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The College of William and Mary, 1991

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THE PERSONAL MOTIVATION SYSTEM OF HISPANIC FEMALE STUDENTS AS MEASURED BY THE PICTURE IDENTIFICATION TEST

A Dissertation

Presented to

The Faculty of the School of Education

The College of William and Mary in Virginia

In Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

---

by

Martha Lazcano Muguira

May 1991

THE PERSONAL MOTIVATION SYSTEM

OF HISPANIC FEMALE STUDENTS

AS MEASURED BY THE PICTURE IDENTIFICATION TEST

by

Martha Lazcano Muguira

Approved May 1991 by

P. Michael Politano, Ph.D.
Chair of Doctoral Committee

Jay L. Chambers, Ph.D.

Kathy M. Evans, Ph.D.

DEDICATION

To my husband, friend, and soul mate, Vince,

and my children, Melanie and Chris,

with your love I complete this project

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Completing this dissertation has been a multidimensional process shared by many important people in my life. Some of this sharing has been at the personal level where love and caring have been bountiful. Another has been professional, where expertise and sincere dedication to excellence encouraged me to focus on my strengths and expand my limits. These levels merged to kindle the motivation to transform an idea into a bound dissertation.

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THE PERSONAL MOTIVATION SYSTEM OF HISPANIC FEMALE STUDENTS AS MEASURED BY THE PICTURE IDENTIFICATION TEST

ABSTRACT

This study explored the qualities that distinguished a select group of college freshmen women (National Hispanic Scholars) from a general sample of Hispanic women as assessed by the PIT (Picture Identification Test) a semi-projective systems-oriented instrument that measures motivation (Chambers, 1988). The PIT was mailed to 496 Women Scholars, and administered to self-identified Hispanic freshmen women who attended four universities in the United States for the first time in the Fall of 1990. Results were based on the responses of 99 Ss (Select Group), and 57 Ss (Regular Group) who completed the PIT and fulfilled the criteria.

The specific hypothesis tested in this study was that an academically Select Group of Hispanic women would deviate less on PIT normative measures than a Regular Group of Hispanic college freshmen women. The data supported the prediction at a high level of significance.

PIT variables were first grouped and analyzed by a Multiple Analysis of Variance (MANOVA) program to ascertain any differences on Needs for each variable between the groups. Twenty-two out of 28 MANOVAs were significant at the p .02 level or less. A stepwise discriminant function analysis was used to order 114 of the most significant ANOVA variables (p <.05) and the most significant Bonferroni variables (p <.002). Out of this group, 43 variables were selected and ordered according to strongest discrimination and independence. The Select Group was closer to the Target Model on twenty-two of the twenty-six discriminant variables with significant ANOVAs (p <.04). Results are discussed in terms of understanding the qualities and motivational dynamics observed in the Select Group. Recommendations for further research with the PIT are discussed exploring its possibilities as an adjunct to multicultural counseling with populations "at risk".

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THE PERSONAL MOTIVATION SYSTEM

OF HISPANIC WOMEN

AS MEASURED BY THE PICTURE IDENTIFICATION TEST

Chapter 1

INTRODUCTION

Justification for the Study

Americans of Hispanic descent constitute the second-largest minority group in the United States (U. S. Census Bureau, 1988). Yet, in spite of unprecedented population growth since 1980, few Hispanics are represented in postsecondary education (NEA, 1987). According to the Hispanic Association of Colleges and Universities (HACU, 1989) an average of 70 out of 1,000 Hispanics who enter the educational system as children graduate from college. Hispanics have been considered a population "at risk" due to the high drop-out rates and the difficulty of retaining students at all levels of the educational system.

A search of the current literature indicates a lack of studies that investigate motivation as a factor in the academic performance of women of Hispanic descent in secondary or postsecondary education. There are both practical and theoretical reasons underlying the importance of exploratory studies such as this. One

practical reason pertains to the importance of investigating the motivators that enhance the chances of Hispanic women who have finished high school and entered postsecondary schools. Another is to explore those factors that identify those "highly successful" women whose qualities and motivational dynamics potentiate "success." Exploratory studies such as the present study could provide a research base for pluralistic counseling models that identify qualities and motivational dynamics that benefit Hispanic women in this and similar milieus. Other practical considerations include the need to identify indicators indicative of higher retention rates at the postsecondary level as well as indicators of personal satisfaction and observed success.

