the threat of disease, there are motivational "cues to action" which may trigger the individual to preventive action in a balanced benefit-barrier situation or when perceived barriers outweigh perceived benefits (Figure 1). Among the Hispanic population, there are several sources of "cues to action"; the coercion of extra-human forces through propitiatory actions, the lay practitioners who utilize folk or traditional medicine, and the scientific health care practitioners (Samora, 1978).

Extra-human forces, whether God, saints, or spirits, are called upon when the individual perceives that a potential or actual illness may be severe. Ritualistic propitiatory actions; promise-making, visiting shrines, and offering medals, candles, and/or prayers are undertaken in the hope of mitigating the potentially negative influences of the illness (Samora, 1978). Nall and Speilberg (1978) hypothesized that the extent to which Hispanics adhere to these traditional religious rituals might inhibit their acceptance of scientific medical treatment regimens. Thus, the Hispanic individual who believes in the power of extra-human forces might be more inclined to call upon them rather than to seek or believe in scientific health care practices.

Lay practitioners are generally divided into two categories; family and friends being the first avenues of help for the suffering individual, and, if their intercession

fails, the folk specialist, who is considered to possess a more detailed knowledge of folk medicine than the ordinary layman (Samora, 1978). The folk specialist or "curandero" may possess special healing powers considered a gift from God in addition to specialized knowledge about folk illnesses (Baca, 1978; Dorsey & Jackson, 1976).

A number of benefits of using the folk health system are acknowledged by many Hispanics; services are readily available and accessible without transportation or translation difficulties, the "curandero" is usually personally acquainted with the person, uses familiar medicines and caring behaviors, is less expensive, and provides a ready local support if the individual suffers any further discomfort or side effects (Leininger, 1978). The whole social milieu between "curandero" and client within the Hispanic community fosters an atmosphere of warmth and caring which is often absent if the Hispanic individual seeks health care from a scientific practitioner who is unfamiliar with the culture. By offering a treatment modality rooted in the power of prayer and faith, the "curandero" may function as an intermediary between the extra-human forces and the individual Hispanic (Dorsey & Jackson, 1976).

In contrast, the scientific health care practitioner may be perceived by the Hispanic as relying upon a body of specialized technical knowledge. Physicians and nurse clinicians may be consulted by the Hispanic if traditional methods of treatment have failed to alleviate the problem.

Several areas of conflict exist between the lay practitioner and the scientific practitioner. The lay practitioner is consulted for advice only, and does not give "orders." Scientific practitioners who provide "cues to action" to Hispanics must be careful not to give orders or to assume authoritarian roles, which, especially outside the perceived domain of medical authority, may be perceived as insults and will not be honored (Clark, 1970). The positive role which nursing can assume in providing motivational "cues to action" is further discussed under nursing theory.

As mentioned under perceived susceptibility, many Hispanics possess a fatalistic world view, which precludes belief in any motivational "cues to action." For these individuals, illness is the result of chance occurrences or fate and there is nothing which can be done to prevent or to alleviate suffering (Samora, 1978).

In summary, the motivational "cues to action" which may prompt the Hispanic individual to institute preventive health care are belief in the power of extra-human intervention, and the therapeutic advice of lay or scientific health care practitioners. The present study explored the perceived value of these "cues to action" among the Hispanic population as well as investigating the extent to which the Hispanic population rejects the power of "cues to action" and holds a fatalistic world view.

Nursing Theory

According to the preventive Health Belief Model, if the perceived benefits outweigh the barriers, the individual will initiate preventive action without any outside intervention. If, however, there is an equal benefits-barriers situation, or if the perceived barriers outweigh the benefits, therapeutic intervention is necessary for preventive action to occur (Figure 1). It is in this situation that nursing can interface as a motivational "cue to action" to provide support for preventive health care.

Nursing, because of its emphasis on the caring, nurturing, and counseling aspects of health care, is in the unique position of potentially offering the Hispanic individual the most culturally relevant mode of scientific health care. The nurse clinician caring for the Hispanic individual may combine the knowledge gained from advances in scientific theory with the caring attributes Hispanics admire in the traditional lay practitioner. Thus, sensitive nurses may circumvent the authoritarian stereotype of scientific practitioners and may assume a caring role Hispanics feel comfortable with (Clark, 1970).

> Cultures that have been traditionally dependent upon kinship groups for caring will expect more humanistic kinds of nursing care practices and less scientific, technological care-giving services. (Leininger, 1978, p. 37)

Although stereotyped or simplified formulas have been developed for assessing the needs of culturally diverse clients, theoretically sound constructs based on a

consideration of the cultural milieu of the client in conjunction with his/her physical, psychological, and social attributes have been lacking (Leininger, 1978, p. viii). Leininger has been the main proponent of the development of the subfield of transcultural nursing since the mid-1960s. Trans- or cross-cultural nursing seeks to utilize anthropological constructs to further enhance the nurturing role of the nurse working in a different cultural context. Culture has been defined as

> the sum total of the learned ways of doing, feeling, and thinking, past and present, of a social group within a given period of time. (Murray & Zenter, 1976, p. 382)

Leininger defined transcultural nursing as

> focusing upon a comparative study and analysis of different cultures and subcultures of the world with respect to their caring behavior; nursing care; and health-illness values, beliefs, and patterns of behavior with the goal of developing a scientific and humanistic body of knowledge in order to provide culture-specific and culture-universal nursing care practices. (1978, p. 8)

Culture-universal traits are those facets of behavior found universally in all cultures, such as the concept of caring. Culture-specific behaviors refer to the manner in which a concept such as caring is expressed by a particular cultural group, for example through the use of touch (Leininger, 1978). Nurses working with other cultures naturally tend to utilize their own outside or "etic" cultural perspectives, rather than the perspectives of the client, in planning and instituting care. This produces what Leininger termed "gaps, or cultural discrepancies in

health norms" (1978, p. 77). To reduce this ethnocentric tendency, Leininger advocated the examination of the cultural life of a people from their own perspective, or "emic." Implicit to this approach is the presumption that people can articulate their own perceptions. Thus, similar to the preventive Health Belief Model, data are gathered from the subjective views of the subjects rather than the observer (Leininger, 1978).

Leininger developed a model of transcultural or ethnonursing based on the study of the individual's perceptions. The individual perceptions, modifying and motivating factors of the preventive Health Belief Model are analagous to Leininger's discussion of the major sources from which ethnonursing is derived, which include health-illness caring system beliefs, values, and caring practices, and social structure features of the culture (1978, p. 39). The similarities between the preventive Health Belief Model and Leininger's model for transcultural nursing can be utilized to incorporate the study of health beliefs with transcultural nursing theory within the present research (Figure 2).

Leininger mentioned a number of caring behaviors or constructs which nursing can utilize if preventive health care cannot be initiated by the individual. Those relevant to weight reduction include stress alleviation measures, health instruction, and health consultation. Because these nursing interventions are based upon culturally appropriate caring concepts, there is a greater likelihood that they

Preventive Health Belief Model	Transcultural Nursing Model
I. Individual Perceptions	I. Health-illness caring system
a. perceived susceptibility	a. beliefs
b. perceived severity	b. values
c. perceived benefits	c. norms
d. perceived barriers	
II. Modifying Factors	II. Major Social Structure Features
III. Motivational "Cues to Action"	III. Role caring practices

Figure 2. Comparison of Health Belief Model and Transcultural Nursing Model.

may be effective with the Hispanic population (Figure 1). These interventions do not imply a passive audience, but rather encourage an active self-management approach to weight loss and diet control (Ormiston, 1980), in which the nurse serves in an instructional and supportive, rather than authoritarian, role.

It can be concluded that nursing intervention for the obese low-income middle-aged Hispanic should be based upon culturally acceptable methods of interaction and should emphasize the importance of individual responsibility and self-care as much as possible while still considering cultural determinants of behavior such as belief in powerful others or in chance or fate.

Summary

In this chapter, the preventive Health Belief Model with its individual perception variables of susceptibility,

severity, benefits, and barriers, and the modifying and motivational factors which may affect individual perceptions, were examined and combined with cross-cultural nursing theory to develop a conceptual framework (Figure 1). This framework demonstrates the interrelationships of the variables and their potential contribution to cross-cultural nursing research, and provides a rationale for the present research.

CHAPTER III

THE LITERATURE REVIEW

Overview

In the review of the literature, studies relevant to the areas of preventive health care beliefs and/or behavior are presented. The studies which utilized Rosenstock's (1974) Health Belief Model in its entirety were reviewed, as well as research which explored one or more of the perceptual variables of susceptibility, severity, benefits, or barriers. Since few of these studies focused upon the Hispanic population, the interaction between the traditional Hispanic health belief system and modern Hispanic health care practices was explored under a separate heading of "Health Beliefs and the Hispanic." The review of the literature provides a review of material which enhances the statement of the problem and the conceptual framework, Chapters I and II.

The Preventive Health Belief Model

Health beliefs manifested by adults reflect the social and cultural background of the individual. These individual beliefs or perceptions are influenced to varying degrees by the cultural origins of the person. Spector stated that

"meanings attached to the notions of health and illness are related to the basic, culture-bound values by which we define a given experience and perception" (1979, p. 75).

This study was concerned with possible influences that Hispanic cultural values bear upon individual perceptions about obesity and its role as a precursor of diabetes. Because the Health Belief Model presumes that individual perceptions are unique, valid, and of importance, these perceptions are the basis for the present research. However, individual perceptions cannot be explored within a vacuum without considering the influence which the cultural heritage and socioeconomic pressures may exert upon preventive health beliefs and/or behaviors.

An ethnic or cultural group "refers to any continuing group or division of mankind" (Saunders, 1954, p. 107) which shares social experiences, values, norms, attitudes and a cultural identity. These shared attributes all influence health beliefs and behaviors which may be unique to the ethnic or cultural group--"ethnic group labels are . . . indicative of socio-cultural differences" (Suchman, 1964, p. 321). Suchman stated that as the cultural groups values and experiences change, the individual within that group will also modify his/her behavior and response to health and illness.

In order to understand more fully the individual perceptions of the Hispanic population under study, the literature pertaining to the Hispanic health beliefs and behaviors

was reviewed. In addition, an overview of research conducted using the preventive Health Belief Model was presented as well as literature related to each of the variables of the Health Belief Model.

The Health Belief Model and Preventive Health Behavior

The Health Belief Model was originally developed to explain preventive health behavior. Later, the model was modified to account for illness behavior and sick role behavior (Kasl & Cobb, 1966). As the present study was concerned with the perceptions of non-symptomatic obese individuals, only the literature pertinent to the preventive Health Belief Model was reviewed.

Seven early studies which utilized the Health Belief Model were identified by Rosenstock (1974). These consisted of four retrospective and three prospective studies. The value of the retrospective studies is diminished by the nature of retrospective research. Retrospective analysis a priori suffers from the threat of cognitive dissonance (Festinger, 1957). It is often impossible to decipher retrospectively whether a belief actually preceded an action or whether statements to that effect are made in order to achieve consonance with later behavior. It is with the acknowledgment of the threat of cognitive dissonance to the validity of retrospective study that the following retrospective studies were reviewed.

The most thoroughly documented retrospective studies were conducted by Hochbaum (1958) and Kegeles (1963a). Hochbaum attempted to identify the underlying factors which cause individuals to seek a chest x-ray to detect tuberculosis. A random sample of 1,200 adults were interviewed in Boston, Cleveland, and Detroit. Two indices of susceptibility were examined; whether the individual believed that he might contact tuberculosis, and whether the individual believed that a person might have tuberculosis in the absence of all symptoms. The perceived benefits of early detection were also studied. Open-ended questions and pictures were used to gather data on the individual's experiences with chest x-rays over the past 7 years.

In the original study, no mention was made of the type of statistical analysis used or the significance of the results. Hochbaum found that four out of five persons who believed in susceptibility to tuberculosis and the benefits of x-ray had taken preventive action, while four out of five without the beliefs had not taken any action. Susceptibility was found to be a more significant motivator to action than benefits.

In conclusion, Hochbaum discussed both motivating factors and possible barriers to action. The three cities utilized for the study had all participated in varying degrees of tuberculosis case-finding and educational campaigns. The residents of Cleveland, in particular, were exposed to an extensive mass-media campaign during the course

of the study. Unfortunately, Hochbaum did not categorize his data geographically to allow for comparison of the effect of the motivating factor of publicity upon the variables of susceptibility and benefits.

Although he did not directly measure perceptions of barriers to x-ray, Hochbaum mentioned the existence of possible barriers which might affect utilization, such as cost, access, and time to obtain an x-ray. Though the sample size was large and randomly selected, the study did not measure all four variables of the Health Belief Model and suffered from methodological and statistical deficiencies.

Kegeles (1963a) measured the perceived susceptibility, severity, benefits, and barriers to preventive dental check-ups or prophylaxis in the absence of symptoms for members of a pre-paid dental plan. Open-ended interviews were conducted with two samples; all 50 supervisors and a random sample of 380 workers at a factory in New York. Results showed that persons who felt themselves susceptible to dental disease, who believed in the seriousness of dental problems, who believed in the benefits of preventive dental care, and who exhibited few barriers to care (fear of pain, anxiety, negative perception of the dentist) made the most preventive visits.

Kegeles concluded that programs were needed to increase the feelings of susceptibility and severity of dental disease and to decrease barriers to care. However, a major barrier to preventive health care was inherently absent as this was a pre-paid plan. The study suffered from a high

attrition rate, as only 77 interviews were completed, and data were not presented separately for the convenience and random samples.

Rosenstock (1974) concluded that, although the retrospective studies were not convincing evidence of the viability of his model, they were indicative of a positive trend. Rosenstock, however, agreed with Festinger (1957) that the value of retrospective research may be diminished by cognitive dissonance.

Two-step prospective studies allow a belief to be acknowledged at one point and actual behavior to be measured later. Three such studies were conducted using the Health Belief Model; Kegeles (1963b); Leventhal, Hochbaum, and Rosenstock (1960); and Kirscht, Haefner, Kegeles, and Rosenstock (1966).

Kegeles (1963b) followed up his first dental care study 3 years later by reinterviewing the same factory workers and a control group of 450 other workers. The restudy questionnaire explored the three most recent dental visits of the subjects. In contrast to the first study, perceived severity and perceived benefits were not significantly related to behavior. Orientation to preventive care was found to have decreased from the first study, 56% to 45%. Kegeles concluded that the population retained similar health beliefs and behaviors over time, as 77% of the original respondents displayed the same orientation in both studies. This second

study of Kegeles had a 79% return rate which provided a more solid basis for analysis than most of the other studies.

Leventhal et al. (1960), studied the threat of influenza before, during, and after the Asian flu epidemic of 1957 in two cities. The study design called for flexible interviews and reinterviews of 200 families in each city. However, the epidemic hit the cities before the first interview, rendering only 86 usable interviews from both cities. From this very small sample, it was found that those persons who believed in susceptibility to and severity of the disease took preventive measures (immunization) to avoid influenza, while those who rejected susceptibility and severity did not receive immunizations. The results were statistically significant at the .01 level, but the sample was too small and too regionalized to allow any generalizations to be made. It is interesting to note that the vast majority of the total (non-sample) population in both cities perceived neither susceptibility to or severity of the influenza, and that over 90% of the families made no preparation for the epidemic.

The most comprehensive study using the preventive Health Belief Model was a prospective study by Kirscht et al. (1966) which analyzed beliefs and behaviors of 1500 persons in 1963 and followed with a repeat survey of 589 persons 15 months later. Data were collected on cancer, tuberculosis, tooth decay, and gum disease from a stratified, multi-stage probability sample of adults in 70 geographic areas of the United

States. Personal interviews were conducted and information gathered on toothbrushing behavior over the past day, dental visits over 3 years, preventive medical checkups over 5 years, and tuberculosis and cancer screening over 10 years.

Complete data were gathered on only 297 persons. Those individuals who took one preventive action were found to be more likely to engage in other preventive health care behavior. However, there were no significant correlations between susceptibility, severity, or benefits and the four types of preventive action.

The subjects were also compared for actions in relation to sociodemographic factors. It was found that those persons with higher income, education, and job status were more likely to undertake preventive actions, even relatively inexpensive ones such as toothbrushing. Kirscht et al. (1966) noted the similarity of these findings to those of other studies and concluded that more than knowledge and an ability to pay are included in preventive health behavior. They reiterated the common conclusion that persons at varying socioeconomic levels possess different socially defined views of what is appropriate behavior, and that these views determine what actions they will manifest.

Rosenstock advanced the hypothesis that the lack of correlaton between the Health Belief Model variables and actions in the Kirscht et al. (1966) study may have been related to the absence of direct stimulus to take preventive action. The other studies cited incentives to seek

preventive care such as accessibility (Hochbaum, 1958) or prepaid health plans (Kegeles, 1963a, 1963b). In contrast, Kirscht et al.'s (1966) nationwide sample had not been exposed to intensive health teaching and were not promised the availability of free or easily accessible resources. Thus, Rosenstock (1974) concluded that cues to action at the time of the earlier studies may have been a significant variable which affected later behavior.

An alternative explanation for the lack of correlation between beliefs and subsequent action in Kirscht et al.'s (1966) study might be the variable of barriers. The studies which provided incentives for preventive health behavior had artificially removed what are often formidable barriers (cost, accessibility) to the general population who do not have prepaid insurance. Researchers such as Kegeles (1963a, 1963b) mentioned personal barriers such as fear and anxiety, but did not acknowledge that the majority of the population does not have access to prepaid preventive health care.

In summary, it cannot be concluded definitely that these early studies bore conclusive evidence of a relationship between the variables identified in the Health Belief Model and subsequent health behavior. In general, the data revealed a relationship between susceptibility and behavior, and between benefits and behavior, but not between severity and behavior. As stated above, evidence was found for a relationship between several personal barriers and behavior,

but many of the crucial structural barriers were removed from the studies.

There were high attrition rates from most of the samples, with even the nationwide study (Kirscht et al., 1966) presenting data on only 20% of the original sample. Due to small sample size and regionalization of many of the studies, it is difficult to make generalizations about preventive health behavior from these studies. Also, none of these studies was concerned with ethnic identity or weight reduction as a preventive health behavior which may limit their applicability to the present research study. The studies which were reviewed all date from the late 1950s to mid 1960s and thus may reflect attitudes or behaviors which are no longer prevalent in American society. There were no recent studies found which utilized the preventive Health Belief Model as Rosenstock (1974) had devised it.

Motivational and Modifying Variables in Relation to the Health Belief Model

The lack of a motivational variable was the most important criticism of the early Health Belief Model (Antonovsky & Kats, 1970). Haefner and Kirscht (1970) employed a strong incentive or motivator to promote changes or modifications in health behavior. One hundred sixty-six paid volunteers were tested in an experimental laboratory setting to determine the relationships between beliefs, experimental treatments, subsequent beliefs, intentions to action, and actual behavior. Three experimental groups shown films on cancer,

heart disease, and tuberculosis, and a control group, were tested immediately after the sessions and with a follow-up questionnaire 8 months later.

Statistically, it was found that perceived susceptibility was raised significantly in the experimental groups as were perceived benefits. Little change occurred in perceived severity as a result of the intervention, perhaps due to the fact that all three diseases were initially perceived as being quite serious.

The follow-up survey revealed that those persons in the experimental groups had obtained more preventive checkups. However, in an analysis of personal living habits, there was no significant change in preventive behaviors at home among the experimental groups. Apparently, changing the person's beliefs about health resulted in the adoption of preventive health measures requiring occasional effort such as checkups, but did little to alter well-established routines of diet and exercise. It is interesting to note for the present study that Haefner and Kirscht (1970) found that the personal health behavior most difficult to control was the limiting of calories.

Several researchers (Suchman, 1964; Langlie, 1977; Bullough, 1972) explored dimensions not mentioned in the original Health Belief Model which were valuable to the present researcher's study of obese low-income Hispanics. These variables were the ability to control health matters personally versus a resignation to the power of external

forces, and confidence in modern medical practices versus folk practices. They were included in the present conceptual framework under the heading, motivational "cues to action."

Suchman (1964) sought to define the underlying causes of the resistance of lower socioeconomic and ethnic groups to either accept control over their own health or accept scientific health care. In 1960-1961, personal interviews were conducted with a representative cross-section of adults in New York City who were from six different backgrounds; Peurto Rican, Black, white Protestant, Jewish, Catholic, and Irish Catholic. Follow-up in-depth interviews on 1,900 persons were conducted with a completion rate of 90%. Results were obtained using Guttman scale analysis techniques.

The greatest contrast was found between the Puerto Ricans and the white Protestants and Jews. The Puerto Ricans were the most skeptical about medical care, had the least preventive health behavior, and the least knowledge of disease. As a result of the study, Suchman proposed a parochial-cosmopolitan dichotomy in which the parochial individual (characterized as ethnocentric, having traditional family structure, and valuing friendship and solidarity within a small group) is more likely to utilize a nonscientific popular or folk health system, while the cosmopolitan individual (characterized as progressive, open, and individualistic, with frequent interaction with non-kin) tends to hold a scientific point of view and accept a modern medical system. Suchman (1964) concluded that although ethnic and social

class differences both contributed independently to the parochial-cosmopolitan dichotomy, the dichotomy itself was the most important factor in determining health orientation.

In Suchman's (1964) study, the Puerto Rican population (a subset of the Hispanic population) exhibited the most parochial health behavior. Thus, this finding was of importance in predicting whether the present Hispanic population under study exhibited traditional or so-called "parochial" behavior. Adherence of the Hispanic community to traditional folk medical practices was explored further in the present literature review under "Health Beliefs and the Hispanic."