The edition of the Picture Identification Test (PIT), developed by Chambers in 1980, was selected for this study because of its non-intrusive nature, the history of its use, and the study's focus. The PIT has been used to explore the role that motivation plays in academic performance and has been successful in predicting GPA (Grade Point Average) for both female and male freshmen with better than chance accuracy ($p < .05$) (Chambers, in press). It has been widely used at The College of William and Mary as an adjunct to counseling

to help students refine and understand their motivation systems (Chambers, personal communication, 1990), and as a research tool with various populations effectively discriminating between groups (Chambers, 1961; Chambers & Lieberman, 1965; Chambers, Barger, & Leiberman, 1965; Chambers & Wilson, 1971; Chambers & Surma, 1976, 1977; Chambers (in press); Keller & Chambers, 1975; Ondercin, 1984; Saad, 1990).

The semi-projective nature of the PIT and its predictive capacity with college students indicated that this instrument could be of value in investigating students' beliefs and values at a less conscious level than other motivation assessment instruments.

The present study aimed to determine the PIT's effectiveness in differentiating between the motivational systems of two groups of Hispanic women. The first group (Select Group) included women identified as 1990 National Hispanic Scholars by The College Board. The second group (Regular Group) included women from the general population of female students of Hispanic descent attending postsecondary institutions in the United States for the first time as freshmen.

Statement of the Problem

The study sought to establish those qualities that distinguished highly successful Hispanic female students from other Hispanic female students. The assessment was based on PIT measures and on demographic data.

Theoretical Rationale

It was theorized that if the factors and patterns contributing to academic success could be isolated, and conversely, the factors and patterns contributing to academic failure be pinpointed, this knowledge could be used to assist individual students in their academic adjustment. Achievement of this goal could lead to higher retention rates, greater satisfaction, and better adjustment of Hispanic students.

Some Hispanics who enter, remain, and graduate from high school and college are considered "highly successful" as evidenced by their academic performance scores (i.e. GPA, Grade Point Average), GRE (Graduate Record Exam), Miller Analogies Test (MAT), SAT (Scholastic Aptitude Test), teacher evaluations and honors. It was postulated that these individuals possess not only the skills necessary to succeed in an academic environment but also the motivational dynamics that make the process possible. This postulate was based on the

theory that motivation is the key to learning and that our personality and adjustment are determined by the ways we learn to meet our needs. Those students who have learned to meet their needs are more likely to remain motivated to stay in college and complete their goals while staying "well-adjusted" during the process.

Instruments such as the SAT, ACT, GRE, and MAT have been developed to help predict student success in postsecondary education. These instruments have focused on academic achievement independent of motivational variables. Their reliability in assessing academic success has remained controversial particularly in regard to culturally diverse individuals (Levine & Padilla, 1980). None of these instruments examine ways to assess and improve students' motivation.

Chambers (1980) designed the Picture Identification Test (PIT) based on the theoretical proposition that motivation is the key to learning. The instrument examines ways to assess and therefore improve students' motivation, and is used as an adjunct to counseling. It was developed from a General Systems approach and Henry Murray's personology that postulates that our personality and adjustment are determined by the ways we learn to meet our needs and the needs of others.

The present study was designed to compare the need systems of two groups of Hispanic women. Specifically, it explored those motivational dynamics -- as measured by the PIT -- that distinguished the Select Group from the Regular Group. It also compared the two groups demographically.

Research Hypothesis

It was hypothesized that the PIT scores of the Select Group (1990 National Hispanic Women Scholars) would deviate less on normative PIT measures than a Regular Group of Hispanic students (self-identified as first-time freshmen women attending several universities in the United States in the Fall of 1990).