Langlie (1977) explored the relationship of preventive health behavior to several modifying and motivational variables including socioeconomic status, cosmopolitan versus parochial orientation, ability to control one's own life versus a belief in the power of external forces, and belief in the value of health. Langlie (1977) concurred with Rosenstock's (1974) hypothesis that the preventive Health Belief Model would have greater applicability to middle-class individuals who exhibit goal-oriented, future-directed behavior, than to low-income individuals who supposedly opt for immediate gratification.

A systematic random sample of the adult population of Rockford, Illinois were questioned by mail with a 62% return rate of 383 subjects. Preventive health behaviors measured by Langlie included driving habits, smoking, exercise, nutrition, and preventive medical and dental checkups.

Perceived susceptibility, benefits, and barriers were measured. Severity was excluded due to earlier failure to prove its significance in studies of preventive health behavior.

Langlie's findings were generally consistent with the predictions based on previous work with the preventive Health Belief Model in terms of sociodemographic data. Individuals who engaged in preventive health behavior tended to be of high socioeconomic status, to interact frequently with others, to have positive attitudes towards scientific health care providers, to believe they could control their own lives, to be older and female. Conversely, those persons who exhibited few signs of engaging in preventive health behavior tended to originate from the parochial group and were low-income. Langlie, however, found no substantiation for the accepted belief that high perceived susceptibility led to increased preventive health behavior (Rosenstock, 1974).

Researchers such as Rosenstock (1974) and Langlie (1977) concluded that the person of low-income and/or ethnic origin is less likely to engage in preventive health behavior than the middle-class white. These findings have significance for the present research in that this study population was both low-income and of ethnic origin and may therefore prove to be resistent to preventive health care measures.

The underlying factors causing the positive relationship between socioeconomic status and the utilization of preventive health care services have remained unclear. Bullough (1972) hypothesized that the low-income individual was beset by social alienation barriers; powerlessness, hopelessness, and/or social isolation which hindered preventive health care behavior.

Bullough (1972) utilized Seeman's (1959) definition of alienation to explore the effect that social alienation has upon preventive health behavior. Seeman's definition of powerlessness as the "expectancy or probability held by the individual that his own behavior cannot determine the occurrence of the outcomes or reinforcements he seeks" (1959, p. 783) is similar to Langlie's (1977) definition of the parochial individual as one who feels helpless to control the events of his life, and is related to the concept of the power of external forces over the individual discussed in the conceptual framework.

Bullough (1972) interviewed 806 low-income black, Anglo, and Mexican-American post-partum women in Los Angeles in 1971 regarding their preventive health care beliefs and behaviors in the areas of prenatal and post-partum care, well-baby checkups, family planning, immunizations, and dental care for themselves and their children. Bullough (1972) found that the three facets of alienation were significant in relation to the obtaining of preventive care for children and prenatal and post-partum care for the mothers

and highly significant in relation to family planning. Financial barriers appeared to hold more significance in relation to dental care than the concept of alienation.

Ethnic differences were found as the Mexican-American (Hispanic) subjects felt less powerlessness and less hopelessness than the Black women. Bullough hypothesized that this finding may have been caused by lower levels of segregation and discrimination for the Mexican-American population or by the fact that it is the less alienated Mexican who migrates to the United States. Bullough summarized by advocating a correlation between the "culture of poverty" concept and feelings of alienation among minority populations

> Both poverty and a minority ethnic identity relate to these feelings of alienation, and the attitudes are in turn related to a low level of utilization of preventive care. (1972, p. 358)

Thus, Bullough (1972) reiterated the assertion that poverty is negatively related to utilization of preventive health care and postulated the additional psychological barrier of alienation as a further explanation of why low-income and ethnic populations do not readily seek preventive health care. Bullough's study provided further emphasis of the fact that low-income obese Hispanics may not be prone to utilizing preventive health care measures such as weight reduction. Although the present research was not directly measuring the concept of social alienation, powerlessness and a sense of hopelessness were included under the concepts of perceived susceptibility and motivational "cues to action."

Additional research related to these concepts was reviewed under "Health Beliefs and the Hispanic."

The review of the literature on the preventive Health Belief Model and preventive health behaviors in general revealed some identifiable relationships between perceived susceptibility, perceived benefits, and perceived barriers (both financial and psychosocial) and preventive health behavior. The low utilization of preventive health services by low-income and/or persons of ethnic origin was documented with tentative proposals made as to the cause of this phenomenon. The literature review did not reveal specific research concerned with beliefs about weight reduction as a preventive health measure against the development of diabetes mellitus (Type II). Because a correlation has been identified between health beliefs and health behaviors, the preventive Health Belief Model was employed in the present study to investigate the perceptions of low-income obese Hispanics regarding weight reduction and the perceived threat of diabetes. The literature review documented low utilization rates of preventive health services among low-income and/or ethnic populations. Therefore, it is important to investigate perceived barriers to preventive health care behavior among low-income Hispanics.

The following section reviews literature specifically related to the main perceptual variables of susceptibility, severity, benefits, and barriers.

Perceived Susceptibility and Perceived Severity

Within the Hispanic culture, the belief persists that "God . . . is omnipotent" and man "subject to His judgment and justice" (Samora, 1978, p. 66). This strong adherence to the beliefs that God and/or spirits are in control of man's destiny and may bring illness down upon man for testing or for punishment may profoundly decrease the Hispanic individual's ability to feel personally responsible for disease prevention. Even the "naturalistic" medical system of balancing "humors" within the body is concerned primarily with repairing imbalances rather than preventing them. The traditional Hispanic medical belief system, based upon Greek, Catholic, and indigenous practices was reviewed in the conceptual framework and was not repeated in the literature review.

Perceived susceptibility and perceived severity both contribute to the perceived threat of a disease entity. In order to perceive something as a threat, its future ramifications must be acknowledged. Thus, for a person to acknowledge that obesity is a threat to his/her future health, he/she must admit that obesity may lead to future complications, such as Type II diabetes mellitus. Acknowledgment of this threat may be difficult to elicit within the Hispanic population because the Hispanic perceives health status according to how he feels at the present moment. To be healthy is to be pain free and to be active in society, to be well-fleshed, with a full face (Baca, 1978). Thus, obesity may

be accepted as a sign of good health, rather than as a disease precursor.

Various researchers have documented the concept of self-image among different Hispanic populations. Schulman and Smith (1963) studied the Spanish-speaking villagers of northern New Mexico and southern Colorado and inquired into the meaning of health, both physical and mental, within that population. The concept of health was found to be correlated with perceived normality and with an orientation to present time. The healthy person was perceived as a mature adult with family, job, and social obligations to fulfill within the community.

Schulman and Smith found that ability to engage in a high level of physical activity, absence of pain, and a well-fleshed robust body with a rosy complexion were thought to signify health. "Even a fat man, if he stands erect, and 'carries his weight well,' is considered healthy" (1963, p. 229). Weight gain after an illness was considered a good indication of recovery. The authors noted, however, that the morbidly obese person was a rarity in that impoverished area. "Fatness" was the definition for excess poundage which could be removed easily by exercise, not for obesity as defined for the present research. The villagers could not readily differentiate between the words "robust" and "fat," perhaps due to the lack of significant obesity within that Hispanic subgroup. The association of health

with a robust, well-fleshed appearance was found among both men and women.

Schulman and Smith's (1963) portrayal of the healthy, Spanish-speaking individual as active, robust, and without pain was based on a specific subset of the Hispanic culture, persons who were culturally non-assimilated and whose families had lived in rural isolation for 3 centuries. It is not known whether this self-perception of health can be applied without modification to Hispanics presently living in integrated communities in the Midwest.

Ziegler (1980) used Schulman and Smith's study to explain the apparent lack of a social stigma associated with obesity within a midwestern Hispanic population (migrants in Mason, Michigan, 1979). It can be hypothesized that the tendency to associate the robust, physically active person as being full of health may have become distorted within present Hispanic culture to include those persons of more than robust or modestly overweight proportions. Thus, morbid obesity might not be perceived as potentially harmful if the person remained relatively active. Likewise, perceived loss of physical strength, or tiredness, might carry more negative connotations in regard to health than mere obesity. The overweight person might be perceived to have the benefit of carrying a little extra weight to protect himself/herself in case of illness, rather than being perceived as being at risk for developing chronic illnesses such as diabetes. In researching nutritional status in

migrants in mid-Michigan, Ziegler (1980) found no voluntary mention of dieting and few references to exercise, other than physical work, among that Hispanic population.

Poor or negative self-image may also affect Hispanics. In a study of 280 Hispanics, Dworkin (1965) found a widespread self-characterization among both foreign and native-born Hispanics as being "short, fat, and dark." Overall, Dworkin found that the Hispanics who were still migrating seasonally appeared to have better self-images than the settled Hispanics.

Gecas (1973) described two components of self-concept which have been measured; the evaluative--or the individual's feelings about himself (such as Dworkin's study), and the substantive--one's ideas about oneself which constitute an identity. Gecas stated that most previous research on Hispanics stressed the evaluative component, studies on self-attributes such as emotions and laziness, and had little conclusive data to report. Gecas stressed the importance of the categorical substantive element of self-concept, which allows for identity within a social structure. He studied the self-concepts of members of 85 rural poor families in a farming valley in Washington state. Both migrant and settled Hispanics were interviewed. Similar to Dworkin's evaluative study, Gecas found that migrants tended to be more positive in indices of moral worth, competence, self-determination, and altruism.

Gecas concluded that the migrant Hispanic may still hold strong emotional and cultural ties to the traditional culture, and be relatively untouched by the dominant American values. The settled Hispanic, however, must live simultaneously in two worlds, exposed to new expectations and frames of reference regarding diet and the importance of a slender figure, while not possessing the resources, financial and otherwise, which are perceived as necessary to overcome the barriers to weight reduction inherent within the ethnic identity.

Thus, the research has shown that the Hispanic individual may not perceive the potential threat of his/her obesity as a precursor to a disease such as diabetes mellitus (Type II) because the obesity is confused with a "robust, healthy" appearance. The possibility also exists that the settled Hispanic in mid-Michigan is beset by a negative self-image as a result of conflicting values between the traditional image Schulman and Smith (1963) described and the prevalent American emphasis on slenderness.

Perceived Benefits and Barriers to Weight Reduction

The studies reviewed under perceived susceptibility and perceived severity have shown that it may be difficult for the Hispanic individual to perceive himself/herself as being at risk due to obestiy. As a consequence, it may also be difficult for the obese Hispanic to value the benefits of

weight reduction as more significant than the barriers to reducing.

The general literature described both physical and psychosocial benefits to weight reduction. Craddock (1978) detailed both the increased mortality overall and the specific increase in incidence of diabetes among the obese, especially those 20% or more overweight and concluded that physical benefits to weight reduction would include a decrease in mortality to the normal rates, a decrease in the incidence of Type II diabetes, and a lessening of the adverse effects of various chronic medical conditions (Craddock, 1975).

Potential psychosocial advantages to weight loss include increased job opportunities, increased ability to dress fashionably, decreased shyness (Craddock, 1978), improved self-esteem, and an increased desire for social acceptance and social conformity (Rodin et al., 1977). Rodin et al. (1977) studied 15 males and 129 females in a weight reduction clinic to determine what factors were associated with successful weight loss. A personality inventory for self-esteem and a social acceptance scale were used to measure the variables. Because obesity is stigmatized in western society (Allon, 1975), Rodin postulated that self-esteem would be related to weight loss.

However, successful weight reduction was not found to be related to the concept of self-esteem. Success was significantly correlated to the concepts of desired social

conformity and social acceptance. These results showed that individuals who were strongly aware of western social norms of slenderness were thus motivated to conform and increase their social acceptability through weight reduction.

The question remains of whether Hispanics who are "settled" in mid-Michigan ascribe to the social values which led the individuals in Rodin et al.'s study to be successful in weight loss, or whether they adhere to the more traditional concept of the healthy individual as "robust." If they adhere to the traditional values, it is not likely that they will perceive positive benefits to weight reduction, and thus it may be futile to attempt to include them in scientifically based weight reduction programs. However, if they have acculturated to the prevailing attitudes presented in the media about the need for weight reduction, then it may be valid to include these Hispanics in weight loss programs tailored to accommodate their dietary preferences. The present research attempted to validate the need for ethnically relevant weight reduction programs by collecting data on previously unstudied aspects of the perceived benefits of weight reduction among a segment of the Hispanic population.

Regardless of their individual nature, in order for perceived benefits to result in actual weight loss, the benefits must outweigh any perceived barriers to weight loss. Potential perceived barriers to weight reduction include the perceived cost of special diets, the

inconvenience of special and/or unusual meal preparation, and potentially painful emotional or physical stimuli. No research was found which explored the concepts of perceived cost of diets, or the perceived inconvenience of special food preparation. Studies related to painful emotional or physical stimuli can be separated into two broad categories; studies related to the psychological make-up of the obese individual and studies of responsiveness to external stimuli among the obese.

Psychiatrists' studies of obese individuals referred to them for psychotherapy revealed a tendency among the obese toward immature psychological behavior. In the review of the data collected on obesity in the "Midtown" mental health study, Moore, Stunkard, and Srole (1962) found in 334 obese men and women and 1,042 controls that the obese had significant pathological scores in immaturity, rigidity, and suspiciousness.

Individual case studies reported by psychiatrists revealed similar results. Hamburger (1951) felt that overeating served a defensive function and produced both the primary gain of mitigating undesired feelings of uncertainty, insecurity, or anxiety, and the secondary gain of using obesity as a weapon against others in social interaction. Both Bruch (1957) and Stunkard (1976) gave detailed accounts of their psychotherapeutic efforts with obese patients, and warned against simple weight reduction efforts with such individuals. Bruch defined obesity as a symptom of emotional

instability and claimed that the obese often held a derogatory attitude towards their own bodies. Stunkard defined the obese as possessing a severe disturbance of the body image, and cautioned that they may be used as scapegoats by other family members, especially when dieting efforts are perceived as potentially threatening to the fragile balance of family functioning.

Criticism of the strong pathology in the mental health of the obese found by psychiatrists was raised by Silverstone (1965, 1966, 1973). As most psychoanalytic studies were done on upper socioeconomic groups, Moore et al. (1962) concluded that the findings of immature behavior among the cross-sectional "Midtown" population was significant, especially since the obesity in this group was mainly among the low-income groups. However, Silverstone (1973) countered with the proposition that actually little major difference was found in the psychiatric status between the obese and non-obese subjects, the one area of immaturity being the exception which Moore et al. (1962) emphasized.

Silverstone (1973) claimed that there was little, if any, controlled evidence to support the psychiatrists' assertions that obesity was the consequence of neurotic eating patterns, and stated that controlled studies provided evidence to the contrary. Silverstone and Solomon (1965) found that of 32 obese patients who agreed to participate in a 1-year weight reduction clinic, 11 were considered neurotic by the Cornell Medical Index, a result higher than the

general population, but not significantly so. The study was carried out on a middle socioeconomic status group.

Shipman and Plesset (1963) studied the emotional effects of dieting on 151 obese patients and found that 15% of the patients from both hospital and general practices were anxious or depressed at the beginning of the treatment and the same percentage were disturbed at the end, with most of them being the same persons. Thus, few persons became depressed through dieting, although the small percentage cited manifested psychological symptoms before dieting. Unfortunately, the study lacked continuity because the individuals were treated with different protocols for varying lengths of time.

Silverstone and Lascelles (1966) studied 60 volunteer subjects in a 16-week weight reduction clinic in an urban practice. No persons became severely depressed during dieting and only slight rises in mild depression and anxiety were found.

McCance (1961) found no evidence of increased neuroticism among a group of 100 obese individuals attending the diet clinic in a London hospital when compared to a group of non-obese persons. He concluded that psychiatric disturbances have no bearing on obesity. It was pertinent to the present research to note that McCance's sample, in contrast to the private clients seen by Silverstone, were mainly from the lower socioeconomic groups who utilized the teaching hospital clinics.

In a longer study, Silverstone (1973) assessed 344 adults in two London general practices which covered all socioeconomic status ranges. Over one-half of the subjects were at least 15% overweight. No significant difference in the incidence of neuroticism between the obese and normal wieght subjects was found. Silverstone (1973) concluded that the prevalence of psychiatric disturbance was no greater among obese persons than among normal weight persons, and discarded the previously mentioned assertion that obesity is a defense mechanism against depression, by citing his research findings (Silverstone & Lascelles, 1966) which revealed no correlation between dieting and depression. Though the warnings of the psychiatrist must not be ignored, and individuals who exhibit psychological problems should be referred for counseling before any weight reduction program is instituted, the research evidence on non-psychiatric clients presented above emphasized that the average obese person is not in danger of psychiatric disturbance if he/she undertakes a weight reduction program.

The second category of barriers to weight loss dealt with the extent to which obese individuals are influenced by internal or external signals which facilitate overeating. This concept bears some similarity to the psychological variables previously discussed. Bruch (1973) hypothesized that eating disorders were caused by difficulty in differentiating between physical hunger and emotional reactions. Obese persons were felt to often mistake an emotional state

as hunger and thus overeat without physiologic need. Similarly, an external signal may trigger the impulse to eat with physiologic symptoms of hunger.

Schachter (1967) proposed both an external and an internal hypothesis for overeating based on experimental research. The external hypothesis states

> . . . there is growing reason to suspect that the eating behavior of the obese is relatively unrelated to any internal gut state, but is, in large part, under external control; that is, eating behavior is initiated and terminated by stimuli external to the organism. (1967, p. 117)

The external stimuli tested have been related to food itself, its taste, smell, or texture; and also to other environmental factors such as distractibility, time perception, and emotionality. The internal hypothesis states

> The relationships are quite the reverse for the normal subject; his eating behavior seems directly linked to internal state but relatively unaffected by the external circumstances surrounding the eating routine and ritual. (1967, p. 117)

Experimental evidence bore out the validity of the external hypothesis, but provided little support for the internal hypothesis, and suggested that many normal weight subjects may also be very susceptible to external stimuli, contrary to Schachter's theory. Most of the research on the impact of external stimuli on the individual was carried out either on volunteers from psychology classes or as observer studies of large groups of people in public places such as restaurants.

Various studies demonstrated a correlation between excessive weight and external responsiveness. The eating behavior of the obese was found to be more influenced by the time of day (Schachter & Gross, 1968), by the taste and sight of food (Nisbett, 1968a, 1968b; Wooley, Wooley, & Williams, 1976) and by the visual prominance of the food cues (Ross, 1974).

Other research showed that the increased responsiveness of the obese occurred with stimuli other than food. Overweight individuals were found to be more responsive to external cues than normal weight subjects in terms of distractibility (Rodin, 1973; Rodin & Slochower, 1974), emotionality (Pliner, 1974; Rodin, Elman, & Schachter, 1974), and time perception (Pliner, 1974; Rodin, 1975).

The causal element in the relationship between obesity and external responsiveness has not been clearly determined. Three main hypotheses linking the two concepts have been proposed: that obesity is a precursor to external responsiveness; that a third, underlying concept such as deprivation, correlates obesity and external responsiveness; or that externality is the cause of overeating and weight gain (Rodin, 1975).

The first two hypotheses were not substantiated in the research findings. Rodin and Slochower (1976) supported the third hypothesis, that externality itself is the cause of overeating and weight gain, as proposed by Schachter and Rodin (1974).

Rodin and Slochower (1976) tested the third hypothesis on a group of normal weight individuals to rule out obesity as a cause of external responsiveness. An 8-week summer camp was studied in which all participants (125 girls, aged 9 to 15) had access to the same food, same activities, and lived in the same environment. The children who exhibited hyper-responsiveness tended to have more absolute changes in weight, either gains or losses, than children with low responsiveness. It thus appears that many non-obese as well as obese individuals may be susceptible to external food cues. Rodin and Slochower (1976) concluded that

> Perhaps externally responsive people who maintain normal weight are those who are responsive to major shifts in food cues that produce short-term weight gain, but for whom long-term regulation is responsive to other factors. Externals who have become overweight are those individuals whose long-term regulatory mechanisms do not inhibit the continued weight gain that results from heightened responsiveness. (p. 343)

For as yet unknown reasons, some individuals readily respond by eating when confronted with the external stimuli, and become obese, while other persons either possess more self-control or have learned that other concerns are more important than the desirability of the food, for example appearance or praise from significant others. It is possible that environmental, especially family, influences may serve to mitigate the potentially self-destructive tendencies of some persons who are susceptible to external stimuli and thus to prevent obesity in that segment of the population.

In conclusion, environmental stimuli, as well as the more classic psychological issues of depression and

alterations in self-concept, have been shown to be possible psychosocial barriers to weight reduction. While researchers such as Craddock (1975) assumed that the average primary care population would be relatively free of serious depression or alterations in body image which would require psychiatric care, the research studies on environmental stimuli were conducted mainly on samples drawn from the general population and showed a widespread incidence of external responsiveness among that population. Thus, the primary health care provider can reasonably expect to be confronted with the problem of the obese individual who is very responsive to external stimuli, whether to food and/or to other cues. Again, although there was no research which dealt specifically with the issue of ethnic identity and external responsiveness, it is reasonable to assume that the low-income obese Hispanic population may contain many individuals who are very responsive to external stimuli and who may thus be faced with this barrier to effective weight reduction. The present research explored the general psychosocial barriers to weight reduction among middle-aged, low-income obese Hispanics.

Health Beliefs and the Hispanic

The traditional reliance of the Hispanic individual upon the power of fate (whether expressed as the will of God, the power of the devil or spirits, or merely as chance) has been discussed in Chapters I and II. This traditional

belief system may strongly influence the choices made by individual Hispanics regarding the utilization of traditional or scientific health care providers.