Sample Description and General Data Gathering Procedures

A package including an explanatory letter about the study, a consent form, the PIT (including instructions, test and answer sheet), a short demographic questionnaire, and a self-addressed envelope was sent to the 496 women selected as 1990 National Hispanic Scholars (Select Group) before the 1990 Fall semester. A follow-up package was sent at the beginning of the semester. Ninety-nine Scholars responded with completed and usable questionnaires.

The second group was drawn from a population of Hispanic women who: 1. self-identified as being of Hispanic heritage; 2. reported entering four-year postsecondary institutions in the United States for the first time in the Fall of 1990; 3. indicated receiving no honors or scholarships. The PIT and the demographic questionnaire was administered in group settings to most of these participants at the beginning of the 1990 Fall semester. A few completed their questionnaires individually and mailed them directly to the investigator. Only the women who indicated their status as being first-time freshmen and who had received no honors were selected for this group (Regular Group). Fifty-seven women satisfied the criteria for selection to the Regular Group.

As the completed questionnaires were received they were computer scored at The College of William and Mary and the group scores analyzed. Abstracts would be mailed to the subjects who requested them.

Limitations of the Study

There were several limitations inherent in this study. The first one was the response rate from each of the two groups. All of the 496 women who were selected 1990 National Hispanic Scholars had an equal opportunity

to participate. Two mailings were done that yielded 99 completed questionnaires. This response rate was low and that could indicate problems in the representativeness of this sample. It would be difficult to assess the differences or similarities between respondents and nonrespondents. It is possible that the respondents differ in characteristics such as motivation, psychological mindedness, and ability to meet their needs.

The Regular Group were volunteers from four universities who completed the questionnaires and met the criteria for selection. Most of the 57 Ss who met the criteria for this group attended the same postsecondary institution. Several of the Ss from the institutions could not be included in the study because they indicated receiving honors/scholarships.

The Ss from the Select Group were mailed the packages; Ss for the Regular Group completed the questionnaires either in a group or individual setting.

In general, the differences between respondents and nonrespondents, and those that completed the questionnaires in a group as opposed to an individual setting, cannot be measured. It is possible that these conditions influenced the results.

Another limitation was the number of respondents. The goal was to have at least 100 *Ss* for each group. This goal was not reached. The percentage of responses was below the desirable level. This deficiency raises to problems in terms of generalization. The samples may not be representative of the population as a whole.

Another goal for the study was to draw a representative sample of the major subgroupings of Hispanics according to type of origin as those reported by the U.S. Census Bureau (1988). The Select Group is closer to being representative; the Regular Group is primarily Mexican-American and therefore not representative of the major subgroupings.

In general, uncontrolled variables such as socioeconomic level, testing procedures, and sampling problems resulting from the small numbers of *Ss* could affect the results. Care should be given in generalizing results to other populations, keeping in mind the comparative, rather than the predictive nature of this study.

Chapter 2

REVIEW OF THE LITERATURE

Concept of Motivation from A General Systems Perspective

Historically, the general population, as well as scientists, researchers, philosophers, and students of the behavioral and social sciences, amongst others, have discussed whether motivation exists, can be measured, and/or how it relates to our internal and external characteristics (Hall & Lindzey, 1978). As we go through everyday life, each of us notices that people differ in the ways they approach their inner and outer world. Variables such as genetics, learning, social, cultural, temporal, situational, and spatial circumstances seem in some way to account for some of these differences (Byrne & Kelley, 1981). In order to make sense, order, predict, and change human behavior, people have developed a myriad of theories. Some of these theories center on the individual as a separate and discriminant entity (e.g., psychoanalysis) while others focus on the interactions of individuals within, and with, the many systems they are part of (e.g. family systems).

Ludwig von Bertalanffy (1968) proposed a General Systems Theory applicable universally to all systems. Bertalanffy considered the collection of elements and components in a system as interactive. Further, he postulated that the sum of the mutual associations in a system become more than the sum of their elements and components. Bertalanffy believed that because humans are able to conceptualize and work with symbols, they are able to act with intention and purpose and are not bound to simple causal relationships. This view was new in his lifetime (1901-1972) when the mechanical view of man predominated. Bertalanffy also postulated that organisms are living systems formed by hierarchies of open systems that continuously organize, develop, and maintain themselves.

Henry Murray (1953) was one of the pioneers in the application of the General Systems Theory to the study of motivation. He developed a complex system by which he identified human needs (motives) and categorized them as primary needs (basic) and secondary needs (learned). Within his theory he recognized the importance of environmental influences and the relationship between these influences and the physical and psychological systems of an individual. He conceptualized motivation

as a major subsystem of personality. He defined the behavior characteristic of learned human motivation, taxonomized it into human needs, and postulated the basic traits (personality dynamics) underlying these needs.

A Multidimensional Approach: Theory and Assessment of Needs

Influenced by the General Systems Theory proposed by Bertalanffy (1968), and the motivational (need) system by Murray (1953), Chambers (1980) developed a multidimensional approach to the study of motivation (needs) called the Personal Needs System Theory.

Using this theory Chambers (1980) developed the Picture Identification Test (PIT) to assess human motivation from a systems perspective. The PIT incorporates the structure of needs taxonomized by Murray (with some modifications) and applies General Systems Theory to aspects of the motivation system. The PIT is a semi-projective instrument that uses facial photographs of men and women as stimuli. The purpose is to measure motives from the assessment of these facial expressions. Chambers (in press) states that, "The ability to read intentions (needs or motives) from facial expressions should have definite competitive and survival value" (p.8). He cites Ekman and Frieser (1984) as identifying

six emotions that are reliably expressed and identified by people from various cultures. Chambers (in press) notes that both his research with PIT stimuli and Ekman's research with facial expressions show that the emotions Ss perceive change when the person who provides the stimuli changes expressions. Chambers' "primary purpose" is to help people "develop their own personal theory of human motivation and personality....," understand their own motives and behavior and, "by empathic extension," " understand the motives and actions of others" (1988, p.1).

Definitions Abstracted From PIT Manual

Personal Needs System Theory -- developed by Chambers based on a systems approach to the study of human behavior -- uses a 22 need system taxonomized by Henry Murray (1953) and modified and operationalized by Chambers (1980) to assess motivational dynamics with a semi-projective test called the PIT (Picture Identification Test).

Situational Variables -- according to Chambers (1988), situational variables are one of the major types of variables that interact to select and influence all behavior. Situation variables are commonly referred to as stimuli. Stimuli affect us in a multidimensional

manner. Chambers (1988) states that stimuli are ususally perceived simultaneously as an organized pattern or situation and affect our behavior in that manner. Further, he states that situations are subsystems of the environment, and that personality functions as a living system in a situation environment. The general situation operative in this study is the academic situation.

Person Variables -- according to Chambers (1988) person variables are the second general type of variable. They are made up of personal variables produced by the cognitive, emotional, motivational, perceptual, and behavioral systems of each individual. These person variables (beliefs, emotions, behavior, and needs) are related to the personal motivation system. The Personal Need Theory (Chambers, 1988) emphasizes an understanding of these variables to help us improve our personal and psychological system so we may cope better with situational variables. The focus of this study is to explore the person variables in the Select and Regular female Hispanic groups.

Beliefs -- Chambers (1988) refers to a belief as an idea a person will act on if perceived as appropriate to the situation the person is in. He states that a belief is an idea that can activate our motivation, emotion, and

behavior systems. Further, beliefs are programmed instructions stored in our cognitive systems. Some beliefs are conscious, others unconscious: they differ in strength and can be realistic or unrealistic. Beliefs are associated with other beliefs that form subsystems to promote complex activity.

Values -- Chambers (1988) classifies values as attitude beliefs that are not necessarily reality oriented.

Emotions -- Chambers (1988) refers to emotions as personal variables that involve experiential, physical, and behavioral characteristics. He believes that the experiential aspect includes a combination of beliefs (particularily attitude beliefs) and perception of the emotional behavior of organs and glands. Emotions can be differentiated in a positive-negative dimension. Positive emotions are aroused by the satisfaction of a need; negative emotions result from need frustration and tend to increase body tension. Within his theory Chambers (1988) considers emotions indicators of physical and psychological vitality. They accompany internal behavior.