A number of researchers concluded that age and socio-economic status differences strongly affect the perception and utilization of traditional or scientific health care services, (Holland, 1978; Madsen, 1973; Kay, 1977; Nall & Speilberg, 1978), while other researchers contended that sociocultural attributes cut across age and class barriers and are the most important determinants of an individual's preference for one type of health care over another (Snow & Johnson, 1977; Martinez & Martin, 1978; Lee, 1976; and Johnston, 1977).

Holland (1978) sought to demonstrate that individuals choose one type of health care over another according to their level of integration into the Anglo culture. He studied 250 Hispanic families in Tucson, Arizona, the majority of whom were first or second generation immigrants from Mexico and of low socioeconomic status. Data were gathered on a variety of socioeconomic and cultural variables including strength of belief in traditional disease concepts.

Holland (1978) identified the three phases of assimilative integration into the Anglo culture as conservative (not assimilated), transitional, and highly assimilated. The 25% of the respondents categorized as conservative expressed strong belief in the folk health belief system, a preference for herbal remedies, and preferred the services

of the folk healer or "curandero." They were found to be skeptical of Anglo physicians and likely to use their services only if traditional cures had proven unsuccessful. The conservative individuals were found to be low-income and poorly educated.

The 50% of the respondents who were rated as in the transitional phase utilized both the traditional and scientific health care systems and held beliefs common to both systems. Members of this group were also low-income and recent immigrants, but tended to possess employment as skilled laborers.

The 25% of the sample who were considered to be highly assimilated possessed education and income levels similar to Anglos, were English speakers, and deemed nuclear family ties as more important than the extended kinship system. These individuals might still utilize herbal remedies or the services of a "curandero" if dissatisfied with the results of scientific treatment, but generally preferred to utilize the modern health care system.

Holland (1978) concluded that, although any Hispanic may still employ traditional health care practices, there is a general trend toward assimilation into the modern health care system and a gradual decline in the importance of traditional folk health beliefs as the assimilative process occurs.

Nall and Speilberg (1978) also investigated the effects of assimilation into the dominant culture upon the

acceptance of scientific health care practices. They studied 53 Hispanic adults from McAllen, Texas in the Rio Grande River Valley, in relation to their acceptance or rejection of the recommended treatment regime for tuberculosis. Social integration or assimilation was measured by integration into the family group, the ethnic locality group, and by language used outside the home. Those persons who were found to be highly socially integrated into their traditional culture were considered non-assimilated into the dominant Anglo culture and were less likely to accept treatment for tuberculosis. These persons were generally older, married, had close kinship ties, and spoke only Spanish. Conversely, those persons who were not found to be socially integrated into traditional culture and who accepted the treatment regimen were younger, not married, had no close kinship ties, and were predominately English-speaking. These persons were not, however, necessarily assimilated into the Anglo culture.

Similarities can thus be found between Nall and Speilberg's (1978) socially integrated traditional Hispanics who rejected scientific treatment and Holland's (1978) conservative group, but not necessarily between Nall and Speilberg's non-socially integrated group which accepted treatment and Holland's assimilated group. It can be concluded from both studies that those persons who were more closely tied to their traditional culture (socially integrated) tended to reject scientific health care practices. However, Nall and

Speilberg (1978) did not find that commitment to folk medical beliefs, propitiatory religious acts, or "curanderos" was related to rejection of scientific health care. They thus refuted the traditional opinion that belief in the folk health belief system is a barrier to health care services (Madsen, 1973; Rubel, 1960; Saunders, 1954).

Madsen (1973) found that the degree of reliance on traditional or scientific health care systems is correlated with socioeconomic status or class and education. He stated that there was a gradual transition from the lower class which relied most heavily on folk healers to those individuals in the highest social classes who depended almost entirely on physicians and prayer. Madsen (1973), however, did not specify what criteria were employed to determine social class.

Kay (1977) studied 60 adult women from ages 22 to 78 who were members of four families in a Hispanic neighborhood in a large southwestern city. The older women were most knowledgeable about folk health beliefs, especially those related to women's health care.

In summary, Holland (1978), Nall and Speilberg (1978), Madsen (1973), and Kay (1977) all concluded that Hispanics can adhere to both traditional and scientific health belief systems simultaneously, and that the traditional folk health belief system is undergoing a gradual process of assimilation with scientific health care practices. These researchers claimed that there is an age and/or socioeconomic status

related difference in the belief and practice of folk medicine. There is also some indication that belief in the magico-religious disease concept is no longer as strong as belief in other traditional health concepts. Sixty percent of Holland's (1978) respondents denied belief in disease caused by magic or extra-human forces and stated that it was a "superstition contrary to Catholic doctrine to which only the older generations adhered" (p. 115). Kay's (1977) informants denied that God sends illness as a punishment, and claimed that "Help yourself, and God will help you" (p. 123). These studies indicate that there may not be as strong a tendency toward fatalistic thinking as the process of assimilation occurs and scientific causes for illness are provided.

Other researchers did not find age-related differences in folk health beliefs and practices. Snow and Johnson (1977) interviewed 40 low-income, poorly educated Hispanic women enrolled in a public health clinic in Michigan to determine their understanding of menstruation and its effects on health and illness. The women responded according to the traditional hot-cold dichotomy; thus the issue of blood, which is hot and dry, could be stopped by any food, medication, or environmental agent which is perceived as cold and wet. Although traditional health beliefs and practices were widely acknowledged by this group of women, no age-related difference was found among the respondents.

Johnston (1977), a nurse researcher, studied expectations held by Anglo, English-speaking Hispanic, Spanish-speaking Hispanic, and Black mothers regarding the perceived efficacy of vitamins. Her sample of 200 women with a mean age of 28 years revealed no age-related differences among the folk health beliefs of the women.

Martinez and Martin (1978) studied the Hispanic folk health belief system, particularly beliefs concerning etiology, symptomatology, and modes of disease treatment. A structured interview was used on 75 Hispanic women in a southwestern city. Martinez and Martin (1978) found that belief in folk illness was almost universal, with almost 97% of the women claiming knowledge of folk diseases, and 95% personal contact with folk illnesses within their own families. There was no relationship between belief in and reported occurrences of folk diseases and age, education, or birthplace of the informants.

Martinez and Martin's (1978) findings conflicted with Holland's (1978) findings in that Martinez and Martin found no relationship between age and/or socioeconomic status and belief in the folk health belief system. Martinez and Martin (1978) concluded instead that the preservation of folk beliefs is a result of sociocultural isolation, "acculturation and assimilation of persons of Mexican origin . . . has been slowed by social mechanisms of the larger society which tend to keep these people separate" (p. 276).

Lee (1976) also found that sociocultural factors influenced belief in scientific health care practices more than socioeconomic status. He gathered data on 416 Hispanic families in a California neighborhood health center and found that there was no relationship between socioeconomic status of the family and the utilization of health care services.

The role of the folk healer or "curandero" within the Hispanic culture today has been disputed in the literature. Clark (1970), Holland (1978), Madsen (1973), Rubel (1960, 1966), and Saunders (1954) documented the importance of the "curandero" in northern California, Arizona, New Mexico, and south Texas. Martinez and Martin (1978) also reported that their subjects consulted the "curandero" for treatment of folk illnesses.

Edgerton, Karno, and Fernandez (1978), however, interviewed 500 Hispanics in East Los Angeles and found that less than 1% of the sample identified the "curandero" as a potential health care provider. Kay (1977) found that the role and the perceived efficacy of the "curandero" was widely disputed among her respondents, with the younger women acknowledging scant acquaintance with folk treatments or "curanderos."

Edgerton et al.'s (1978) and Kay's (1977) studies suggest that there may be age or geographically related differences in the perceptions of the "curandero" as a valid health care provider. It is also possible that the Hispanic population who are more acculturated (younger or living in

urban areas) may be reluctant to acknowledge the use of folk medicine, especially if the interviewer is not Hispanic. There was no research found which documented this last contention.

In summary, the literature on motivational "cues to action" showed that there may be a decreasing tendency among Hispanics to believe in the power of extra-human forces or chance to determine their health status and an increasing tendency to believe that one can help oneself through preventive health care behavior (Holland, 1978; Kay, 1977). Whether health beliefs and practices are affected more by age and socioeconomic status or by sociocultural factors was not conclusively determined. It was, however, shown by a number of researchers (Holland, 1978; Nall & Speilberg, 1978) that a gradual assimilation of traditional health beliefs and practices and scientific beliefs and practices has been occurring. Both health care systems can be utilized simultaneously, without the traditional system serving as a barrier to seeking preventive or curative scientific health care (Nall & Speilberg, 1978; Martinez & Martin, 1978).

The nursing literature documented both the survival of the folk health belief system and the necessity of providing culturally relevant scientific health care for the Hispanic individual. Dorsey and Jackson (1976), Baca (1978), Gonzales (1976), Hautman (1979), Johnson (1978), Spector (1979), and White (1977) discussed folk health beliefs and practices within the Hispanic culture and their interaction

with the professional health care system. Proposed nursing interventions based on their writings and on the present research are presented in Chapter VI.

Summary

The review of the literature documented studies pertaining to the preventive Health Belief Model in general and to its components of perceived susceptibility, perceived severity, perceived benefits, and perceived barriers. Health beliefs specifically related to the Hispanic population were also documented. The literature review failed to discover many research studies pertaining to the Hispanic population and/or to the issue or weight reduction as a preventive health measure.

However, it was documented that perceived susceptibility to and perceived severity of diabetes as a result of obesity may be a concept foreign to the Hispanic mind and thus the threat of diabetes may not be perceived as very relevant to the average Hispanic (Schulman & Smith, 1963). Although perceived benefits to weight reduction were documented and would theoretically apply to the Hispanic population, no research has proven their applicability to this cultural group. In contrast, the perceived barriers to weight reduction, especially external responsiveness, were shown to have more universal characteristics and thus may be valid in relation to the Hispanic population. In light of the above findings, it is questionable whether the Hispanic individual

will find himself/herself seeking out preventive health care in the form of weight reduction without a direct motivational "cue to action."

Nursing practice may provide a culturally relevant "cue to action" by acknowledging the contribution of both folk and scientific health belief systems to the action of preventive health care. The present research study added to the knowledge base of nursing in the planning and implementation of these "cues to action."

In Chapter IV, the methodology and procedures utilized in this study are presented. The sample, setting, instrument, procedures for data collection with human rights protection, scoring procedures, and techniques of data analysis are discussed.

CHAPTER IV

METHODOLOGY

Overview

This research study investigated the individual perceptions and health beliefs of middle-aged, low-income obese Hispanics. The subjects were 30 Hispanics residing in a midwestern urban area of 200,000 people. Perceived susceptibility to the development of non-insulin dependent diabetes mellitus (Type II) as a result of obesity, the perceived severity of the diagnosis of Type II diabetes mellitus, and the perceived benefits and perceived barriers to weight reduction were the study variables derived from the preventive Health Belief Model (Rosenstock, 1974). Modifying variables such as age, sex, family developmental stage, and family history of diabetes were determined through the gathering of sociodemographic data. The motivational variable or "cues to action" was measured through the gathering of data concerning the influence of "powerful others" and "chance" upon the individual. The instrument was translated into Spanish and presented in an interview format to the participants. The techniques used for analysis of the data included descriptive and inferential statistics.

The purpose of this chapter is to present the methodology and procedures utilized in this research study. The sample, setting, instrument, pretest procedure, data collection procedure with human rights protection, scoring techniques, and procedures for data analysis are discussed.

Sample

The subjects were 30 middle-aged, low-income obese Hispanic individuals. The convenience sample was drawn from persons who were permanent residents of a midwestern urban area with a population of approximately 200,000 people. The subjects were either regular clients of the health clinic at a low-income community center or were individuals known personally by the clinic coordinator. Results of this study, therefore, can be generalized only to those individuals who possess the same characteristics as individuals defined in the sample, and are not indicative of a random sample of the Hispanic population.

Obese

The obese Hispanic was defined as the individual who was at least 20% over the average weight for height according to the tables of the Department of Health, Education, and Welfare, 1966 (Appendix A).

Middle-aged

The middle-aged Hispanic was defined as an individual (male or female) between the ages of 30 and 60. The lower age limit was set by the lower limit in Stevenson's (1977)

definition of middlescence and in order to include virtually all persons at risk to develop Type II diabetes. The upper limit of 60 was extended from the end of Stevenson's middlescence I, 50 years, because one of the prime tasks of the middle-aged couple, the raising and launching into society of children, may not be completed in the Hispanic family by the age of 50. The task of childrearing was chosen as an indicator for this study because the demands of children's and teenagers' eating schedules may serve as a significant barrier to weight reduction among their parents. Single, middle-aged Hispanics without children were not included in the study design because they would not be affected by this potential barrier. However, divorced parents, in close contact with at least one of their children, were included.

Low-income

All of the subjects were clients of a low-income community clinic. They met the designated criteria of the federal government for low-income classification (Appendix B).

Hispanic

The term Hispanic referred to any individual raised in a Spanish-speaking environment whose first language was Spanish.

Setting

The low-income community center utilized in this study serves a multi-racial and linguistic population in a low-income area. The majority of clients, however, are of

Hispanic origin. The community center provides English language classes, employment assistance, substance abuse and mental health counseling, and emergency financial assistance, as well as physical health care. The health clinic offers weekly adult health and pediatric clinics staffed by physicians and also employs a full-time nurse who serves as the clinic coordinator. The community center is operated by the local Catholic diocese and is funded by both the Catholic church and the federal government.

Both the community center and the private homes of the subjects were utilized as settings to gather the data. At the community center, a quiet, private location, free from interruptions, was used for the interviews. In the subjects' homes, the kitchen or dining room table was generally the only surface area available for writing. Again, attempts were made to ensure a quiet, private atmosphere. Most of the private dwellings, which included single family homes, apartments, and public housing projects, were within two miles of the community center.

Instrument

The instrument was based upon the preventive Health Belief Model (Rosenstock, 1974) and combined items drawn from three sources; published instruments, the literature review, and the results of a pilot test designed by the researcher which addressed pertinent concepts not included in the literature review. Selected items were drawn from three published instruments; the Diabetes Mellitus Patient

Interview (Bowen, Rich, & Schlotfeldt, 1979), the Health Perceptions Questionnaire (Ware, Wright, & Snyder, 1974), and the Locus of Control Scales (Wallston, Wallston, & De Vellis, 1978). A pilot test was developed by the researcher to tap concepts not included in the literature review, but which were deemed important to Hispanics. Open-ended questions (Appendix C) concerning obesity and diabetes were asked of 10 Hispanics, both obese and non-obese, diabetic and non-diabetic, in order to develop additional instrument items.

The total instrument contained 56 items which measured each of the major perceptual variables; perceived susceptibility to diabetes (10 items), perceived severity of diabetes (15 items), perceived benefits of weight reduction (10 items), perceived barriers to weight reduction (11 items), and the motivational variable "cues to action" (10 items) (Appendix D). Modifying factors were assessed through the collection of sociodemographic data (Appendix D). The instrument contained both positively and negatively worded close-ended items which were arranged randomly. The instrument was translated into Spanish by a Spanish language graduate student (Appendix D).

Operational Definitions of the Study Variables

Festinger (1957) stated that beliefs about beliefs can be assumed to be equivalent to the beliefs themselves. Fishbein and Ajzen hypothesized that beliefs about an object

are the basis for the formation of attitudes about the object (1975). The individual person may hold a large number of beliefs about a particular object. Only those beliefs which are active in forming an attitude at a given time are termed salient (Fishbein & Ajzen, 1975). The individual beliefs or perceptions which were tested in this study may or may not prove relevant in the individual's ability to form an attitude about his/her susceptibility to Type II diabetes or about the severity of diabetes as a disease since the total instrument has not been previously tested.

Perceived Susceptibility

The concept of susceptibility to Type II diabetes as an internal factor of which the individual could have some prior knowledge and control over was tested through items drawn from the Diabetes Mellitus Patient Interview (Bowen et al., 1979) (Appendix D, items 1 and 11), and from the literature review and the pilot test (Appendix D, items 6, 16, 21, 26, 31, 37, 43, and 49).

Perceived Severity

The perceived severity of diabetes mellitus (Type II) as a disease was measured by questions which elicited both beliefs and cognitive knowledge. The items reflected the present or potential limitations of diabetes mellitus (Type II) as a disease, the potential complications of Type II diabetes, the perceived socioeconomic burden of the

disease, and the emotional significance of the diagnosis. The severity items were developed from Bowen at al. (1979) (Appendix D, items 17, 39, 44, and 51), Ware et al. (1974) (Appendix D, item 12), and from the literature review and the pilot test (Appendix D, items 2, 7, 22, 27, 32, 33, 38, 45, 50, and 55).

Perceived Benefits

The items which measured the perceived benefits of weight reduction were derived solely from the literature and from the pilot test. The concept of perceived benefits of weight reduction was operationalized through the use of items which measured the perceived decreased risk of developing Type II diabetes as a result of weight reduction (Appendix D, items 3 and 8), and from items which measured feelings of self-esteem (Appendix D, items 13 and 18), physical well-being (Appendix D, items 23, 28, 40, 46, and 52), and social support from significant others (Appendix D, item 34).

Perceived Barriers

The items which measured the perceived barriers to weight reduction were also derived solely from the literature and from the pilot test, since there was no previously tested instrument available. Barriers to weight reduction were measured by items concerned with economic factors (Appendix D, items 14 and 19), perceived inconvenience (Appendix D, items 24 and 29), and painful physical and/or

emotional external stimuli (Appendix D, items 4, 9, 35, 41, 47, 53, and 56).

Motivational "Cues to Action"

As documented in Chapter I and II, there exists a strong tendency among the Hispanic population to attribute illness to either the action of powerful others such as God, spirits, or powerful persons (lay or scientific practitioners), or to chance or fate. Items which measured the concept of chance or fate were derived solely from the Locus of Control Scales (Wallston et al., 1978) (Appendix D, items 36, 42, and 48). The concept of powerful others such as God or spirits was measured through the development of items from the literature review (Appendix D, items 5 and 10). Items which measured the perceived efficacy of lay and scientific health care practitioners were drawn from the Locus of Control Scales (Wallston et al., 1978) (Appendix D, items 20 and 25) and from the literature (Appendix D, items 15, 30, and 54).

Modifying Variables--
Sociodemographic Data

Sociodemographic data were gathered in order to determine age, sex, family developmental stage, and family history of diabetes among the subjects (Appendix D).

Age. The convenience of middle-aged, low-income obese Hispanics was divided into three age groups:

I. ages 30-39
II. ages 40-49
III. ages 50-60

Sex. The numbers of males and females who participated in the study were calculated in order to measure possible variations in individual perceptions according to sex.

Family Developmental Stage. Duvall's (1977) stages of family development were used to determine the present stage of each individual's family. Because the population available for study was limited, Duvall's eight stages were condensed into four broader stages in order to include more individuals in each category. Family developmental stage was determined by the age of the youngest child in the family. The age of the youngest child determines the length of time the family will be involved in childrearing. The four developmental stages used in this study were birth to school age (I), ages five through twelve (II), teenagers--ages 13 through 17 (III), and those families with only adult children (over age 18) (IV).

Family History of Diabetes. Data on family history of Type II diabetes mellitus were gathered to determine whether a relationship existed between the presence of a family history of diabetes and perceptions of the risk of developing diabetes. Specific data were gathered regarding grandparents, parents, and siblings of the subjects.

Validity of the Instrument

Content validity refers to the extent to which the items accurately reflect the subject matter under question

(Crano & Brewer, 1973). The researcher necessarily makes judgments concerning which items reflect the desired content; therefore, content validity is subjective (Polit & Hungler, 1978). In this study, content validity was determined by the subjective appraisal of each item by the researcher and by conferring with five experts in the fields of obesity, diabetes, and cross-cultural nursing.

There were a number of threats to validity which were pertinent to this study. Several of these threats could not be avoided. Because the instrument was previously untested, response bias was a possibility; that is, the particular wording of the items, rather than their actual content, might have influenced the answers. The translation of the instrument into another language furthered the possibility that choice of words, rather than actual content, might have influenced the responses. The subjects also may have tended to give socially desirable answers, rather than to risk exposing negative feelings or behaviors. This was particularly important for the present research as the interview format significantly decreased the amount of privacy the subjects had when answering the questionnaire.

Several other potential threats to validity were at least partially minimized in the construction of the instrument. The threat of acquiescence, in which the subject would tend to agree with positively worded statements, was partially eliminated through the use of both positively and negatively worded items. An attempt was made to decrease

the possibility of extreme response set, in which the subjects respond to one of the extremes of the scale rather than using fine discrimination, through the use of a six-point Likert scale which provided a wide range of possible answers. The tendency to answer at the middle of the scale or under the heading "undecided" was minimized through the use of a scale which had no designated midpoint. Potential cultural biases were screened for by an expert in cross-cultural nursing who is a native Spanish-speaker.

Reliability of the Instrument

Coefficient Alpha was used to examine the internal consistency of the items in each of the main study variable scales; perceived susceptibility, perceived severity, perceived benefits, and perceived barriers, and on the scale of motivational "cues to action." The standard for internal consistency is a correlation of at least .80 (Crano & Brewer, 1973). A coefficient Alpha of such a high level is usually attained after several pretests of the items on the instrument and with the utilization of both a large sample size and an instrument with many items. The present research, as an exploratory descriptive study, was a first testing of the instrument upon a relatively small sample and thus could not be expected to yield as high a coefficient Alpha as a previously tested and refined instrument.

Pretest of the Study Questionnaire

The total instrument, containing the page of socio-demographic data and the 56 item questionnaire (Appendix D), was pretested for readability, clarity of directions, and time required for completion by four Hispanic individuals who were attending a senior citizens lunch at the low-income community center. The pretest sample was similar to the actual study sample in relation to low-income status, Spanish language preference, sex (both male and female), family history of diabetes, and present physical status (none was a diagnosed diabetic). They differed in that the ages of the pretest group ranged from 61 to 65, which excluded them from the 30 to 60 age range for the actual study sample. The decision was made to utilize this slightly older pretest sample because of the very limited number of eligible subjects in the area. Employing a pretest sample within the age range would have seriously compromised the size of the actual sample.

The pretest subjects were asked to provide feedback to the researcher in relation to readability, clarity of directions, and time needed to complete the interview. Subjects often found the negative items to be confusing. These items were rechecked for content and readability by the translator and by the cross-cultural nursing expert. The decision was made by the researcher to retain the negatively worded items in order to decrease the threat of acquiescence.

Data Collection Procedure

Permission to use the community center and clinic site for contacting and interviewing subjects was granted by the director of the center and by the clinic coordinator. The clinic coordinator (a native Spanish-speaker who was also the cross-cultural nursing expert) contacted prospective subjects by telephone or in person at the center. Following an explanation of the identity of the researcher, the nature of the study, and the interview format, the prospective subject decided whether or not to be contacted directly by the researcher.

Those persons who agreed to participate in the study were met by the researcher at their convenience either at the clinic or in their own home. The guidelines of the Michigan State University Committee on Research Involving Human Subjects (UCRIHS) were utilized to protect the subjects' rights. An explanation of the study was included in written form in the Consent Letter (Appendix E) and was read to each subject. This statement delineated the voluntary nature of the research, the risks and benefits involved, confidentiality, privacy afforded, and how long it would take to complete the questionnaire. Questions were answered by the researcher and the consent form was signed by the subject with the acknowledgment that the subject was free to stop the interview at any point without penalty if termination of the agreement was desired.

During the interview, the researcher read each item once while the subject responded in writing on the questionnaire. The researcher repeated questions upon request for the purpose of clarity, but answered only procedural questions about the study itself. At the completion of the interview, the questionnaire and the consent form were collected by the researcher. The subject was given a copy of the consent form with the researcher's name and phone number and was also instructed to contact the clinic coordinator if he/she could not get in contact with the researcher and still had further questions or wished to withdraw consent at a later time.

The questionnaires and consent forms were coded with the same number so that if an individual chose to withdraw from the study after the interview, the questionnaire could be destroyed. The questionnaires were stored in the researcher's home in a file cabinet. Data were recorded from the questionnaires in aggregate form. The complete procedures involved in Human Rights Protection are detailed in Appendix E.

Scoring

In the following paragraphs, the scoring procedures for the sociodemographic data and for the questionnaire are presented. In addition to sociodemographic data designed to investigate age, sex, family developmental stage, and family history of diabetes, data were also gathered on the birthplace and the religion of the subjects, on their

marital status, and on their total number of children (Appendix D). This information was used solely for descriptive purposes. There were five categories available regarding birthplace:

Texas	Michigan	Mexico	Florida	Other
1	2	3	4	5

and four categories for religious preference:

Catholic	Baptist	Pentecostal	Other Protestant Demonination
1	2	3	4

These birthplace and religious preference categories were selected because they were believed by the researcher and by the expert in cross-cultural nursing to be representative of the majority of the local Hispanic population. The marital status was indicated as follows:

Married	Separated	Divorced	Widowed
1	2	3	4

Information on age, sex, total number of children, and age of the youngest child was also recorded. The age of the youngest child was used to compute the stage of family development. The family history of diabetes was recorded for the following individuals; paternal grandfather, paternal grandmother, maternal grandfather, maternal grandmother, father, mother, brothers, or sisters.

The 56 items on the preventive Health Belief Model questionnaire (including the categories of perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and motivational "cues to action") were scored using a six-point Likert scale. Crano and Brewer stated that Likert's method of summated ratings was the most "popular approach to the generation of reliable attitude measurement devices" (1973, p. 239). Although a five-point discrimination scale is the most widely used, a six-point scale was chosen for this study in order to eliminate the "undecided" category and to thereby decrease the possibility of having many "undecided" answers.

Positively worded items were scored as follows:

Strongly Agree	Moderately Agree	Weakly Agree	Weakly Disagree	Moderately Disagree	Strongly Disagree
6	5	4	3	2	1

Negatively worded items were scored:

Strongly Agree	Moderately Agree	Weakly Agree	Weakly Disagree	Moderately Disagree	Strongly Disagree
1	2	3	4	5	6

Therefore, items which were positively worded received the highest point value for Strongly Agree and those items which were negatively worded received the lowest point value for Strongly Agree. The scores in each of the five categories (perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and motivational "cues to action") were totaled and used to determine the t-test

between independent samples and Pearson Product-Moment correlations.

Procedures for Data Analysis

Both descriptive and inferential statistics were utilized in this study. The descriptive statistics included frequencies, percentages, means, modes, ranges, standard deviations and correlations.

In order to test the relationship between the variables in this study, the Pearson Product-Moment correlation (r) was computed. The interrelationships between the main perceptual variables of susceptibility, severity, benefits, and barriers were determined. The individual perceptual variables were also correlated with the modifying factors of age, sex, family developmental stage, and family history of diabetes, and with the motivational "cues to action." "The size of the correlation coefficient is indicative of the degree of relationship between the variables, and a low correlation indicates a low relationship" (Borg & Gall, 1971, p. 358). The correlation coefficient (r) has a range of value from -1 to +1. The interpretation of (r) computed between the variables in this study was:

Absolute Value of (r)	Strength of Relationship
0.00 to 0.20	negligible
0.20 to 0.40	slight or low
0.40 to 0.60	moderate or fair
0.60 to 0.80	marked, somewhat high
0.80 to 1.00	high to very high

(Van Ormer & Williams, 1941, p. 65)

The inferential statistics used in this study were the t-test for independent samples and chi-square. The t-test compared the actual scores on the five categories (perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and motivational "cues to action") with the assumed mean (the score which would have been achieved by chance). The t-test was utilized in order to determine whether the differences between the actual mean scores on the variables and the values of the assumed scores were statistically significant. The chi-square technique, utilized to compute differences between categories of data (Polit & Hungler, 1978), was used in this study to ascertain whether there were differences between the three age groups (30-39; 40-49; and 50-60) in their scores on the main perceptual variables.

Summary

Chapter IV provided an overview of the methodology and procedures utilized in this study. The sample, the setting for data collection, the development of the instrument and its pretesting, the actual data collection procedure with human rights protection, the scoring and the data analysis techniques were presented. In Chapter V, the data pertaining to the description of the subjects and the analysis of the research questions are presented.

CHAPTER V

DATA PRESENTATION

Overview

The purpose of this study was to determine the perceptions of middle-aged, low-income obese Hispanics about the relationship between obesity and the perceived risk of developing non-insulin dependent (Type II) diabetes mellitus. The research questions developed for this study were:

Research Questions

1. Does the middle-aged, low-income obese Hispanic perceive that he/she is susceptible to develop non-insulin dependent diabetes mellitus (Type II)?
2. What is the perceived severity of Type II diabetes mellitus among middle-aged, low-income obese Hispanics?
3. Are there perceived benefits to weight reduction among middle-aged, low-income obese Hispanics?
4. Are there perceived barriers to weight reduction among middle-aged, low-income obese Hispanics?

5. What are the relationships between perceived susceptibility to and perceived severity of disease, and perceived benefits and perceived barriers to weight reduction?
6. What are the relationships between the modifying variables of age, sex, family developmental stage, and family history of diabetes, and the main perceptual variables of susceptibility, severity, benefits, and barriers?
7. What are the relationships between the motivational "cues to action" and the main perceptual variables of susceptibility, severity, benefits, and barriers?

In this chapter, data describing the study sample and data addressing the research questions are presented. The study sample is described by age, sex, family developmental stage, and family history of diabetes. Additional descriptive data on birthplace, religion, marital status, and number of children, although not directly related to the study variables, are presented to broaden the description of the sample. Data pertaining to the research questions are based on the scores generated from the individual scales of perceived susceptibility, perceived severity, perceived benefits, and perceived barriers.

Several statistical analysis techniques were used to analyze the data. Descriptive statistics included frequencies, percentages, means, modes, ranges, standard deviations, and the Pearson Product-Moment correlation.

Inferential techniques used were chi-square and the t-test for independent samples. The data are presented as follows; descriptive data pertaining to the sample, reliability data, and descriptive and inferential data pertaining to the research questions.

Descriptive Data

The sample consisted of 30 middle-aged, low-income obese Hispanic men and women who agreed to participate in the study. The sample had a median age of 44.7 years, and there were twice as many women subjects (20) as men (10). The subjects ranged from 20% over the average weight for height to over 200%. Two-thirds (21) were over the 30% overweight which Andres (1980) stated was the lower limit of obesity which implied potential disability for the individual.

Age

The subjects ranged in age from 31 to 60 with a fairly even distribution across the age ranges. The mean age of the subjects was 44.7 years (Table 1).

Table 1.-- Subjects by Age Category (N=30).

Age	Number of Subjects	Percentage
30-39	9	30.0
40-49	12	40.0
50-60	9	30.0
TOTAL	30	100.0

Sex

Two-thirds (66.7%) of the subjects were women, and one-third (33.3%) were men, as seen in Table 2.

Table 2.--Sex of Subjects (N=30).

Sex	Number of Subjects	Percentage
Male	10	33.3
Female	20	66.7
TOTAL	30	100.0

Family Developmental Stage

Family developmental stage was determined through ascertaining the age of the youngest child in the family, as the youngest child determines the number of childrearing years remaining for the parents. The eight family developmental stages outlined by Duvall (1977) were condensed into four stages due to the small sample size of the present study. The stages were numbered I, II, III, and IV, and were determined as follows; the preschool years (birth to age 5) as stage I; the school age years (5 through 12) as stage II; the teenage years (13 through 17) as stage III; and adult children (18 and above) as stage IV (Table 3).

Family History of Diabetes

Of the 30 subjects, 10 acknowledged a known family history of Type II diabetes mellitus (Table 4). The 10 subjects identified a total of 12 relatives with Type II

Table 3.--Family Developmental Stage (N=30).

Stage	Frequency	Percentage
I	7	23.3
II	12	40.0
III	6	20.0
IV	5	16.7
TOTAL	30	100.0

Table 4.--Family History of Diabetes (N=30).

Number of Relatives	Frequency	Percentage
0	20	66.7
1	8	26.7
2	2	6.7
TOTAL	30	100.0

diabetes mellitus including one maternal grandmother, 3 fathers, 6 mothers, and 2 sisters.

Additional Descriptive Data

Data were also collected on birthplace, religion, marital status, and total number of children. This information is presented to further describe the study population.

Birthplace

There were five categories for birthplace; Texas, Michigan, Mexico, Florida, and other. All of the subjects were born in Texas, Michigan, or Mexico, with the majority

(73.3%) being born in Texas. All of the subjects were of Mexican descent (Table 5).

Table 5.--Birthplace of Subjects (N=30).

Location	Number of Subjects	Percentage
Texas	22	73.3
Michigan	3	10.0
Mexico	5	16.7
TOTAL	30	100.0

Religion

There were four categories for religion; Catholic, Baptist, Pentecostal, and other Protestant denomination. The majority of the subjects were Catholic (60.0%), while the various Protestant demoninations comprised the remaining 40.0%. All of the subjects professed a religious preference (Table 6).

Table 6.--Religious Preference of Subjects (N=30).

Religion	Number of Subjects	Percentage
Catholic	18	60.0
Baptist	4	13.3
Pentecostal	2	6.7
Other Protestant Denomination	6	20.0
TOTAL	30	100.0

Marital Status

Only individuals who were or had been married were included in the study sample. The four categories for marital status were; married, separated, divorced, or widowed. The majority of subjects were married (70.0%) and living with their spouses (Table 7).

Table 7.--Marital Status of Subjects (N=30).

Status	Number of Subjects	Percentage
Married	21	70.0
Separated	1	3.3
Divorced	4	13.3
Widowed	4	13.3
TOTAL	30	100.0

Total Number of Children

The number of children among the subjects ranged from one to 12 with a mean of 6.3 children (Table 8).

Table 8.--Number of Children Among the Subjects (N=30).

Number of Children	Number of Subjects	Percentage
1	1	3.3
3	5	16.7
4	4	13.3
5	5	16.7
6	3	10.0
7	1	3.3
8	2	6.7
9	4	13.3
11	3	10.0
12	2	6.7
TOTAL	30	100.0

In summary, the descriptive data have included the age, sex, family developmental stage, and family history of diabetes of the subjects as well as the extraneous categories of birthplace, religion, marital status, and number of children.

Reliability of the Instrument

The reliability of the instrument was measured by computing coefficient Alpha. Five areas of the instrument were evaluated individually for internal consistency; perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and motivational "cues to action."

The initial analysis revealed a trend toward homogeneity among the item responses. That is, the responses tended to cluster under two of the six possible categories, Strongly Agree and Strongly Disagree, rather than being more uniformly spread over the whole spectrum of possibilities. Data regarding the total number of responses in each category (30 subjects responding to 56 items each) are presented in Table 9.

Since the scores were not more evenly distributed within the six categories, reliable scales could not be constructed. Thus, the items in each of the five areas which showed coefficient Alphas greater than .59 were chosen for analysis. The items utilized were susceptibility (16, 37, and 43); severity (12, 44, 50, and 51); benefits (8, 34, and 52); barriers (29, 35, and 53); and motivational "cues

Table 9.--Total Score Distributions on the Six-Point Likert Scale.

Category	Number of Responses	Percentage
Strongly Agree	697	41.5
Moderately Agree	84	5.0
Weakly Agree	167	10.0
Weakly Disagree	139	8.2
Moderately Disagree	131	7.8
Strongly Disagree	462	27.5
TOTAL	1,680	100.0

to action" (42, 48, and 54) (Appendix D). The standardized coefficient Alphas for each scale are presented in Table 10.

Table 10.--Standardized Reliability Coefficient Alphas.

Scale	Alpha	Number of Items
Susceptibility	.596	3
Severity	.719	4
Benefits	.649	3
Barriers	.623	3
"Cues to Action"	.714	3

In conclusion, the coefficient Alphas were computed from a subset of the original items on each scale; that is, from the three or four items on each scale which correlated most closely with each other.

Presentation of Data Related to the Research Questions

In this section, descriptive and inferential statistics are presented as related to the individual research questions.

Research Question 1

Does the middle-aged, low-income obese Hispanic perceive that he/she is susceptible to develop non-insulin dependent diabetes mellitus?

Three items (Appendix D, items 16, 37, and 43) were utilized in the analysis of perceived susceptibility. Each item could be scored from 1 to 6 rendering possible total scores from 3 to 18. The actual mean susceptibility score was 14.5, the mode was 18.0, the range was 15.0, and the standard deviation was 3.8. The t-test for independent samples tested the difference between the actual mean score and the assumed mean (the range divided by two and added to the lowest score). The t-value for perceived susceptibility was 1.54 which, at 29 degree of freedom (N-1), was not statistically significant (Table 11). Thus, the actual mean did not differ significantly from the chance mean.

The descriptive data, however, showed a tendency for the subjects to score towards the high end of the susceptibility scale. Of the 30 subjects, 17 scored between 16 and 18 of the total 18 points. The 13 remaining scores were distributed across the middle section of the scale, from 8 to 15 points. Only one subject scored below an 8. In conclusion, although the descriptive data showed a tendency

Table 11.--T-test for Independent Samples for Susceptibility, Severity, Benefits, and Barriers.

	Actual $\bar{X}$	Assumed $\bar{X}$	t-Value
Susceptibility	14.5	10.5	1.54
Severity	16.6	14.0	.46
Benefits	14.2	11.0	1.19
Barriers	11.8	10.5	.39

towards high perceived susceptibility, no definitive statements can be made about whether or not the middle-aged, low-income obese Hispanics perceive themselves as susceptible to the development of diabetes mellitus (Type II) because the actual mean did not differ significantly from the chance mean.

Research Question 2

What is the perceived severity of Type II diabetes mellitus among middle-aged, low-income obese Hispanics?

Four items (Appendix D, items 12, 44, 50, and 51) were used in the analysis of the concept of perceived severity. Possible scores ranged from 4 to 24. The actual mean severity score was 16.6, the mode was 20.0, the range was 20.0, and the standard deviation was 5.6. The t-value for perceived severity was .46 which, at 29 degrees of freedom, was non-significant (Table 11). Therefore, the actual mean did not differ significantly from the assumed mean. The descriptive data revealed an even distribution of scores along the whole range from 4 to 24. Thus, it cannot be

concluded from the data whether or not the middle-aged, low-income obese Hispanics perceive the severity of diabetes mellitus (Type II) as a disease entity.

Research Question 3

Are there perceived benefits to weight reduction among middle-aged, low-income obese Hispanics?

Three items (Appendix D, items 8, 34, and 52) were used to analyze perceived benefits, with possible scores ranging from 3 to 18. The actual mean benefits score was 14.2, the mode was 18.0, the range was 14.0, and the standard deviation was 3.9. The t-value for perceived benefits was 1.19 which, at 29 degrees of freedom, was non-significant (Table 11). The actual mean did not differ significantly from the assumed or chance mean.

The descriptive data, however, showed a bimodal distribution of scores with 8 of the subjects scoring near the mean (13 points) and 10 subjects scoring the highest possible benefits score, 18 points. Only one subject scored below an 8 on the range from 3 to 18. From the data analyzed, no definitive conclusions can be drawn about whether the middle-aged, low-income obese Hispanics perceive benefits to weight reduction.

Research Question 4

Are there perceived barriers to weight reduction among middle-aged, low-income obese Hispanics?

Three items (Appendix D, items 29, 35, and 53) were used in the analysis of perceived barriers, with possible scores ranging from 3 to 18. The actual mean barriers score was 11.8, the mode was 8.0, the range was 15.0, and the standard deviation was 4.3. The t-value for perceived barriers was .39 which, at 29 degrees of freedom, was non-significant (Table 11). Therefore, the actual mean did not differ significantly from the assumed mean. The descriptive data revealed an even distribution of scores along the whole range from 3 to 18. Thus, it cannot be concluded from the data whether or not the middle-aged, low-income obese Hispanics perceive barriers to weight reduction.

Research Question 5

What are the relationships between perceived susceptibility to and perceived severity of disease, and perceived benefits and perceived barriers to weight reduction?

The relationships between the four perceptual variables were analyzed using the Pearson Product-Moment correlation. The correlations between all four of the variables were negligible or low, and none of the results were significant at the .05 level (Table 12).

Research Question 6

What are the relationships between the modifying variables of age, sex, family developmental stage, and family history of diabetes, and the main perceptual

Table 12.--Pearson Product-Moment Correlation Matrix for Susceptibility, Severity, Benefits, and Barriers.

	Suscept.	Severity	Benefits	Barriers
Suscept.	x	-.0635	-.0479	-.1732
Severity	-.0635	x	-.1867	-.2601
Benefits	-.0479	-.1867	x	.1923
Barriers	-.1732	-.2601	.1923	x

variables of susceptibility, severity, benefits, and barriers?

Age and Sex

When increasing age was correlated with the main perceptual variables without differentiating between males and females, a moderate correlation, .3981, was found between increasing age and perceived barriers, which was significant at the .01 level. Within the subset of males only, increasing age correlated moderately with perceived susceptibility, .5309, which was significant at the .05 level. Increasing age correlated highly with perceived barriers, .7995, which was significant at the .005 level. Among females, increasing age correlated negatively to a moderate degree with perceived susceptibility, -.5075, which was significant at the .01 level, and increasing age also correlated moderately with perceived benefits, .4669, with a significance of .01 (Table 13).

Chi-square statistics were utilized to analyze the three age categories (30-39; 40-49; and 50-60) in relation

Table 13.--Pearson Product-Moment Correlation Matrix of Age and Sex With Susceptibility, Severity, Benefits, and Barriers.

	Combined Sex	Male	Female
Suscept.	-.1983	.5309*	-.5075**
Severity	-.0625	.2749	-.1989
Benefits	.2038	-.1280	.4669**
Barriers	.3981**	.7995***	.2638

* = significant at the .05 level of confidence.
** = significant at the .01 level of confidence.
*** = significant at the .005 level of confidence.

to the total scores on the main perceptual variables. These data were also analyzed according to combined sex, male only, and female only. No significant differences were found between the age categories on the scores for the perceptual variables (Table 14).

Table 14.--Chi-square Values for Age and Sex in Relation to Susceptibility, Severity, Benefits, and Barriers.

	Combined Sex		Male		Female	
	(x^2)	(df)	(x^2)	(df)	(x^2)	(df)
Suscept.	14.98	(20)	11.16	(10)	15.87	(18)
Severity	40.13	(30)	20.00	(18)	28.99	(22)
Benefits	21.17	(16)	10.94	(10)	10.27	(10)
Barriers	17.96	(22)	18.00	(14)	18.61	(22)

Family Developmental Stage

When family developmental stage was correlated with the main perceptual variables, a fair correlation was found between increasing family developmental stages (increasing age of the youngest child) and perceived barriers to weight reduction. This correlation was .3357, which was significant at the .05 level. None of the other correlations was significant (Table 15).