Behavior -- Chambers (1988) considers behavior motivated activity that is expressed externally or

internally. Internally oriented behavior is referred to as emotional behavior or activity.

Needs -- Chambers (1988) considers needs energy that moves us to externally oriented, goal directed activities. He states that needs (motives) are mostly nonverbal and unconscious. He elaborates that we are taught as children to objectify our needs so it is more difficult to identify and analyze our needs (motives) than to indicate the objects that satisfy them. Needs form critical points of interaction between perceptual, cognitive, behavioral, and other systems. Many different objects and situations can satisfy or frustrate the same need. We can express the same need in different ways. Chambers (1988) believes that it is important to learn to identify and differentiate our needs to avoid confusing them.

Personality -- from a systems perspective personality is the way the major subsystems of the person function and interact (Chambers, 1988). The dominant set or organizing principle integrates and directs the actions of the subsystems. Strongly held beliefs provide the organizing principle. A person's personality is most clearly seen by the actions they use to meet their needs. Chambers (1988) states that these actions should be evaluated in a situation context.

Hispanic Women: Role of Motivation in Academic Performance

A search of the literature indicates a lack of studies investigating the role of motivation in the academic performance of Hispanic women. The search also indicates a lack of instruments that are valid cross-culturally (Levine & Padilla, 1980; Ponterotto, 1988). Ponterotto (1988) has suggested that instruments and models that are valid cross-culturally should be explored with consideration to the selection of designs, theory base, and interpretations made. He warns of making generalizations that can hinder, rather than enhance, pluralistic counseling.

The personal variables assumed to relate to success in this study were an individual's beliefs and values. According to the Personal Need Theory (Chambers, 1988) beliefs and values select and direct our motivation and actions and thus ultimately our success and failure. The particular success setting explored in this study was the academic setting. The Ss (Subjects) were women who identify themselves as Hispanic and were entering four-year colleges and universities in the United States.

Educational Demographics and Relationship to the Problem

Hispanics constitute the second-largest minority group in the United States (U.S. Census Bureau, 1988). The group is noted for its historical, cultural and ethnic diversity (LeVine & Padilla, 1980). Because of its diversity and transformative state in American society, the group provides a good model for exploring those motivation variables that support and promote success in a pluralistic society such as exists in the United States.

Historically, in spite of unprecedented population growth since 1980, few Hispanics are represented in postsecondary education (NEA, 1987). According to the Center for Education Statistics (U.S. Dept. of Education, 1988), even though Hispanic enrollment in postsecondary education has risen from 1976 to 1986, these numbers are not proportionate with population growth. In 1986 there were a total of 624,000 Hispanics enrolled in colleges representing 5% of the total college population of over 12.5 million. These totals represent an increase in Hispanic enrollment from the 400,000 base in 1976. The Hispanic Association of Colleges and Universities (HACU, 1989) cites that, on an average, only 70 out of 1,000 Americans of Hispanic descent who enter the educational

system as children graduate from college.

The U. S. Dept. of Education's Center for Education Statistics (April, 1988) cites a complete reversal in the distribution of enrollments between men and women from 1976 to 1986. In 1976, men and women accounted for 53% and 47% of the enrollment in higher education (women 53%, men 47%). For women, the total 1986 enrollment represents 6.6 million of the total student population as compared to 5.2 million in 1976. In 1986 there were 332,000 Hispanic women enrolled in higher education as compared to 292,000 males. Of these students, 84,000 were enrolled in private institutions and 539,000 were enrolled in public institutions. According to the biennial HEGIS and IPEDS surveys of fall enrollments, 1976 through 1986, the enrollment of Hispanic women, from 1984 to 1986, increased from 5% to 18%. This change contrasted with a decrease of 17% to 5% from 1980 to 1984.

Summary

Based on the search of the literature and the practical need to help identify measures that can help students "at risk," the present study was designed to explore those factors that identify Hispanic women whose qualities and selected motivational dynamics potentiate

"success". The PIT was selected because of the history of its use with other college populations, because of its potential as a multidimensional assessment of motivational dynamics, and because it could provide a research base for pluralistic counseling models that highlight qualities and motivational dynamics. It is hoped that these models will benefit women in this and similar milieus.

Chapter 3

METHODOLOGY

Sample Population

Two groups of female students of Hispanic heritage were selected. The first group included women identified as National Hispanic Scholars. The second group included women from the general population of female students of Hispanic heritage attending postsecondary institutions in the United States for the first time as freshmen.

The National Hispanic Scholars are academically talented Hispanic high school seniors (both women and men) who are selected on a yearly competitive basis by The College Board. Scholars are chosen on the basis of their overall academic achievements (as indicated by the Preliminary Scholastic Aptitude Test/National Merit Scholarship Qualifying Test, grade point average, high school records, and other criteria such as personal qualities and community involvement). Each year 1,000 students are selected for this program.

The College Board is a national, nonprofit membership organization of approximately 2,600 colleges,

universitites, secondary schools, school systems and education associations, providing a variety of tests and services for guidance, college admissions, placement and financial aid purposes (The College Board, 1989).

The first sample for this study was drawn from the overall population of one thousand 1990 Hispanic Scholars. The sample included only women. The names were drawn from the Scholars' list with every woman given an opportunity to participate. Each woman was mailed a package including a cover letter, the PIT (including instructions, test, and answer sheet), a short demographic questionnaire, a consent form and a self-addressed return envelope. This sampling and a follow-up was accomplished at the beginning of the 1990 Fall Semester.

The second group was drawn from a population of women who identified themselves as Hispanic, were enrolled for the first time at several postsecondary four-year colleges and universities in the United States, and volunteered to participate in the study. The goal was to draw 100 Ss representative of the major subgroupings of Hispanics according to type of origin as defined by the U.S. Census Bureau (1988). These subgroupings are identified from the total population of

19.4 Hispanics as Mexican (12.1 million - 62%), Puerto Rican (2.5 million - 13%), Cuban (1 million -5%), Central and South American (2.2 million - 11.5%), and other Hispanic (1.6 million - 8.5%). Participating universities were selected considering geographic location, type of institution, enrollment criteria, and enrollment in terms of type of origin. The response was skewed in the direction of one university, UTEP (University of Texas at El Paso), from which most of the sample was drawn. This also eskewed the response toward one ethnic group -- Mexican-American. A few students enrolled at Allegheny College in Pennsylvania, Incarnate Word College, and Trinity College in Texas also participated. Fifty-seven Regular students were selected to participate in the study. They were selected based on their identification as: first time freshmen, women of Hispanic origin, no honors, and agreement to participate in the study.

Instrumentation

The Picture Identification Test (PIT) (Chambers, 1980) version (E) was used in this study. The PIT is a semi-projective multiple-item two-part paper-and-pencil test that provides a multidimensional view of the motivation system. It is based on Henry Murray's 22 need

taxonomy refined and operationalized by Chambers (1980) for use with the PIT.

The PIT uses 12 photographs of college students (6 males and 6 females, ages 21 to 23) originally taken in 1976, as stimuli. These photographs were selected to represent a variety of expressions. Each S is asked to rate these 1.5" X 1.5" photographs in two parts of the test. For Part I, the subject is asked to indicate their reactions to a facial expression on a five point scale from "1" very positive to "5" very negative. For Part II, the subject is asked to rate the expressions on a five point scale as to whether it shows "1" a very definite expression of the need being rated or "5" definitely does not express the need.

Scores for each need are determined by the S's ratings. Analysis of these scores provides Perceptual Judgment, Attitude and Inter-Need Association Measures, and a three dimensional associative structure (Combative, Personal, and Competitive).

The PIT is self-administered, suitable for individual or group use, taking from 45 to 60 minutes to complete. It is computer scored with a printout of results available. Accompanying handouts describing the Dimensions and the Needs are also provided.

Validity

The PIT measures of associative distance between needs (inter-need associations) for different normal groups show correlations generally above .90 (Chambers, 1988). It has been used with American, English, and Indian university students yielding similar need association structures with a correlation of more than .80 (Chambers, 1988).