Table 15.--Pearson Product-Moment Correlation of Family Developmental Stage With Susceptibility, Severity, Benefits, and Barriers.

Susceptibility	-.0868
Severity	-.1152
Benefits	.0951
Barriers	.3357*

* = significant at the .05 level.

Family History of Diabetes

When family history of diabetes mellitus (Type II) was correlated with the main perceptual variables, a fair correlation was found between perceived susceptibility and family history. This correlation, .2684, was significant at the .07 level, which is reportable, but not of significance for the present study. The other perceptual variables did not correlate significantly with family history of diabetes (Table 16).

In conclusion, the correlations which were found to be significant between the main perceptual variables and the

Table 16.--Pearson Product-Moment Correlation Of Family History of Diabetes With Susceptibility, Severity, Benefits, and Barriers.

Susceptibility	.2684
Severity	-.1903
Benefits	.1177
Barriers	.1789

modifying variables were those of increasing age and barriers; increasing age in males and both susceptibility and barriers; increasing age in females and benefits; increasing age in females and negative susceptibility; and increasing family developmental stage and barriers. No significant correlations were found between the main perceptual variables and family history of diabetes.

Research Question 7

What are the relationships between the motivational "cues to action" and the main perceptual variables of susceptibility, severity, benefits, and barriers?

When motivational "cues to action" were correlated with the main perceptual variables, a moderate negative correlation was found between motivational "cues to action" and perceived susceptibility. This correlation, -.4076, was significant at the .01 level. None of the other correlations was significant (Table 17).

Because motivational "cues to action" was one of the scales on the instrument, t-tests for independent samples were computed for the items used on the final scale

Table 17.--Pearson Product-Moment Correlation of Motivational "Cues to Action" With Susceptibility, Severity, Benefits, and Barriers.

Susceptibility	-.4076**
Severity	.2618
Benefits	-.0482
Barriers	-.2208

** = significant at the .01 level of confidence.

(Appendix D, items 42, 48, and 54) and for the individual components of the original scale; powerful others (Appendix D, items 5 and 10), chance (Appendix D, items 36, 42, and 48), and scientific and lay practitioners (Appendix D, items 15, 20, 25, 30, and 54). None of the t-values were significant (Table 18).

Table 18.--T-test for Independent Samples for Motivational "Cues to Action" and Its Three Components; Powerful Others, Chance, and Lay or Scientific Practitioners.

	Actual $\bar{X}$	Assumed $\bar{X}$	t-Value
"Cues to Action"	9.6	10.5	.20
Powerful Others	5.8	7.0	.78
Chance	10.3	10.5	.07
Lay or Scientific Practitioners	12.1	10.5	.59

Summary

In Chapter V, data were presented that described the sample in terms of age, sex, family developmental stage, family history of diabetes, and several extraneous variables.

Data were presented concerning each of the seven research questions and were analyzed with descriptive and inferential statistics. Results were presented regarding the relationships between the four main perceptual variables of susceptibility, severity, benefits, and barriers; and between these variables and modifying variables and motivational "cues to action." The reliability of the instrument was evaluated using coefficient Alpha. The necessity of utilizing only a portion of each original scale was explained, and data were presented using selected items from each scale which produced moderately high coefficient Alphas. Significant results were found using the Pearson Product-Moment correlation. An overall summary of the research study and findings is presented in Chapter VI.

CHAPTER VI

SUMMARY, INTERPRETATION, AND IMPLICATIONS OF FINDINGS

Overview

In Chapter VI, a summary and interpretation of the research findings are discussed. Implications for nursing education and practice and recommendations for future research are offered.

Summary and Interpretation of Findings

The sample consisted of 30 middle-aged, low-income obese Hispanics whose median age was 44.7 years. The sample was skewed in terms of sex, with two-thirds of the subjects being women, and age, as 70% of the subjects were over age 40. All of the subjects could be classified as obese and two-thirds of them were at significant risk to develop diabetes or other diseases associated with significant obesity (Albrink, 1975).

The original study criterion defined Hispanic as any person whose first language was Spanish. The assumption was that individuals from various parts of the Spanish-speaking world would be interviewed. However, all of the subjects

were of Mexican heritage. All of the subjects were enrolled in the low-income health clinic and had been screened by a county worker as meeting the federal criteria for the designation low-income (Appendix B). Thus, although not evenly distributed in terms of age or sex, the sample met the established criteria of being middle-aged, low-income obese Hispanic men and women.

Research Question 1

Does the middle-aged, low-income obese Hispanic perceive that he/she is susceptible to develop non-insulin dependent diabetes mellitus (Type II)?

The items used in the final analysis of perceived susceptibility (Appendix D, items 16, 37, and 43) measured susceptibility in terms of age, sex, and heredity. All of the items were general, rather than referring specifically to the individual.

16. Only very old people get diabetes.
37. Men and women have equal chances of become diabetic.
43. People whose parents are/were diabetics are more likely to become diabetic.

Because the actual mean did not differ significantly from the assumed or chance mean on the susceptibility scale, no conclusions could be drawn as to overall perceived susceptibility to Type II diabetes mellitus.

There are several possible explanations for the lack of differentiation between the actual and the assumed mean with the t-test. It is possible that the scores were widely

distributed across the whole range and thus revealed that the subjects had widely varying answers. It is also possible that a bimodal distribution existed in which a clustering of scores on one end of the scale might be offset by another mode clustered around the mean. A third possibility for the lack of differentiation between the actual and the assumed mean would be scores which clustered around the assumed mean and thus revealed that the subjects did not feel strongly one way or another about the question.

In the instance of perceived susceptibility, although it appeared from the descriptive data that the majority of the subjects (17) had scored towards the high end of the susceptibility scale, the scores were still too widely distributed to reveal any statistically significant results. Thus, the subjects had widely varying scores on whether or not they perceived themselves to be susceptible to the development of diabetes mellitus (Type II), and no definitive conclusions could be drawn from the data.

As stated in the conceptual framework, there are three main theories of disease causation within the Hispanic culture. These are divine intervention by God or spirits to punish or to challenge the individual; the personalistic "unnatural" illness caused by bewitchment or magic; and the naturalistic hot-cold dichotomy (Samora, 1978; Foster, 1953, 1978; Rubel, 1966). Measures which may be taken by an individual to decrease the potential severity of the disease entity (such as prayer) are traditionally viewed as

precautionary, rather than preventive, measures. There is no reference to the concept of primary disease prevention in the literature on traditional Hispanic beliefs.

Because of the traditional emphasis on precautionary, rather than preventive, health care measures, and the belief that man does not have control over his own destiny (Samora, 1978), it was predicted that the Hispanic subjects might not perceive themselves as susceptible to the development of Type II diabetes mellitus. The lack of significant findings may have been due to the fact that the particular items utilized in the final analysis did not accurately reflect the concept of susceptibility as an individual perception.

Research Question 2

What is the perceived severity of Type II diabetes mellitus among middle-aged, low-income obese Hispanics?

The items used in the final analysis of perceived severity (Appendix D, items 12, 44, 50, and 51) measured severity in terms of potential physical, economic, and emotional stress. Two of the items measured individual perceptions and the other two measured more general perceptions.

12. If I become a diabetic, my health will be worse in the future than it is now.
44. It is hard to get a job if you are a diabetic.
50. Becoming a diabetic is a great fear of mine.
51. A diabetic should not exercise.

The actual mean did not differ significantly from the assumed mean. Therefore, no conclusions could be drawn as

to whether or not the subjects perceived Type II diabetes mellitus as a serious disease entity. The descriptive data revealed that the scores were widely distributed across the whole range and thus the subjects held differing opinions about the perceived severity of Type II diabetes mellitus according to the items used in the analysis.

The studies reviewed in the literature provided evidence that the traditional Hispanic perception of health involved a strong "robust" appearance. The healthy person was perceived as well-fleshed, hard-working, and able to fulfill one's responsibilities in life (Schulman & Smith, 1963). Within the traditional culture, incapacitating illness was viewed as a misfortune which might result in loss of respect for the individual. Because illness was perceived as both contrary to a healthy appearance and as a potential social stigma, it is understandable that symptom-free illness generally was not acknowledged within the Hispanic culture (Clark, 1970).

Thus, it had been predicted that it still might be difficult for the Hispanic individual to perceive the potential severity of an asymptomatic disease such as diabetes mellitus (Type II) which would threaten the "robust" and active image of the healthy Hispanic adult. The data revealed a wide variation in responses, from those subjects who perceived a low potential severity of the disease to those individuals who perceived a high level of severity. The wide variation in response may have been

caused by factors such as differences in basic knowledge about the disease and differences in familial history of, or personal exposure to, persons with diabetes. It is also possible that the items used in the final analysis did not accurately measure perceived severity (especially items 50 and 51) as it was originally conceptualized and thus resulted in a wide variation of responses.

Research Question 3

Are there perceived benefits to weight reduction among middle-aged, low-income obese Hispanics?

The items used in the final analysis of perceived benefits (Appendix D, items 8, 34, and 52) measured benefits in terms of decreased risk of developing diabetes, improved health status, and increased social acceptance. One of the three items measured individual perception, while the other two were more general.

8. Fat people are no more likely to develop diabetes than thin people.

34. My family would be happy if I could lose weight.

52. A thin person tends to be healthier in general.

The actual mean did not differ significantly from the assumed mean. Therefore, no conclusions could be drawn as to whether the middle-aged, low-income obese Hispanic subjects perceived benefits to weight reduction. The descriptive data revealed a bimodal distribution. Thus, while 10 (33.3%) of the subjects scored the highest possible number of points (18) on the benefits scale, this was offset by the

eight subjects who scored 13 points, which was close to the assumed mean. The descriptive data did reveal that there were a number of subjects (10) who definitely perceived benefits to weight reduction.

The psychosocial benefits of weight reduction described in the literature included a wide variety of concepts such as increased job and social opportunities and improved body image and self-esteem which were not reflected in the items utilized in the final analysis of the data. It is also possible that item 8 (above) could have been conceptualized as a measure of perceived susceptibility rather than perceived benefits. Thus, the items used in the final analysis may not have accurately measured the perception as originally defined in the conceptual framework.

On the basis of the literature review, it had been predicted that if traditional beliefs still predominated, weight reduction would not have been perceived as socially desirable or physically beneficial because the "robust" appearance would be compromised. If, however, the local Hispanic had become somewhat acculturated to the dominant American perception that obesity carries a social and/or medical stigma, then weight reduction might be perceived as potentially beneficial.

The research results suggested that some of the Hispanic individuals studied still accepted the traditional concept of the "robust" individual as healthy, while other individuals perceived that there were benefits to weight reduction in

terms of the concepts measured. Unfortunately, it appears that the Hispanic individual today does not make a distinction between the traditionally "robust" moderately overweight person (less than 30%) who probably will not benefit physically from weight reduction (Andres, 1980) and the morbidly obese person who is at a disadvantage both socially and medically. In this context, it is interesting to note again that over two-thirds of the subjects in this study could have been categorized as morbidly obese. Because these subjects did not answer the items measuring perceived benefits differently than the moderately obese persons, the question remains of whether the morbidly obese perceived of themselves as being merely "robust."

Research Question 4

Are there perceived barriers to weight reduction among middle-aged, low-income obese Hispanics?

The items used in the final analysis of perceived barriers (Appendix D, items 29, 35, and 53) measured barriers in terms of perceived inconvenience of dieting (through eating different foods) and potentially painful physical (dizziness) or emotional (friendship) stimuli. Items measuring the perceived economic cost of dieting were not included in the final analysis. Two of the three items measured individual perceptions.

29. The types of foods on a diet are the same things I eat now.

35. Dieting won't make you feel weak or dizzy.

53. My friends don't think I should lose weight.

The actual mean did not differ significantly from the assumed mean on the t-test. Therefore, no conclusions could be drawn as to whether or not the subjects perceived barriers to weight reduction. The descriptive data revealed that the scores were widely distributed across the whole range and thus, some persons perceived barriers to weight reduction according to the items analyzed, while others did not perceive barriers.

The review of the literature did not include studies which had measured either the perceived economic cost of dieting or the perceived inconvenience associated with dieting. Therefore, items which measured those concepts were developed by the researcher based on literature dealing with Hispanic dietary habits. In contrast, there was a wealth of literature concerned with potentially painful physical or emotional stimuli related to weight reduction in a variety of populations. Thus, it had been predicted that the barrier of environmental stimuli would have applicability to this Hispanic population.

The lack of significant findings related to perceived barriers to weight reduction may have been due to several factors. The items developed by the researcher may not have adequately measured the theoretical content in terms of environmental stimuli. The perceived inconvenience item may not have measured a diet concept relevant to Hispanics,

and the perceived economic cost items, which may have been relevant to a low-income population, were not included in the final analysis.

In all four of the perceptual variable categories (perceived susceptibility, perceived severity, perceived benefits, and perceived barriers), not all of the items used in the final analysis measured actual individual perceptions. Some of the items were worded more generally to decrease potential threat to the subjects. This may have caused those items to have decreased validity as measures of individual perceptions.

Research Question 5

> What are the relationships between perceived susceptibility to and perceived severity of disease, and perceived benefits and perceived barriers to weight reduction?

There were no significant relationships between any of the main perceptual variables of susceptibility, severity, benefits, or barriers. This finding indicated that each of the variable scales was independent of the other scales in terms of content, and were mutually exclusive.

Based on the literature (Schulman & Smith, 1963), it could have been predicted that perceived susceptibility to and perceived severity of diabetes mellitus (Type II) would have correlated at least to a moderate degree within the Hispanic population. That is, those persons who felt that they were susceptible to diabetes and/or had some ability

to prevent the onset of the disease, would also perceive diabetes as a serious condition to be avoided if possible.

Becker et al.'s (1974) original Health Belief Model also predicted that perceived benefits and perceived barriers could be analyzed along a continuum. Thus, Becker et al. (1974) postulated that perceived benefits minus perceived barriers would allow a prediction as to the likelihood of preventive health action occurring (Figure 1).

The present research findings that the four perceptual variables were completely independent of one another does not allow any conclusions to be made as to the combined effects which susceptibility and severity, and/or benefits and barriers might have upon preventive health behavior. Thus, the variables must be analyzed separately in order to describe implications for nursing practice and future research.

Research Question 6

> What are the relationships between the modifying variables of age, sex, family developmental stage, and family history of diabetes, and the main perceptual variables of susceptibility, severity, benefits, and barriers?

There were significant and non-significant findings when the main perceptual variables were correlated with the modifying variables.

Age and Sex

Barriers. In the total sample of 30 individuals, increasing age was found to correlate moderately with perceived barriers, .3981. This correlation was significant at the .01 level. The older the subjects, the more likely they were to perceive that certain barriers (types of food, symptoms of weakness or dizziness, and/or the influence of friends) existed to successful weight reduction. Within the subset of male subjects, the correlation of increased age with the perception of barriers was high, .7995, and significant at the .005 level. A significant correlation was not found for women. Therefore, the significance of the total sample correlation appeared to be derived from the smaller (10 subjects) male sample.

The literature review provided no indication as to the possible causes of the perception of increased barriers with age, particularly among males. It is possible that as average weight increases with age (Silverstone, 1973), there is the general perception that weight gain is inevitable. The older male may perceive habit and lifestyle changes as too difficult to accomplish. In relation to the specific barriers measured, the older male may feel unable or unwilling to radically change his diet (types of food, item 29), may perceive that there are physical dangers to dieting at his age (weakness or dizziness, item 35), or may not wish to draw attention or possible ridicule from friends if his

dieting efforts become known (the influence of friends, item 53).

Benefits. Increasing age in women correlated moderately with perceived benefits to weight reduction, .4669, which was significant at the .01 level. The older the woman, the more benefits were perceived from weight reduction.

The types of benefits described in the literature review (improved body image and self-esteem, increased job mobility) might seem to be more meaningful to younger women who are more socially and occupationally active. However, two of the three items utilized in the final analysis measured physical benefits to weight reduction (item 8--decreased incidence of diabetes, and item 52--increased healthiness in general) which might be of more immediate importance to older women who are usually more intimately acquainted with physical disability than younger women. The older women also seemed to feel that their families would be supportive of weight reduction attempts (item 34).

Based on the particular items used in the final analysis, it is not surprising to find that increased benefits to weight reduction were perceived with increasing age among the women. There are, however, no indications from the literature to explain the findings that perceived benefits and perceived barriers were inversely related among the sexes: the older men perceived barriers, but not benefits, to weight reduction; while the older women perceived

increased benefits, but not increased barriers to weight reduction.

It is possible that these findings were related to extraneous concepts inherent in the particular items used in the final analysis. It is also possible that the older men are more conscious of the disruption which dieting would bring into their lives and are more set in their habits, while the older women may be more willing to accept the disruption in lifestyle in order to achieve improved health status. The older women also seemed to evaluate the potential reaction of significant others more positively than did the older men. From this data, it appears that the older Hispanic woman may have a better self-image than the older male Hispanic in that she perceives physical benefits to weight reduction and positive reaction from significant others.

Susceptibility. Within the male subset, increasing age also correlated moderately with perceived susceptibility to diabetes, .5309, which was significant at the .05 level. However, among females, the correlation between increasing age and perceived susceptibility was negative to almost the same degree, -.5075, significant at the .01 level.

Again, there is no literature which has dealt specifically with the effect of aging upon perceived susceptibility, but it would seem that an overall concern with health would increase as a person ages and begins to feel the effects of physical limitations. Thus, it would be reasonable to

assume that perceived susceptibility to disease in general increases with age. The finding on the male subjects is consistent with this assumption. Among the female subjects, however, increasing age correlated negatively with perceived susceptibility. The older the subject, the less likelihood that she would perceive herself susceptible to the development of diabetes mellitus (Type II). This finding is particularly interesting as two of the items used in the final analysis (items 16 and 37) dealt with age and sex in relation to perceived susceptibility. The possibilities exist that the older female Hispanic may have passed a certain age and feels a need to deny perceived susceptibility to diabetes mellitus (Type II), or that she does not perceive the potential threat of diabetes due to some external factor which affects females, but not males, in the study sample.

Family Developmental Stage

It had been predicted that the lower family developmental stages (I and II) would correlate with perceived barriers to weight reduction due to the distractions and responsibilities of raising young children. However, although a majority of the sample were in developmental stages I or II (their youngest child was less than 13 years old), there were no significant relationships between any of the perceptual variables and family developmental stages I or II.

There was a fair correlation, .3357, between perceived barriers and increasing family developmental stage (stages

III and IV). This correlation was significant at the .05 level. The family in developmental stage III or IV has teenagers in the home who are less amenable to parental control than younger children. Thus, the teenager may bring "junk" food into the home and indulge in front of the overweight parent. Teenagers also have large appetites and may legitimately need to eat frequently, which may produce painful emotional and/or physical stimuli for the overweight adult. In addition to the influences the teenager(s) may bring into the home, the parent may be relaxing his control over his own eating habits, as the parent no longer needs to be an example to the teenager who has already formed his lifelong eating habits.

It is also possible that the individual developmental stage of the adult subject, rather than the overall family developmental stage, was responsible for the finding that barriers were correlated with increased family developmental stage. The subjects with the families in the higher developmental stages were generally older themselves and may have been reflecting the overall finding that perceived barriers correlated with increasing age (especially strong among the older men). Thus, there were several possible explanations for the finding that perceived barriers correlated with increasing family developmental stage. The other perceptual variables did not correlate significantly with increasing family developmental stage.

Family History of Diabetes

There was no significant correlation between any of the main perceptual variables and family history of diabetes. It had been predicted that a strong family history of diabetes would increase the perception of susceptibility to diabetes mellitus (Type II). The correlation between perceived susceptibility and family history of diabetes was the strongest of the correlations, .2684, but was not significant at the .05 level. Thus, it could not be concluded from this study that family history of diabetes contributed to increased perceived susceptibility to the disease. However, it must be noted that only eight of the subjects claimed a family history of diabetes and only two persons (6.7%) had more than one known relative with diabetes. It is possible that the low incidence of family history of diabetes was a major cause of the non-significant correlations.

Research Question 7

What are the relationships between the motivational "cues to action" and the main perceptual variables of susceptibility, severity, benefits, and barriers?

There was a moderate negative correlation, -.4076, between perceived susceptibility and motivational "cues to action," which was significant at the .01 level. Those individuals who perceived themselves susceptible to diabetes mellitus (Type II) were less prone to believe in the necessity of motivational "cues to action" such as powerful others,

chance, or the intervention of lay or scientific health care practitioners. In contrast, those persons who strongly believed in the power of motivational "cues to action" did not feel personally susceptible to diabetes.

In terms of the individual motivational "cues to action," there were several interesting findings. The subjects strongly rejected both the concepts that spirits cause illness and that the "curandero" is an effective health care provider. They were, however, quite ambiguous about the perceived efficacy of the scientific health care provider. As with the literature review of reported Hispanic health beliefs and practices, the question must be raised of whether the Hispanic subject is revealing his/her true health care beliefs or practices, especially when it may be perceived that the researcher is looking for the "modern" answer. Because there are well-known "curanderos" in the immediate vicinity of the low-income health clinic, it was concluded that either the subjects did not wish to reveal their true familiarity with the folk health belief system or that they actually did disdain the folk system and were at least somewhat comfortable with the procedures of the scientific health clinic.

The findings of this study did not support the researcher's contention, based on the literature review, that both the folk and scientific health care systems can be acknowledged and effectively utilized by the Hispanic population simultaneously. It appears from the present

findings that it is more common for adherence to one system to result in the individual's public denial of the efficacy of the other system.

Limitations of the Findings

Sample

There were limitations to the findings in terms of several of the characteristics of the sample. There were twice as many women as men who participated in the study. The majority of clients of the low-income community clinic are female, thus the population pool from which the convenience sample was drawn may have been skewed in favor of female subjects. Female subjects were also more available for interviewing during the day as few of them were employed. Thus, some potential male participants may have been omitted due to the infrequency of their clinic visits or to conflicts during daytime interviewing hours. Evening interviews were not scheduled because the clinic was not open and because of the potential distractions of home visiting during the evenings (competition with television and children) and the personal safety of the researcher.

In addition to the sex distribution, the age range of the subjects may have played a significant role in the study findings. Although there were subjects in each of the three age categories (30-39; 40-49; and 50-60), 70% of the sample were over the age of 40. Because several of the significant findings were related to increasing age (barriers,

susceptibility, benefits), it is difficult to differentiate whether the findings were related to individual perceptions, individual developmental stage, or a combination of both factors. As previously discussed, increasing age of the individual, rather than overall increasing family developmental stage, may have produced the significant correlation between increasing family developmental stage and perceived barriers to weight reduction.

The third factor which may have affected the findings related to this particular sample is family history of diabetes. Only eight of the 30 subjects acknowledged any family history of diabetes mellitus (Type II). This finding contradicted the prediction based on the literature that diabetes mellitus (Type II) was a significant health problem among the Hispanic population. Because the sample was concentrated in the older age categories, those potential subjects with a strong family history of diabetes may have already become diabetics and thus were excluded from the sample. Older non-diabetics without significant family history may be accurate in feeling that they have low personal susceptibility to diabetes mellitus. Based on the findings related to age and family history of diabetes, it would be necessary to include a younger sample (perhaps to age 20) in order to determine whether or not the age factor was the primary cause of the significant results.

Finally, the sample may have differed in some way from the general Hispanic population in the area because the

subjects were persons who were already utilizing, and were presumably comfortable with, the scientific health care system. A sample drawn from a broader community base might have held different perceptions about both individual variables and the importance of motivational "cues to action."

Instrument

It was initially assumed that all of the subjects would prefer to have the instrument read to them in Spanish and that the instrument itself had been adequately tested for readability at a basic level by the pretest sample. Twelve of the subjects, however, requested that the instrument be read to them in English. As with the sample as a whole, some of these subjects could read Spanish and others could not. The reason given for requesting the interview in English was not because the subject could not understand Spanish and/or the interviewer, but because the instrument contained too many "fancy" words such as irritable.

Although the items had been tested for simplicity by the clinic coordinator, and in the pretest, they were too difficult for some of the subjects to understand in Spanish. Those individuals who requested the interview in English spanned the age range and were not different in birthplace from the overall sample. Berkanovic (1980) recently pointed out the importance of retranslating an instrument back into English and checking for discrepancies before the study begins. This should be accomplished by the method of blind back-translation, in which the second language version is

translated back into English by a translator unfamiliar with the study. Using this technique, awkward wordings and meanings can be avoided.

The six-point Likert scale was utilized in order to avoid an "undecided" middle category and to provide for the maximum range of choices. However, few of the subjects used either the Moderately Agree or Moderately Disagree categories. Considering the poor reading ability and lack of familiarity with written tests of many of the subjects, it might have been preferable to have utilized a four-point scale with only Strongly Agree, Agree, Disagree, and Strongly Disagree as categories.

Analysis

The lack of an even distribution of scores in all six categories of the Likert scale strongly affected the presentation and analysis of the data. The final analysis was completed with only 16 of the original 56 items. The deletion of so many of the items left the unanswered question of whether the remaining items really tapped the dimensions under investigation. Of the 16 items used in the final analysis, eight appeared to actually measure individual perceptions, while the remainder were more general in nature. Thus, it is questionable whether the final analysis actually measured individual perceptions as precisely as had been anticipated in the study design.

Strengths of this pilot study were that it was possible to follow the original procedure without major changes,

subjects were eager to participate, the language barrier was relieved through the use of the native language of the subjects (excluding those who requested the English interview), and the interview format provided a much more personal controlled environment for data collection than a mailed questionnaire. All of the questionnaires were completed and the necessary sociodemographic data were collected on each subject.

Implications for Nursing Practice

The implications for nursing practice which can be drawn from this study are based upon the conceptual framework and upon the findings related to the individual perception variables of susceptibility, severity, benefits, and barriers. Implications can also be drawn from the relationships between the perceptual variables and the modifying factors and the motivational "cues to action."

Although there were no significant findings in the individual perceptual variable categories, instrument items which most closely tapped the theoretical concepts could be incorporated into a decision tree which could be utilized as an assessment tool by nurses working with middle-aged, low-income obese Hispanics (Figure 3). For example, to test the concept of perceived susceptibility, an item which accurately tapped the dimension of perceived susceptibility would have to be developed since the items used in the final analysis of the present research were quite general in

Individual Questions Regarding

Perceived Susceptibility	Perceived Severity	Perceived Benefits	Perceived Barriers
Am I more likely to become diabetic because I am overweight?	If I become a diabetic, my health will be worse in the future than it is now. Becoming a diabetic is a great fear of mine.	My family would be happy if I could lose weight.	The types of food on a diet are the same things I eat now. My friends don't think I should lose weight.

If responses reveal positive perceptions regarding the individual variables, the nurse could plan appropriate interventions (see text).

If responses reveal little or no perception of the importance of the variable under consideration the nurse could initiate a discussion of cultural factors which might interfere with a positive perception of the variable.

Figure 3. Decision Tree Model.

focus. A question such as "Am I more likely to become diabetic because I am overweight?" might be asked.

To test the perceived severity of diabetes mellitus (Type II) as a disease entity, items which measured the potential physical, economic, and/or social implications of the diagnosis could be asked. Examples of items from the instrument which tapped individual perceptions of perceived severity were "If I become a diabetic, my health will be worse in the future than it is now," and "Becoming a diabetic is a great fear of mine."

Perceived benefits of weight reduction could be assessed through items from the instrument such as "My family would be happy if I could lose weight," while perceived barriers could be assessed through the items "The types of food on a diet are the same things I eat now" and "My friends don't think I should lose weight."

After completing the series of questions on individual perceptions, the nurse could focus attention and plan interventions based on the perceptual variables which aroused strong responses from the individual Hispanics. If susceptibility to or severity of diabetes mellitus (Type II) were perceived strongly, the nurse could introduce the concept of decreasing the threat of the disease through weight reduction. If there were little or no perceived susceptibility to and/or perceived severity of diabetes mellitus (Type II), the nurse could instigate a culturally sensitive discussion to probe the causes of the lack of perception of those variables.

If there were perceived benefits to weight reduction, the nurse could introduce a diet plan based on the individual's diet history, preferences, and family lifestyle patterns. The diet could be developed jointly by the nurse and the individual and could utilize self-management strategies (Ormiston, 1980) which might include rewards for weight loss based on the particular perceived benefits.

If there were specific barriers to weight loss identified through the questioning, the nurse could problem solve with the individual regarding possible means to decrease the perceived barriers, for example how to reduce the perceived importance of economic or inconvenience factors. As the barriers to weight reduction were resolved, the nurse could assess the readiness of the individual to begin a weight reduction plan through further questioning regarding perceived benefits and barriers to weight reduction.

Thus, the decision tree assessment tool (Figure 3) could be utilized to develop an individualized, culturally relevant weight reduction plan for the middle-aged, low-income obese Hispanic. The concept of weight reduction could be introduced only if the individual Hispanic perceived some sense of susceptibility to diabetes mellitus (Type II), of its severity as a disease entity, and of the potential benefits to weight reduction.

Several significant findings found when the individual perceptual variables were correlated with the modifying factors also have implications for nursing practice.

Increasing age in male subjects was correlated with perceived susceptibility to diabetes mellitus (Type II), while the older males also perceived strong barriers to weight reduction. The nurse could utilize these results to emphasize the importance of perceived susceptibility and to work on decreasing perceived barriers among the older male Hispanics. Similarly, because the older female Hispanics were found to perceive benefits to weight reduction, this general finding could be utilized to prompt nurses to place particular emphasis upon culturally sensitive weight reduction plans with older females.

Increasing family developmental stage was found to correlate significantly with perceived barriers. It is therefore important for the nurse to develop a family-centered approach to care which allows for the examination of barriers to weight reduction that may be related to individual and/or family developmental factors within the home. Any weight reduction program advocated by the nurse must be evaluated in regards to the feasibility of its effectiveness within the particular home environment.

In terms of the credibility of the nurse working with the Hispanic individual, the findings related to motivational "cues to action" are important. Motivational "cues to action" were found to be inversely related to perceived susceptibility. The individual who strongly believed in the power of motivational "cues to action" did not perceive himself/herself personally susceptible to diabetes. This person, however,

did acknowledge the importance of motivating forces within his/her life, and thus might be amenable to the influence of the nurse as a motivating "cues to action." Because the individual did acknowledge the importance of outside influences, the nurse, if culturally astute, could integrate health teaching and counseling into the framework of the Hispanic individual's belief system. The nurse, acting as a motivator, might be able to increase the perceived susceptibility to diabetes mellitus (Type II).

In contrast, the individual who perceived himself/herself to be personally susceptible to the development of diabetes mellitus (Type II) did not perceive the importance of motivational "cues to action." Although this type of individual does not feel the need for nursing or other outside intervention in his/her own life, he/she might be able to assist the nurse in working with Hispanics who do not perceive their own susceptibility to diabetes.

Implications for direct nursing practice have been developed from the conceptual framework, the research instrument, and the results of the research study. The implications were based upon the individual perceptual variables of susceptibility, severity, benefits, and barriers, and upon the modifying and motivational factors.

Implications for Nursing Education

Implications for nursing education can be drawn from the conceptual framework and from the literature review.

Leininger (1978) postulated that nursing, with its strong emphasis upon nurturing and caring behaviors, may be perceived more favorably by an ethnic population than the medical profession with its authoritarian stereotype. Thus, nursing educators should have a strong incentive for educating culturally sensitive providers. This education, at the undergraduate or graduate level, must not be accomplished through a formula or cookbook method of learning, but should be based upon the theoretical literature of anthropology and related cross-cultural fields. Leininger (1978) advocated that the nurse committed to cross-cultural nursing care pursue advanced education and be well-acquainted with a variety of cultural groups and their responses to health and illness. With a strong academic background, the nurse working with Hispanics could examine the health beliefs of the individual in light of the knowledge he/she had already obtained about the perceptions of health and illness in a variety of cultures.

The nurse educated at the graduate level in cross-cultural nursing and anthropology could also contribute to the development of a body of knowledge regarding ethnic health beliefs and behaviors. The review of the literature on Hispanic health beliefs revealed few recent studies. All of the information presently available was drawn from several classic, but perhaps no longer relevant, studies (Schulman & Smith, 1963; Foster, 1953; Rubel, 1960, 1966). It is imperative that further research be conducted on the health

beliefs of Hispanic individuals who are not as culturally isolated as were Schulman and Smith's informants. Theoretical and/or clinical research generated by the nurse researcher could greatly improve the present literature available on cross-cultural health beliefs and practices, and could lead to the proposal of specific nursing interventions based on more recent research data.

The decision tree model (Figure 3) is an example of specific interventions which could be proposed on the basis of nursing research. Models such as this one could be used in continuing education courses to further the assessment skills of nurses already working in cross-cultural settings, as well as in undergraduate nursing education to provide a framework for the development of culturally relevant nursing practice. Thus, concepts drawn from both the theoretical aspects of the present research study and from the actual study findings could be applied to the broad field of nursing education.

Recommendations for Future Research

1. This study should be replicated with the following modifications:
    a. A larger sample size with an equal number of male and female subjects.
    b. Decreasing the lower age limit to 25 or even 20 to allow the inclusion of more persons with significant family history of diabetes who have not yet developed the disease.

c. A more even distribution of the sample across the age ranges.
d. Writing items which measure individual perceptions rather than more general perceptions.
e. Preparation of more items in those areas which revealed significant results in this study.
f. More thorough pretesting to increase the internal consistency or reliability of the perception scales.
g. The preparation of the instrument in Spanish using a blind back-translation method to ensure equal translations.

2. Those persons who perceived themselves susceptible to diabetes mellitus (Type II) could be compared to those persons who did not perceive themselves susceptible in relation to their perceptions of the importance of motivational "cues to action."
3. The relationships between age, sex, and perceived susceptibility to diabetes mellitus (Type II) could be examined in more detail.
4. Individual perceived benefits of and perceived barriers to weight reduction could be tested to ascertain which concepts were perceived most strongly by the Hispanic population.
5. The relationship between income level and individual perceptions could be tested through comparing a higher income group of Hispanics with the low-income subjects.

6. The effect of age upon the individual perceptions could be examined in more detail.
7. Differences in individual perceptions could be tested between subjects who were first generation Americans and those Hispanics whose families had lived in the United States for longer periods of time.
8. The correlations between the perceptions of susceptibility, severity, benefits, and barriers and actual reported health behaviors could be studied.
9. The correlation between belief in motivational "cues to action" and actual reported health behaviors (including precautionary measures) could be studied.

Summary

This study contributed to the knowledge base of nursing practice by exploring health beliefs within a specific ethnic population. The individual perceptual variables of susceptibility, severity, benefits, and barriers, were studied from the subjective viewpoint of the individual. Demographic, developmental, and knowledge related modifying factors and motivational "cues to action" such as extra-human forces, and lay or scientific health care practitioners, were explored in order to further understand factors which affect an individual's perceptions of the risk of developing diabetes mellitus (Type II).

There were no significant findings generated in terms of the individual perceptual variables and the overall sample. The exploration of the modifying and motivational factors, however, did reveal significant results which provided a basis for future research. Because each individual perceptual variable was found to be independent of the other variables, no predictions could be made as to how the variables affected one another. Thus, the type of predictions for likelihood of action which Becker et al. (1974) made (Figure 1), based on a continuum model for the individual perceptual variables, could not be made in the present study. In addition, it was not possible to predict whether a strong perception of any particular variable would or would not lead to the initiation of preventive health care behavior by the individual.

Based on the research findings of this study, it could be predicted that the nurse might be effectively employed as a motivational "cues to action," particularly with those individuals who believe strongly in the power of motivating forces. The nurse would assess the individual through questioning beliefs in the individual perceptual variables (Figure 3), and would plan interventions in terms of health counseling and instruction based on the assessment of individual perceptions (Figure 4). In this manner, individual perceptions could be utilized to promote the adoption of preventive health care behavior by the middle-aged, low-income obese Hispanic.

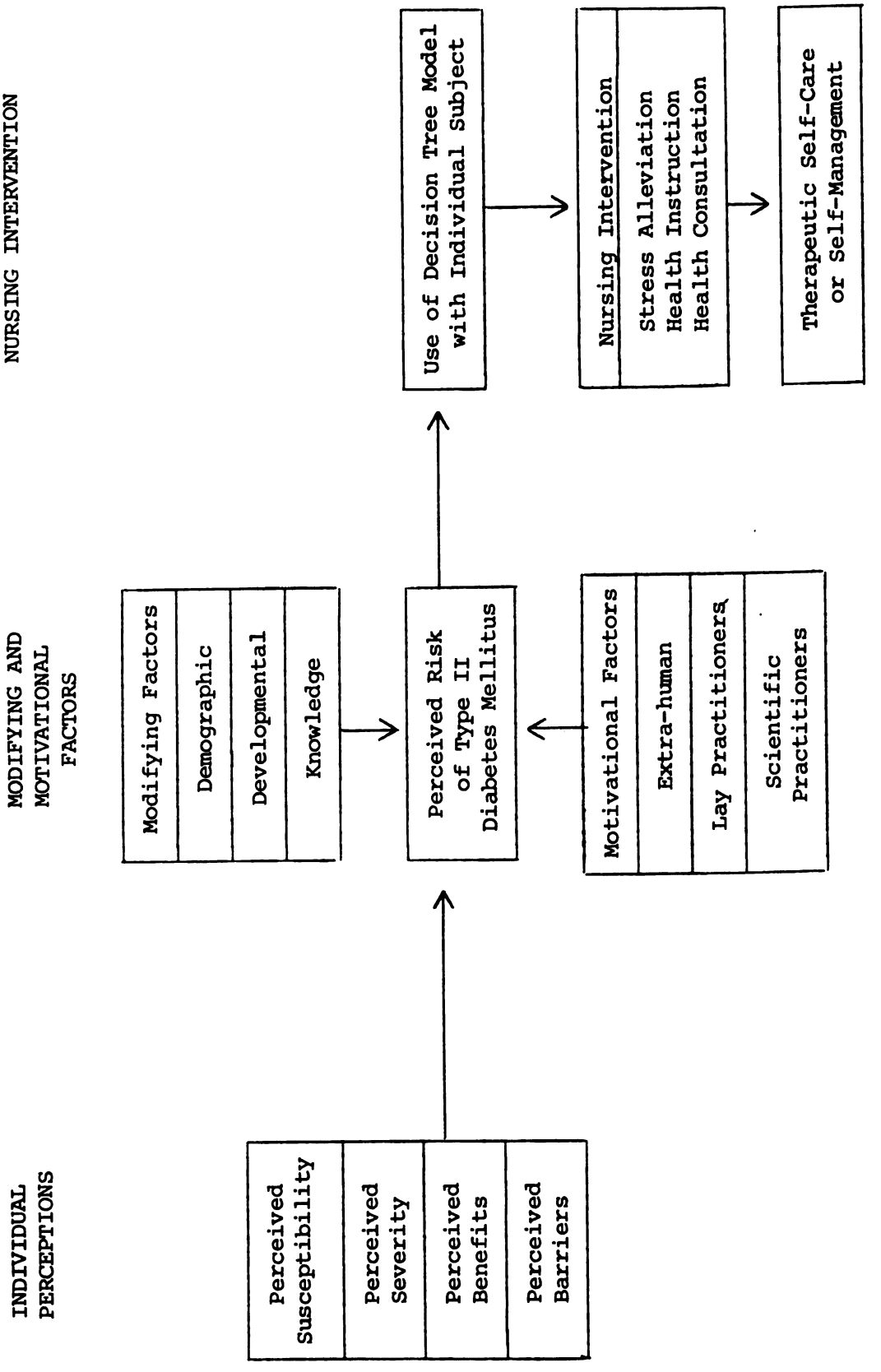

Figure 4. Modified Health Belief Model.

APPENDICES

APPENDIX A

HEIGHT-WEIGHT TABLE

APPENDIX A

HEIGHT-WEIGHT TABLE

Average Weight for Men and Women 1960-1962*

Height		Men		Women	
(in)	(cm)	(lb)	(kg)	(lb)	(kg)
57	145			117	53.2
58	147			121	55.0
59	150			121	55.0
60	152			122	55.5
61	155			124	56.4
62	158	140	63.6	128	58.2
63	160	150	68.2	126	57.3
64	163	139	63.2	126	57.3
65	165	149	67.7	135	61.4
66	168	160	72.7	142	64.6
67	170	153	69.6	140	63.6
68	173	157	71.4	131	59.6
69	175	166	75.5		
70	178	165	75.0		
71	180	166	75.5		
72	183	169	76.8		
73	185	183	83.2		
74	188	185	84.1		

Height without shoes; weight partially clothed-clothing weight estimated as averaging two pounds.

*From Weight by Height and Age of Adults. Vital Health Statistics Data. Washington, National Health Service, Pub. No. 1000, Series 11, No. 14, May 1966.

APPENDIX B

LOW-INCOME CLASSIFICATION

APPENDIX B: LOW-INCOME CLASSIFICATION
BASED ON FAMILY INCOME AND SIZE
100% - 200% OF POVERTY

Source = Federal Register
3/5/81 (Vol. 46, No. 43)

Poverty Line

FAMILY SIZE	100%	120%	140%	160%	180%	200%
1	0 - 4,309	4,310 - 5,387	5,388 - 6,464	6,465 - 7,542	7,543 - 8,619	8,620
2	0 - 5,689	5,690 - 7,112	7,113 - 8,534	8,535 - 9,957	9,958 - 11,379	11,380
3	0 - 7,069	7,070 - 8,837	8,838 - 10,604	10,605 - 12,372	12,373 - 14,139	14,140
4	0 - 8,449	8,450 - 10,562	10,563 - 12,674	12,675 - 14,787	14,788 - 16,899	16,900
5	0 - 9,829	9,830 - 12,287	12,288 - 14,744	14,745 - 17,202	17,203 - 19,659	19,660
6	0 - 11,209	11,210 - 14,012	14,013 - 16,814	16,815 - 19,617	19,618 - 22,419	22,420
7	0 - 12,589	12,590 - 15,737	15,738 - 18,884	18,885 - 22,032	22,033 - 25,179	25,180
8	0 - 13,969	13,970 - 17,462	17,463 - 20,954	20,955 - 24,447	24,448 - 27,939	27,940
9	0 - 15,349	15,350 - 19,187	19,188 - 23,024	23,025 - 26,862	26,863 - 30,699	30,700
10	0 - 16,729	16,730 - 20,912	20,913 - 25,094	25,095 - 29,277	29,278 - 33,459	33,460

APPENDIX C

PILOT TEST

APPENDIX C

PILOT TEST

The following open-ended questions were asked of 10 Hispanics; both obese and non-obese, diabetic and non-diabetic. The responses were used to generate items for the instrument.

1. How does a person get fat?
2. Is it bad to be fat?
3. Can you get sick if you are fat for a long time?
4. Who gets diabetes?
5. How serious is diabetes?
6. Is it important for a fat person to lose weight?
7. Why is it important for a fat person to lose weight?
8. Why is it hard to lose weight?