The PIT has been effective in exploring the role motivation plays in academic performance. In a recent study by its developer (Chambers, in press) the PIT was able to predict GPA at a significant level ($p < .05$). The PIT has been successful in discriminating groups that differ in educational characteristics (Chambers, Barger, & Lieberman, 1965; Chambers & Lieberman, 1963; Chambers & Wilson, 1971; Musselman, Barger, & Chambers, 1967) and has been used to analyze the personal need systems of college students who experienced academic failure, discipline violations, and psychological problems related to academic adjustment (Saad, 1990).

The PIT has also been useful in discriminating groups differing in type and severity of pathology (Chambers & Surma, 1979), narcotic addicts (Chambers, 1972), normal and clinical groups (Chambers & Lieberman,

1965), male prisoners (Chambers & Ventis, 1975), and eating disorders (Ondercin, 1984).

Reliability

The PIT is computer scored with 100% scoring reliability. There is no data on its test re-test reliability. Each PIT is analyzed for internal consistency of need associations by split-half correlations. Results that are not internally consistent are deleted from further analysis. Reliability coefficients of internal consistency average .72 for need associations. A reliability coefficient of .50 or higher and a Need Differential Sum of 15 or greater is accepted as indicating internal consistency. This analysis provides a means to identify the Ss who could be responding randomly or not following directions.

Dimension Scores and Need Scores

Each S's ratings yield two types of scores: one, a multidimensional scale analysis of three dimension scales (Combative, Personal, and Competitive), and two, specific Inter-Need Association Scores, Perceptual Judgment Need Scores, and Attitude Need Scores computed for each of the 22 needs (Appendix A). Attitude scores are correlated with the Target Model need scale locations for each dimension providing an attitude score for each dimension.

Appendix B includes brief descriptions of the sets of PIT scores. Note that each of the 22 needs measured by the PIT has a particular location in each of the three Dimensions. Chambers (1988) postulates that each of the 22 needs are organized with some degree of polarity within each of the three dimensions -- the more distant the need in either end of the dimension, the more it inhibits, conflicts with, and opposes needs at the other end of the dimension.

Dimension 1, the Combative - Noncombative Dimension is considered by Chambers (1988) to be "the most basic and primitive motivation dimension" (p. 20). The Combative Needs (Aggression, Rejection, Defendance, Dominance, Autonomy, and Sex) help us to assert our will forcefully over others and our environment (e.g., wars, slavery, crime, discrimination, diplomacy, advertising, parental authority, politics). When operating in the Combative Dimension, these needs do not take into account scores, rules, judges, or time limits. Outcome is achieved by the forceful will and power of the adversaries. Combative motivation is often concealed or ignored because it is condemned by society at a conscious verbal level. On the other end of the scale, the Anti-combative or Noncombative area promotes such behavior as

submission and agreement, avoidance and withdrawl, analyzing and planning, and ambivalence.

Dimension 2, the Personal Dimension - Impersonal Dimension is comprised of needs that promote loving, caring, and personal relationships betweeen individuals. These needs are active in one-to-one relationships and are maintained by bonds of pleasure and responsibility established by such things as weddings, parties, vacations, human interest stories, food and drink, literature, etc. The impersonal area needs have a mixture of rational and combative needs (e.g. impersonal criticism). Chambers (1988) states that a shift to the Personal Dimension impersonal area is helpful when two friends wish to resolve a conflict by rational resolution (using the rational needs of understanding, order, and achievement), rather than shifting to the Combative Dimension resolving the conflict by combative force.

Dimension 3, the Competitive Dimension - Noncompetitive Dimension has needs in the competitive area (Exhibition, Dominance, Understanding, Order, Achievement, Affiliation, Counteraction, and Sentience) that motivate striving for superior status and respectful recognition using mastery, skill and knowledge. In this dimension people are motivated to attain symbolic rewards

such as grades, medals, goals (e.g., entering a contest, learning and solving a problem, doing research, writing a dissertation). Scientific, intellectual and artistic developments contain a mixture of understanding and humanistic concern. This mixture of concerns seems to foster creative activity. At the other end, the noncompetitive area Dimension includes needs such as Blame, Harm, and Inferiority Avoidance, Abasement, Succorance, and Deference. These noncompetitive motivators tend to inhibit competitive striving (e.g., avoidance of "busy work," trying to race against the best mile runner without having a chance of winning, etc.).