APPENDIX D

SOCIODEMOGRAPHIC DATA AND INSTRUMENT

APPENDIX D
SOCIODEMOGRAPHIC DATA AND INSTRUMENT

Sociodemographic Data

Patient number _____ (1-2) Age _____ (3-4) Sex _____ (5-6)

Birthplace (7): _____ Texas 1 _____ Mich. 2 _____ Mexico 3 _____ Flor. 4 _____ other 5

Marital Status (8): _____ Married 1 _____ Separated 2 _____ Divorced 3 _____ Widowed 4

Number of Children _____ (9-10)

Age of Oldest Child _____ (11-12) Age of Youngest Child _____ (13-14)

Religion (15): _____ Catholic 1 _____ Baptist 2 _____ Pentecost 3 _____ Other 4

Employed _____ (16-17)

Income (18): _____ 0-3,000 (1) _____ 3-6,000 (2) _____ 6-9,000 (3) _____ 9-12,000 (4) _____ 12-15,000 (5) _____ 15,000- (6)

Family History of Diabetes

paternal grandfather _____ (19)

paternal grandmother _____ (20)

maternal grandfather _____ (21)

maternal grandmother _____ (22)

father _____ (23)

mother _____ (24)

brothers _____ (25)

sisters _____ (26)

children _____ (27)

	Agree +++	Agree ++	Agree +	Disagree +	Disagree ++	Disagree +++
1. A person cannot "catch" diabetes from other people.						
2. Diabetics get sick easier than other people.						
3. If a person loses weight, they are less likely to become a diabetic.						
4. My family doesn't want me to be too thin.						
5. If I pray everyday, God won't let me get sick.						
6. Diabetes is a rare disease.						
7. A diabetic can be as healthy as anyone else.						
8. Fat people are no more likely to develop diabetes than thin people.						
9. Most people look best if they carry a little extra weight.						
10. If people get sick, it is usually because a spirit is involved.						
11. Diabetes runs in families (is hereditary).						
12. If I become a diabetic, my health will be worse in the future than it is now.						
13. I would feel more attractive if I could lose weight.						
14. Most weight reduction diets require a lot of expensive foods.						
15. It is best to go to the curandero first when one feels sick.						
16. Only very old people get diabetes.						
17. Diabetics can "get over" having diabetes, it can "go away."						
18. Thin people are no happier than fat people.						
19. It is easy to lose weight without buying special "diet foods."						

	Agree +++	Agree ++	Agree +	Disagree +	Disagree ++	Disagree +++
20. A person should be very ill before he/she goes to the doctor or nurse.						
21. People who are overweight tend to become diabetic.						
22. A diabetic needs to be careful with his/her diet.						
23. Thin people are more active than fat people.						
24. It is difficult to cook separate meals for the person who is "dieting."						
25. A doctor or nurse really can't do much to help a person who is sick.						
26. Women with many children tend to become diabetic.						
27. A diabetic can eat anything he/she wants as long as it isn't sweet.						
28. Thin people feel tired most of the time.						
29. The types of food on a diet are the same things I eat now.						
30. Even when I feel well, I go to the doctor or nurse for a checkup.						
31. Only children and young adults get the serious type of diabetes.						
32. Only children who have diabetes have serious complications.						
33. Diabetics can get infections easily.						
34. My family would be happy if I could lose weight.						
35. Dieting won't make you feel weak or dizzy.						
36. No matter what I do, if I am going to get sick, I will get sick.						
37. Men and women have equal chances of becoming diabetics.						
38. A diabetic may lose his/her eyesight.						

	Agree +++	Agree ++	Agree +	Disagree +	Disagree ++	Disagree +++
39. A diabetic is often too sick to work at a job.						
40. Thin people tend to live longer.						
41. Most people on diets are irritable.						
42. Most things that affect my health happen to me by accident.						
43. People whose parents are/were diabetics are more likely to become diabetic.						
44. It is hard to get a job if you are a diabetic.						
45. The medicine is expensive if you are a diabetic.						
46. It is best to have a little extra fat to protect yourself if you get sick.						
47. It is hard to say no when friends offer food.						
48. My good health is largely a matter of good fortune.						
49. A person who does hard physical work will not become a diabetic.						
50. Becoming a diabetic is a great fear of mine.						
51. A diabetic should not exercise.						
52. A thin person tends to be healthier in general.						
53. My friends don't think I should lose weight.						
54. A curandero cannot help me if I am physically ill.						
55. Diabetics worry about their disease a lot.						
56. My family wants me to lose weight.						

Patient number _____ 1-2

		Si +++	Si ++	Si +	No -	No - -	No - - -
1. Alquien no puede adquirir la diabetis de otras personas.	(3)						
2. Los diabéticos llegan a ser enfermos más facilmente que otra gente.	(4)						
3. Si una persona pierda peso, es menos probable que llegará a ser diabética.	(5)						
4. Mi familia no quiere que yo esté tan delgado.	(6)						
5. Si rezo cada dia, Dios no me dejará enfermarme.	(7)						
6. La diabetis es una enfermedad rara.	(8)						
7. Un diabético puede estar tan sano como otra persona.	(9)						
8. No es más probable que la gente gorda tenga la diabetis que las personas delgadas.	(10)						
9. La mayoría de la gente parece mejor si tienen un poco de peso extra.	(11)						
10. Si alquien se enferma, es por causa de un espíritu, por lo general.	(12)						
11. La diabetis es una enfermedad hereditaria.	(13)						
12. Si llegara a ser diabético, mi salud sería peor en el futuro de lo que es ahora.	(14)						
13. Me sentiría más guapo si yo pudiera perder peso.	(15)						
14. La mayoría de las dietas requiere muchos alimentos caros.	(16)						
15. Es mejor ir al curandero en primer lugar cuando se sienta mal.	(17)						
16. Solamente la gente muy vieja adquiere la diabetis.	(18)						
17. Los diabéticos pueden recuperarse de la diabetis. La enfermedad puede superarse.	(19)						
18. Las personas delgadas no estan más felíz que las personas gordas.	(20)						
19. Es fácil perder peso sin comprar alimentos dietéticos especiales.	(21)						

		Si +++	Si ++	Si +	No -	No - -	No - - -
20. Alquien debería estar muy enfermo antes de que vaya a un médico o a una enfermera.	(22)						
21. Las personas gordas tienden a ser diabéticas.	(23)						
22. Un diabético debe tener cuidado con su dieta.	(24)						
23. Las personas delgadas son mas activas que las personas gordas.	(25)						
24. Es difícil preparar comidas distintas para la persona que está a dieta.	(26)						
25. Ni un médico ni una enfermera peuden hacer mucho para ayudar a una persona enferma.	(27)						
26. Las mujeres que tienen muchos ninos pueden llegar a ser diabéticas.	(28)						
27. Un diabético puede come cualquier cosa que quiera en tanto que no es dulce.	(29)						
28. La gente delgada esta consada casi todo el tiempo.	(30)						
29. Los alimentos de una dieta es igual de los que como ahora.	(31)						
30. Aún cuando me sienta bien, voy al médico o a la enfermera para un "chequeo".	(32)						
31. Solamente los niños y los jóvenes adquieren el tipo grave de la diabetis.	(33)						
32. Solamente los niños que tienen la diabetis tienen complicaciones graves.	(34)						
33. Los diabéticos pueden tener infección facilmente.	(35)						
34. Le alegraría a mi familia si pudiera perder peso.	(36)						
35. Estar a dieta no le hará sentirse débil o desvanecido.	(37)						
36. Si voy a ponerse enfermo, estaré enfermo, no importa lo que haga.	(38)						
37. Para los hombres y las mujeres hay igual posibilidad de ser diabético.	(39)						

		Si +++	Si ++	Si +	No -	No - -	No - - -
38. Puede ser que un diabético pierda la vista.	(40)						
39. Muchas veces un diabético es demasiado enfermo para trabajar.	(41)						
40. Las personas delgadas tienden a vivir más tiempo.	(42)						
41. La mayoría de la gente que está a dieta está irritable.	(43)						
42. Las cosas que afectan a mi salud me suceden por accidente.	(44)						
43. Es mas probable que las personas que tengan padres diabéticos llegarán a ser diabeticas.	(45)						
44. Es difícil encontrar empleo si uno es diabético.	(46)						
45. La medicina para un diabético es muy cara.	(47)						
46. Es mejor tener un poco de peso extra para protegerse si se enfermará.	(48)						
47. Es difícil rehusar cuando mis amigos me ofrecen comida.	(49)						
48. Mi buena salud es en gran parte resulta de mi buena suerte.	(50)						
49. Alquien que hace trabajo físico y duro no sera diabética.	(51)						
50. LLegar a ser diabético es un gran miedo mío.	(52)						
51. Un diabético no debe hace ejercicio.	(53)						
52. Una persona delgada es, por lo general, mas sana.	(54)						
53. Mis amigos no piensan que debo perder peso.	(55)						
54. Un curandero no puede ayudarme si you estoy fisicamente enfermo.	(56)						
55. Los diabéticos se preocupan mucho por su enfermedad.	(57)						
56. Mi familia quiere que you pierda peso.	(58)						

APPENDIX E

CONSENT LETTER AND HUMAN RIGHTS PROTECTION

Michigan State University

School of Nursing

A Study of the Perceptions about the Risks of Developing Maturity-Onset Diabetes

Suzanne Van Wieren, Family Nurse Clinician Student 355-7764

Each person has beliefs or ideas about health and illness which affect his/her behavior. Understanding what people believe about their health can help a nurse clinician to plan more effective health care for them.

In this study I would like to ask you questions about what you believe about obesity, about diabetes, about losing weight, and about your feelings about health care. The whole interview will take about 30 minutes of your time.

Sometimes answering such questions can make you or your family or friends thinks of questions you would like to have answered. If you have any questions during the interview, please ask them. If you or anyone close to you thinks of any questions later, please contact me through the Cristo Rey Community Center Clinic and Connie Marin, R.N. at 372-4700.

Your answers are completely confidential and your name will not be attached to your questionnaire. No one else will know how you answered the questions. Your participation in the study may not benefit you personally, but the information we receive may be used to help nurses better prepare to serve Spanish-speaking persons with similar beliefs. You are free to stop the interview at any time if you do not wish to continue.

_____

Suzanne Van Wieren, R.N. date

I voluntarily consent to participate in this study. I have had an opportunity to ask questions.

_____

signature of subject date

MICHIGAN STATE UNIVERSITY

School of Nursing

Una investigación de las percepciones sobre los riesgos de adquirir la diabetis.

Suzanne Van Wieren, Family Nurse Clinician Student 355-7764

Cada persona tiene creencias o ideas acerca de la salud y la enfermedad que afectan sus actitudes. Cuando una enfermera clínica entiende lo que cree la gente acerca de su salud, ella puede planear cuidado de salud mas eficaz para ellos.

En este estudio quisiera hacerlo unas preguntas acerca de lo que cree Vd. sobre la obesidad, la diabetis, la pérdida del peso, y sus sentimientos acerca del cuidado de la salud. Toda la entrevista tomará unos 30 minutos.

A veces contestar tal preguntas puede sugerir a Vd. o a su familia o a sus amigos preguntas que a Vd. le gusta tener respondida. Si Vd. tiene preguntas durante la entrevista, pregúntemelas, por favor. Si Vd. o una persona cercana piensa de otras preguntas más tarde, haga Vd. el favor de ponerse en contacto conmigo por medio de la clínica de Cristo Rey y la Sra. Connie Marin, R.N. Teléf. 372-4700.

Sus repuestas son completamente confidenciales y su nombre no estará puesto en el cuestionario. Ningún otro sabrá sus respuestas. Quizás su participación en el estudio no le beneficiará a Vd. personalmente, pero la información que recibimos se utilizará para ayudar a las enfermeras en prepararse mejor para servir a la gente de habla hispana que tiene creencias e ideas semejantes a las de Vd. Puede Vd. parar la entrevista en cualquier momento si no quiera continuarla.

_____

Suzanne Van Wieren, R.N. fecha

Doy mi consentimiento voluntario para participar en este estudio. Yo he tenido la oportunidad de hacer preguntas.

_____

firma del sujeto fecha

MICHIGAN STATE UNIVERSITY
SCHOOL OF NURSING

HUMAN SUBJECTS REVIEW COMMITTEE APPLICATION*

Date form completed: June 1, 1980

I. Principal Investigator

Name: Suzanne M. Van Wieren

Address: 701-105 Cherry Lane, East Lansing, Mi. 48823

Phone: home 355-7764 office none

Position/Title: graduate student Family Nurse Clinician program

Qualifications: B.A. University of California- Sociology
B.S.N. University of California- Nursing

Names and Qualifications of Associates: Barbara Given, R.N., P.H.D.
Louise Brouillette, R.N., M.S.N.
Nancy Kline, R.N., M.S.N.
Brigid Warren, R.N., M.S.N.

II. Names and qualifications of other persons responsible for performing or supervising procedures:

Connie Marin, R.N. - Health clinic coordinator- Cristo Rey Community Center Clinic- Lansing, Mi.

III. Title of proposal or activity: What are the perceptions of low-income middle-aged obese Latinos about the relationship between obesity and the perceived risk of developing maturity-onset (Type II) Diabetes mellitus?

*For further information and clarification, please refer to the Human Subjects Review Committee "Policies and Procedures Guidelines."

IV. Beginning date of proposed activitiy: June 1980

V. Anticipated completion date: Sept. 1980

VI. Is this activity related to a grant or contract? Yes ____ No x. If yes, complete A-I.

A. Is it related to a training grant? Yes ____ No ____
B. Is it related to a fellowship? Yes ____ No ____
C. Has proposal been submitted? Yes ____ No ____
D. Has award been made? Yes ____ No ____
E. Name of Principal Investigator shown (or to be shown) on proposal: _____
F. Name of agency to which proposal was (or will be) submitted: _____
G. If continuation (or already awarded), what is the agency's grant or contract number? _____
H. Inclusive dates of grant or contract? From _____, through _____
I. Will activity be performed if funding is not received? Yes ____ No ____

VII. Checklist to be completed by investigator:

A. Will another organization or agency be involved (hospitals, Department of Public Health, others)? Yes x No ____
Name of other organization(s) or agency:

Cristo Rey Community Center

Name and titles of person(s) in agency from whom permission to do study must be obtained:

Connie Marin, R.N.-Health clinic coordinator

B. Will an investigational new drug (IND) be used? Yes ____ No x
If yes, name, proposed dosage, status with Food and Drug Administration and IND number. Enclose one copy of available toxicity data.

C. Will other drugs be used? If yes, names and dosages. Yes ____ No x

D. Will a written consent form(s) be used? (Required in most cases). Yes xx No ____

1. If no, explain why a written consent form will not be used.

2. If no, is a statement attached describing what participants will be told? Participants must be informed of all elements of VII-E below. Yes ____ No ____
A written script of the verbal explanation must be attached to this request.

E. Does (Do) the consent form(s) include:

"Michigan State University" heading? Yes x No ____

Name, position, department and telephone number of investigator? Yes x No ____

Project Title? Yes x No ____

Date? Yes x No ____

Copy for subject? Yes x No ____

Signature and date lines to be completed by subject (and legal guardian, if subject is a minor or is legally incompetent), and investigator? Yes x No ____

The following elements of consent expressed in lay terms:

Purpose--benefits to be expected or knowledge hoped to be gained? Yes x No ____

Procedures to be followed only for the purpose of this activity, and time involved? Yes x No ____

Identification of the procedures that are experimental? Yes ____ No x

no experimental procedures

Nature and amount of risk, or substantial stress or discomfort involved?	Yes x No ___
Appropriate alternate procedures that might be advantageous or available to subject? (Show N/A, not applicable, when there are none.)	Yes ___ No ___ n/a
Costs the subject may immediately or ultimately be forced to bear and what reimbursement of costs or other compensation the subject will receive as the result of participation in this activity?	Yes x No ___
Voluntary nature of participation and freedom to withdraw at any point without penalty?	Yes x No ___
Opportunity to ask questions at any time?	Yes x No ___
Assurance that subject's identity will remain confidential?	Yes x No ___

Please follow the consent form guideline attached to this application form.

F. Describe how, by whom, and where consent will be obtained.

Subjects will initially be contacted in person or by telephone by the clinic nurse and asked if they will consent to being contacted by a graduate student nurse interested in talking to Latinos. If the answer is affirmative, the principal investigator will contact them, explain the study, distribute the consent form, have it read to the subjects and have them sign it when the interview actually occurs.

VIII. Subjects

A. Criteria for selection (include sample size and age group).

40 adults (male and female) who are between the ages of 30 and 60, who are or have been married, are low-income (as defined by the Michigan poverty level), are obese (20% over ideal weight for height as measured with scale and tape at the site of the interview), are Latino (identify Spanish as their first language) will be selected using a convenience sample (the first 40 males or females who meet the criteria will be selected.

B. Source of subjects (including patients), and how they will be approached.

The subjects will be Latinos in the Lansing area who are known to the Cristo Rey Community Center and its personnel. They will be approached in person or by telephone by Connie Marin, R.N. of the Cristo Rey Health Clinic and asked if they would consent to an interview about their health beliefs.

C. Will subjects be paid or otherwise compensated? No If so, what amount? _____ If not, how might the subject benefit?

The subjects will be able to ask any questions regarding obesity and/or diabetes which they might have, and would be compensated through health teaching. They would also receive information on services available at Cristo Rey.

D. Location where procedures will be carried out, e.g., patient's bedside, conference room, etc.

The interviews will be conducted either in a quiet room at the Cristo Rey Community Center or in the subject's home, preferably in a quiet room.

IX. Confidentiality and Anonymity

A. Steps to ensure that participation by subject will be kept confidential.

The consent form and interview answer sheet will be separated and only the consent form will have the subject's name on it. The answer sheet will be coded, but no code number will be placed on the consent forms.

B. Provisions to ensure anonymity of documents and data (include provisions for control over access to documents and data).

The answer sheets and consent forms will be stored in two separate cabinets in a locked apartment to limit access.

X. What publications might be helpful to the committee in consideration of this application? (Answer only if these might expedite review.)

XI. Outline of Activity.

Provide answers in spaces following A-D below (add sheets, when needed).

A. Discuss other methods of data collection and reason for rejection. (i.e., Is there another method for collecting data which would put the subject at less risk? If so, why was it rejected?)

Handing out the questionnaire or mailing it and allowing the subjects to complete it alone were other methods, but were rejected because many of the subjects cannot read either Spanish or English. It would not have been possible to control for whether they understood the items sufficiently to answer them. The alternative methods would have provided more anonymity.

B. If any deception (withholding complete information) is required for the validity of this activity, explain why this is necessary. Describe the procedure for debriefing.

There is no deception required.

C. Potential significance of the results (i.e., to patients, society, nursing).

The results of the obese, low-income, middle-aged Latinos perceptions about the perceived risk of developing diabetes can be utilized to develop culture-specific weight-reduction programs, to aid in individual counseling and to provide nursing with a beginning framework for implementing care among a high-risk minority population.

D. Nature and degree of risk (stress, discomfort, side effects). Risk refers to all risks--physical, psychological, social, legal, etc.

There is no physical or legal risk. Psychological risk might arise from anxiety over doing a new procedure such as answering a questionnaire since this may be the first exposure as research subjects for many of these people.

Social risk would be either approval or disapproval of family or friends about participation in the study which could occur either in the home or clinic setting.

1. **Possible adverse effects. Include an assessment of the likelihood and seriousness of such effects or risks.**

There is a possibility of anxiety or confusion about having the interview which might produce suspicion of future work. Also, if there was censure from the community, there might be a reluctance to participate in the future.

Both of these risks are potentially serious for any health worker in another culture, but the likelihood of such adverse effects actually occurring appear to be remote in this instance, as the clients at Cristo Rey have been very cooperative in the past.

2. **What safety precautions or counter-measures are planned to minimize risks in order to protect the rights and welfare of the individuals?**

The interview will be conducted in Spanish so that the subjects have a chance to ask any questions in the language with which they are most comfortable. The benefits of reducing the incidence of diabetes in the population group as a whole will be explained to any interested community members to offsett censure or misinformation about the study.

3. **Follow-up planned for procedures. Include debriefing statement.**

All subjects will be invited to utilize the Cristo Rey clinic if they are not already familiar with it. The subjects will be able to contact the principal investigator through the clinic.

4. **Arrangements for financial responsibility for adverse effects.**

There is no expectation that any adverse psychological or social implication would require financial reimbursement.

XII. If you are a graduate student, have you informed your thesis committee that you are filing this application? Yes _x_ No ____

Suzanne M. Van Wieren
Signature of Principal Investigator

Signature of Thesis Committee Member
Approving This Application Form

BIBLIOGRAPHY

BIBLIOGRAPHY

Albrink, M. J. Obesity. In P. B. Beeson and W. McDermott (Eds.), Textbook of Medicine. Philadelphia: W. B. Saunders Company, 1975.

Allon, N. Fat is a dirty word: Fat as a sociological and social problem. In A. Howard (Ed.), Recent Advances in Obesity Research I. London: Newman Publishing, 1975.

Allon, N. The stigma of overweight in everyday life. In G. A. Bray (Ed.), Obesity in Perspective. Washington, D.C.: Government Printing Office, 1973.

Andres, R. Effect of obesity on total mortality. International Journal of Obesity, 1980, 4, 381-386.

Antonovsky, A. & Kats, R. The model dental patient: An empirical study of preventive health behavior. Social Science and Medicine, 1970, 4, 367-380.

Baca, J. E. Some health beliefs of the Spanish-speaking. In R. A. Martinez (Ed.), Hispanic Culture and Health Care. Saint Louis: C. V. Mosby Company, 1978. Reprinted from American Journal of Nursing, 1969, 69, 2172-2176.

Becker, M. H. (Ed.). The health belief model and personal health behavior. Thorofare, N.J.: Charles B. Slack, Inc., 1974.

Becker, M. H., Drachman, R. H., & Kirscht, J. P. A new approach to explaining sick-role behavior in low-income populations. American Journal of Public Health, 1974, 64, 205-216.

Berkanovic, E. The effect of inadequate language translation on Hispanics' responses to health surveys. American Journal of Public Health, 1980, 70, 1273-1276.

Borg, W. & Gall, M. Educational research: An introduction. (2nd ed.) New York: David McKay Company, Inc., 1971.

Bowen, R. G., Rich, R., & Schlotfeldt, R. M. Diabetes mellitus patient interview. In M. J. Ward & C. A. Lindeman (Eds.), Instruments for measuring nursing practice and other health care variables. Volume I. Hyattsville, Md.: U.S. Dept. HEW, Publication number HRA 78-53, 1979.

Boyden-West, R. The effect of ethnic background and health locus of control on health maintenance practices related to the risk factors of heart disease. Unpublished master's thesis, Michigan State University, 1980.

Bray, G. A. The obese patient. Philadelphia: W. B. Saunders Co., 1976.

Bruch, H. Eating disorders: Obesity, anorexia nervosa and the person within. New York: Basic Books, Inc., 1973.

Bruch, H. The importance of overweight. New York: W. W. Norton and Company, Inc., 1957.

Bullough, B. Poverty, ethnic identity and preventive health care. Journal of Health and Social Behavior, 1972, 13, 347-359.

Bureau of the Census. Statistical Abstract of the United States. (100th edition) Washington, D.C.: Government Printing Office, 1979.

Charles, R. N. & Medard, F. Relation of diabetes mellitus to nutrition in Haiti. Diabetes, 1969, 18 (Supplement 1), 349.

Chase, P. E., Kumar, V., Dodds, J. M., Sauberlich, H. E., & Hunter, R. M. Nutritional status of pre-school Mexican-American migrant farm children. American Journal Diseases Children, 1971, 122, 316-324.

Clark, M. Health in the Mexican-American culture. (2nd ed.) Berkeley: University of California Press, 1970.

Cohen, A. M. Prevalance of diabetes among different ethnic Jewish groups in Israel. Metabolism, 1961, 10, 50-58.

Craddock, D. Obesity and its management. Edinburgh: Churchill Livingston, 1978.

Craddock, D. Psychological and personality factors associated with successful weight reduction: A 10-year follow-up of 134 personal cases. In A. Howard (Ed.), Recent Advances in Obesity Research I. London: Newman Publishing Company, 1975.

Crano, W. & Brewer, M. Principles of research in social psychology. New York: McGraw-Hill Book Company, 1973.

Crisp, A. H. & McGuinness, B. Jolly fat. Relation between obesity and psychoneurosis in the general population. British Medical Journal, 1976, i, 7-9.

Davis, A. Social class influences upon learning. Cambridge, Mass.: Harvard University Press, 1948.

Davis, A., Gardner, B. B., & Gardner, M. R. Deep south. Chicago: The University of Chicago Press, 1941.

Dorsey, P. R. & Jackson, H. Q. Cultural health traditions: The Latino-Chicano perspective. In M. F. Branch & P. P. Paxton (Eds.), Providing safe nursing care for people of color. New York: Appleton-Century-Crofts, 1976.

Duvall, E. Family development. (5th ed.) Philadelphia: J. B. Lippincott Company, 1977.

Dworkin, A. G. Stereotypes and self-images held by native-born and foreign-born Mexican-Americans. Sociology and Social Research, 1964-5, 49, 214-224.

Edgerton, R. B., Karno, M., & Fernandez, I. Curanderismo in the metropolis. In R. A. Martinez (Ed.), Hispanic culture and health care. Saint Louis: The C. V. Mosby Company, 1978.

Federal Register. 100%-200% of poverty-based on family income and size. Washington, D.C. Government Printing Office (46, no. 43), 1981.

Festinger, L. Theory of cognitive dissonance. Evanston, Ill.: Row, Peterson, 1957.

Fishbein, M. & Ajzen, I. Belief, attitude, intention and behavior. Redding, Mass.: Addison-Wesley Publishing Company, 1975.

Foster, G. M. Relationships between Spanish and Spanish-American folk medicine. Journal of American Folklore, 1953, 66, 201-217.

Foster, G. M. & Anderson, B. G. Medical Anthropology. New York: John Wiley and Sons, 1978.

Freed, S. C. Factors in the development and treatment of obesity. Journal of the American Medical Association, 1947, 133, 369.

Garn, S. M., Bailey, S. M. Cole, P. E., & Higgins, I. T. Level of education, level of income, and level of fatness in adults. American Journal of Clinical Nutrition, 1977, 30, 721-725.

Gecas, V. Self-conceptions of migrant and settled Mexican-Americans. Social Science Quarterly, 1973, 54, 579-596.

Goldblatt, P. B., Moore, M. E., & Stunkard, A. J. Social factors in obesity. Journal of the American Medical Association, 1965, 192, 1039-1044.

Gonzales, H. H. Health care needs of the Mexican-American. In E. Carnegie (Ed.), Ethnicity and health care. (Publication number 14-1625) New York: National League of Nursing, 1976.

Haefner, D. P. & Kirscht, J. P. Motivational and behavioral effects of modifying health beliefs. Public Health Reports, 1970, 85, 478-484.

Hamburger, W. W. Emotional aspects of obesity. Medical Clinics of North America, 1951, 35, 483-499.

Harrington, M. The other America. New York: MacMillan Company, 1962.

Harris, M. The rise of anthropological theory. New York: Crowell, 1968.

Hautman, M. A. Folk health and illness beliefs. Nurse Practitioner, 1979, 4, 23, 26-27, 31.

Hochbaum, G. M. Public participation in medical screening programs: A sociopsychological study. (Public Health Service Publication number 572.) Washington, D.C.: United States Government Printing Office, 1958.

Holland, W. R. Mexican-American medical beliefs: Science or magic? In R. A. Martinez (Ed.), Hispanic culture and health care. Saint Louis: C. V. Mosby Company, 1978. Reprinted from Arizona Medicine, 1963, 20, 89-102.

Johnson, C. A. Nursing and Mexican-American folk medicine. In R. A. Martinez (Ed.), Hispanic culture and health care. Saint Louis: The C. V. Mosby Company, 1978.

Johnston, M. Folk beliefs and ethnocultural behavior in pediatrics. Nursing Clinics of North America, 1977, 12, 77-86.

Kasl, S. V. & Cobb, S. Health behavior, illness behavior, and sick-role behavior. Archives of Environmental Health I, 1966, 12, 246-266 and II, 1966, 12, 534-541.

Kaufman, M., Lewis, E., Hardy, A. U., & Droulx, J. Families of the fields--their food and their health. Florida State Division of Health, monograph number 13, 1973.

Kay, M. A. Health and illness in a Mexican-American barrio. In. E. Spicer (Ed.), Ethnic medicine in the southwest. Tucson, Arizona: The University of Arizona Press, 1977.

Kegeles, S. S. Some motives for seeking preventive dental care. Journal of the American Dental Association, 1963a, 67, 90-98.

Kegeles, S. S. Why people seek dental care: A test of a conceptual formulation. Journal of Health and Human Behavior, 1963b, 4, 1966-1973.

Kiell, N. (Ed.). The Psychology of Obesity. Springfield, Ill.: Charles C. Thomas, 1973.

Kirscht, J. P., Haefner, D., Kegeles, S., & Rosenstock, I. A national study of health beliefs. Journal of Health and Human Behavior, 1966, 7, 248-254.

Knowler, W. C., Bennett, P. H., Bottazzo, G. F., & Doniach, D. Islet cell antibodies and diabetes mellitus in Pima Indians. Diabetologia, 1979, 17, 161-164.

Kohrs, M. B., Wang, L. L., Eklund, D., Paulsen, B., & O'Neal, R. O. The association of obesity with socioeconomic factors in Missouri. American Journal of Clinical Nutrition, 1979, 32, 2120-2128.

Kupferer, H. J. Health practices and educational aspirations as indicators of acculturation and social class among the Eastern Cherokee. Social Forces, 1962, 41, 154-163.

Langlie, J. K. Social networks, health beliefs, and preventive health behavior. Journal of Health and Social Behavior, 1977, 18, 244-260.

Larson, L. B., Dodds, J. M., Massoth, D. M., & Chase, P. E. Nutritional status of children of Mexican-American migrant families. Journal American Dietetic Association, 1974, 64, 29-41.

Lee, I. C. Medical care in a Mexican-American community. Los Alamitos, Ca.: Hwong Publishing Company, 1976.

Leininger, M. Transcultural nursing. New York: John Wiley and Sons, 1978.

Leventhal, H., Hochbaum, G., & Rosenstock, I. Epidemic impact on the general population in two cities. The impact of Asian influenza on community life: A study in five cities. Washington, D.C.: United States Department of Health, Education, and Welfare, Public Health Service Publication number 766, Government Printing Office, 1960.

Lewin, K. A dynamic theory of personality: Selected papers. (Translated by D. K. Adams and K E. Zener). New York: McGraw Hill Book Company, Inc., 1935.

Lewis, O. A study of slum culture: Backgrounds for La Vida. New York: Basic Books, 1968.

Lewis, O. Children of Sanchez. New York: Random House, 1961.

Lewis, O. Five families. New York: Basic Books, 1959.

McCance, C. Psychiatric factors in obesity. Dissertation in requirement for diploma of Psychological Medicine, University of London, 1961.

McGanity, W. J. Nutrition survey in Texas. Texas Medicine, 1969, 65, 40-49.

McLean Baird, I., Silverstone, J. T., Grimshaw, J. J., & Ashwell, M. A. Prevalance of obesity in a London borough. In A. Howard (Ed.), Recent advances in obesity research: I. London: Newman Publishing Co., 1975.

Madsen, W. The Mexican-Americans of south Texas. (2nd ed.) New York: Holt, Rinehart and Winston, 1973.

Martin, W. C. Panel discussion: The obesity problem. Medical Challenge, 1977, 52.

Martinez, C. & Martin, H. W. Folk diseases among urban Mexican-Americans. In R. A. Martinez (Ed.), Hispanic culture and health care. Saint Louis: The C. V. Mosby Company, 1978.

Martinez, R. A. (Ed.). Hispanic culture and health care. Saint Louis: C. V. Mosby Company, 1978.

Mayer, J. Obesity. In R. S. Goodhart and M. E. Shils (Eds.), Modern nutrition in health and disease. Philadelphia: Lea and Febiger, 1980.

Mayer, J. Physiology of hunger and satiety: Regulation of food intake. Modern Nutrition in Health and Disease. Philadelphia: Lea and Febiger, 1975.

Michigan Department of Public Health. Priority Health Problems of Michigan, 1979-1980. Lansing, Mi.: 1979.

Mitchell, H. S., Rynberger, H. J., Anderson, L. A., & Dibble, M. V. Nutrition in health and disease. New York: J. B. Lippincott, 1976.

Moore, M. E. Stunkard, A. J., & Srole, L. Obesity, social class and mental illness. Journal of the American Medical Association, 1962, 181, 962-966.

Mouratoff, G. J., Carroll, N. V., & Scott, E. M. Diabetes mellitus in Eskimos. Journal of the American Medical Association, 1967, 199, 961-966.

Murray, R. B. & Zentner, J. P. Nursing concepts for health promotion. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1976.

Nall, F. C. & Speilberg, J. Social and cultural factors in the responses of Mexican-Americans to medical treatment. In. R. A. Martinez (Ed.), Hispanic culture and health care. Saint Louis: C. V. Mosby Company, 1978. Reprinted from Journal of Health and Social Behavior, 1967, 8, 299-308.

National Diabetes Data Group. Classification and diagnosis of diabetes mellitus and other categories of glucose intolerance. Diabetes, 1979, 28, 1039-1057.

Nisbett, R. E. Determinants of food intake in human obesity. Science, 1968a, 159, 1254-1255.

Nisbett, R. E. Taste, deprivation, and weight determinants of eating behavior. Journal of Personality and Social Psychology, 1968b, 10, 107-116.

Nuttall, F. Q. Obesity and diabetes mellitus. Minnesota Medicine, 1979, 62, 19-21.

Oken, B., Hartz, A., Giefer, E., & Rimm, A. Relation between socioeconomic status and obesity changes in 9046 women. Preventive Medicine, 1977, 6, 447-453.

Ormiston, L. Self-management strategies. In W. D. Squyres (Ed.), Patient education: An inquiry into the state of the art. New York: Springer Pub. Co., 1980.

Oscanova, K. & Hejda, S. Epidemiology of obesity. In T. Silverstone (Ed.), Obesity: Its pathogenesis and management. Lancaster, England: Medical and Technical Publishing Company, L.T.D., 1975.

Pliner, P. On the generalizability of the externality hypothesis. In S. Schachter and J. Rodin (Eds.), Obese humans and rats. Washington, D.C.: Erlbaum/Halsted, 1974.

Polit, D. & Hungler, B. Nursing research: Principles and methods. Philadelphia: J. B. Lippincott Company, 1978.

Powdermaker, H. An anthropological approach to the problems of obesity. In N. Kiell (Ed.), The Psychology of Obesity. Springfield, Ill.: Charles C. Thomas, 1973. Reprinted from Bulletin of the New York Academy of Medicine, 1960, 36, 285.

Rodin, J. Effects of distraction on the performance of obese and normal subjects. Journal of Comparative Physiology and Psychology, 1973, 83, 68-75.

Rodin, J. Obesity and external responsiveness. In A. Howard (Ed.), Recent advances in obesity research I. London: Newman Publishing Company, 1975.

Rodin, J., Bray, G. A., Atkinson, R. L., Dahms, W. T., Greenway, F. L., Hamilton, K., & Molitch, M. Predictors of successful weight loss in an outpatient obesity clinic. International Journal of Obesity, 1977, 1, 79-87.

Rodin, J., Elman, D., & Schachter, S. Emotionality and obesity. In S. Schachter and J. Rodin (Eds.), Obese humans and rats. Washington, D.C.: Erlbaum/Halsted, 1974.

Rodin, J. & Slochower, J. Externality in the non-obese: The effects of environmental responsiveness on weight. Journal of Personality and Social Psychology, 1976, 33, 338-344.

Rodin, J. & Slochower, J. Fat chance for a favor: Obese-normal differences in compliance and incidental learning. Journal of Personality and Social Psychology, 1974, 29, 557-565.

Rosenstock, I. M. Historical origins of the health belief model. In M. H. Becker (Ed.), The health belief model and personal health behavior. Thorofare, N.J.: Charles B. Slack, Inc., 1974.

Rosenstock, I. M. Prevention of illness and maintenance of health. In J. Kosa, A. Antonovsky, and I. K. Zola (Eds.), Poverty and Health. Cambridge, Mass.: Harvard University Press, 1969.

Ross, L. Effects of manipulating the salience of food upon consumption by obese and normal eaters. In S. Schachter and J. Rodin (Eds.), Obese humans and rats. Washington, D.C.; Erlbaum/Halsted, 1974.

Rubel, A. J. Across the tracks. Austin, Texas: University of Texas Press, 1966.

Rubel, A. J. Concepts of disease in the Mexican-American culture. American Anthropologist, 1960, 62, 195-214.

Rudov, M. H. & Santangelo, N. Health status of minorities and low income groups. (U.S. Public Health Service Publication No. [HRA] 79-627). Washington, D.C.: U.S. Department of Health, Education, and Welfare, 1979.

Samora, J. Conceptions of health and disease among Spanish-Americans. In R. A. Martinez (Ed.), Hispanic culture and health care. Saint Louis: C. V. Mosby Company, 1978. Reprinted from American Catholic Sociological Review, 1961, 22, 314-323.

Saunders, L. Cultural differences and medical care. New York: Russell Sage Foundation, 1954.

Schachter, S. Cognitive effects on bodily functioning: Studies of obesity and eating. In D. G. Glass, (Ed.), Biology and behavior: Neurophysiology and emotion. New York: The Rockefeller University Press and Russell Sage Foundation, 1967.

Schachter, S. & Gross, L. Manipulated time and eating behavior. Journal of Personality and Social Psychology, 1968, 10, 98-106.

Schulman, S. & Smith, A. The concept of "health" among Spanish-speaking villagers of New Mexico and Colorado. Journal of Health and Human Behavior, 1963, 4, 226-234.

Seeman, M. On the meaning of alienation. American Sociological Review, 1959, 27, 783-791.

Shipman, W. G. & Plesset, M. R. Anxiety and depression in obese dieters. Archives of General Psychiatry, 1963, 8, 530-535.

Silverstone, J. T. Psychosocial aspects of obesity. In N. Kiell (Ed.), The Psychology of Obesity. Springfield, Ill.: Charles C. Thomas, 1973. Reprinted from Proceedings of the Royal Society of Medicine, 1968, 61, 371-375.

Silverstone, J. T., Gordon, R. P., & Stunkard, A. J. Social factors in obesity in London. The Practitioner, 1969, 202, 682-688.

Silverstone, J. T. & Lascelles, B. D. Dieting and depression. British Journal of Psychiatry, 1966, 112, 513-519.

Silverstone, J. T. & Solomon, T. Psychiatric and somatic factors in the treatment of obesity. Journal of Psychosomatic Research, 1965, 9, 249-255.

Simon, R. I. Obesity as a depressive equivalent. Journal of the American Medical Association, 1963, 183, 208-210.

Siperstein, M. Diabetes diagnoses grounded on GTT are wrong most of time. Family Practice News, 1979, 19, 1.

Snow, L. F. & Johnson, S. M. Modern day menstrual folklore. Journal of the American Medical Association, 1977, 237, 27, 36, 39.

Spector, R. E. Cultural diversity in health and illness New York: Appleton-Century-Crofts, 1979.

Srole, L., Langner, T. S., Michael, S. T., Kirkpatrick, P., Opler, M. K., & Rennie, T. A. C. Mental health in the metropolis: The midtown manhattan study. New York: New York University Press, 1978.

Stein, J. H., West, K. M., Robey, J. M., Tirador, D. F., & McDonald, G. W. The high prevalence of abnormal glucose tolerance in the Cherokee Indians of North Carolina. Archives of Internal Medicine, 1965, 116, 842-846.

Stevenson, J. Issues and crisis during middlescence. New York: Appleton-Century-Crofts, 1977.

Stunkard, A. J. The pain of obesity. Palo Alto, Ca.: Bull Publishing Company, 1976.

Suchman, E. A. Sociomedical variations among ethnic groups. American Journal of Sociology, 1964, 70, 319-331.

Ten state nutritional survey 1968-1970. Health Services and Mental Health Administration, Center for Disease Control (DHEW Pub. No. (HSM) 72-8132), 1972.

Texter, E. C. Panel discussion: The obestity problem. Medical Challenge, 1977, 52.

United States Department of Commerce. Persons of Spanish origin in the United States. (Current Population Reports, series p-20, no. 354). Washington, D.C.: Government Printing Office, 1979.

Valentine, C. Culture and poverty. Chicago: The University of Chicago Press, 1968.

Van Ormer, E. B. & Williams, C. D. Elementary statistics for students of education and psychology. Ann Arbor: Edwards Brothers, Inc., 1941.

Verway, D. (Ed.). Michigan statistical abstract. East Lansing, Mi.: Michigan State University School of Business Administration, 1978, 4.

Wagner, H. R. (Ed.). Alfred Schutz. On phenomenology and social relations--selected writings. Chicago: The University of Chicago Press, 1970.

Wallston, K., Wallston, B., & DeVellis, R. Development of the multi-dimensional health locus of control scales. Health Education Monographs, 1978, 6(2), 160-170.

Ware, J. E., Jr., Wright, W. R., & Snyder, M. K. Measures of perceptions regarding health status: Preliminary findings as to scale reliability, validity, and administration procedures. Technical Reports MHC-74-13. Carbondale, Ill.: Southern Illinois University School of Medicine, 1974.

Warner, W. L. American life: Dream and reality. Chicago: The University of Chicago Press, 1962.

West, K. M. & Kalbfleisch, J. M. Diabetes in Central America. Diabetes, 1970, 19, 656-663.

White, E. H. Giving health care to minority patients. Nursing Clinics of North America, 1977, 12, 27-39.

Williams, S. R. Essentials of nutrition and diet therapy. Saint Louis: The C. V. Mosby Company, 1974.

Wineman, N. M. Obesity: Locus of control, body image, weight loss, and age-at-onset. Nursing Research, 1980, 29, 231-237.

Wooley, O. W., Wooley, S. C., & Williams, B. S. Salivation as a measure of appetite. In D. Novin, W. Wyrwicka, and G. Bray, (Eds.), Hunger: Basic mechanisms and clinical implications. New York: Raven Press, 1976.

Yanochik-Owen, A. & White, M. Nutritional surveillance in Arizona: Selected anthropometric and laboratory observations among Mexican-American children. American Journal Public Health, 1977, 67, 151-154.

Ziegler, T. Incidence and possible etiology of obesity in Mexican-Americans. Unpublished paper, Michigan State University, 1980.

Zimmet, P., Taft, P., Guinea, A., Guthrie, W., & Thoma, K. The high prevalence of diabetes mellitus on a Central Pacific Island. Diabetologia, 1977, 13, 111-115.