Target Model

Chambers (1988) defines the Target Model as a three-dimension INDSCAL (a multidimensional scaling technique which determines a representative fixed dimensional structure for three or more matrices) "target" model based on the inter-need associations (the degree to which each pair of needs is rated similarly or differently across the 12 pictures) derived from the PIT results of 400 male and 400 female university students. Sixty-two Ss (32 males and 30 females) whose scale structures were most representative of the general INDSCAL model also provided target model groups for judgment and attitude

scores. The model has been replicated with other normal groups with the scale structures correlating with the original model at .70 to .80 (Chambers & Surma, 1979). The three Dimensions of the Target Model based on the organization of the needs in each dimension are labeled: Combative, Personal, and Competitive.

Experimental Design

This study was designed as an investigative study aiming to discover PIT motivation measures that differentiated an academically "select" from a "regular" group of Hispanic college women. Prediction for PIT deviation scores were based on previous research findings.

Statistical Analysis

The PIT scores were grouped and analyzed by SAS multiple analysis of variance program (MANOVA) to determine what differences, if any, existed between the two groups. For the significant MANOVAs ($p < .05$), individual scores with an ANOVA ($p < .05$) were selected for further analysis. The Bonferroni procedure (an alternative procedure to the MANOVA used as a control for the experiment-wise alpha error) was applied to the sets of measures that had 22 need scores. Any single measure that yielded an ANOVA of $p < .002$ was also accepted for

ANOVA selection even if the MANOVA for the set was not significant.

The measures were entered in an SPSSx stepwise discriminant function analysis using Wilks' lambda to order the variables according to discriminating power and mutual independence.

Demographic characteristics of the samples as provided by the questionnaire were coded and analyzed.

Ethical Considerations

Since 1984 all William and Mary entering freshmen have been sent the PIT prior to the Fall semester. There has been approximately a 50% voluntary response rate with no negative reactions reported. Computerized interpretive results have been given to those participants who have requested them, with individual follow-up consultation when requested. Based on the history of the use of the PIT and given this study's focus, it was determined that the instrument did not pose psychological risk to the participants. Care was given to inform the participants of the nature of the study, their volunteer status, and of the availability of the researcher and the investigator for any questions.

Confidentiality and anonymity of the individual participants were maintained at all times. Abstracts of

the completed study were available upon request. They could be obtained by sending a self-addressed envelope which was separated from the individual results and in no way coded or identified. All data was maintained in a secure place. Upon completion of group analysis, the individual data was identified only by group number code.

Chapter 4

RESULTS

PIT Results in Terms of Main Hypothesis

Multiple MANOVAs and a step-wise discriminant function analysis using Wilks' lambda upheld the hypothesis that the Select Group of Hispanic women Scholars would deviate less from PIT normative scores than a Regular Group of Hispanic freshmen women. The data supported the predictions at a high level of significance (see Table 1 and Table 2).

Each of the PIT variables with its associated Needs was analyzed using MANOVA. Of the 28 MANOVAs, 22 were significant at a p level of .02 or less (Select Group, n=99; Regular Group, n=57), and are presented in Table 1. One hundred and fourteen variables discriminating at the .05 level or better were selected for further analysis and entered in an SPSSx stepwise discriminant function analysis using Wilks' lambda. Forty-three variables were selected from this analysis and ordered according to discriminating power (see Table 2). Of these variables, twenty-six were deviation measures. Twenty-two of these

Table 1

Manova Test Criteria (Wilks' Model) for Select and Regular Groups

	MANOVA	
PIT Variable	F	p
RMAT	19.80	.0001
RATTD	12.69	.0001
WGTPC	11.84	.0001
JUDG	3.41	.0001
DEVATT	3.13	.0001
CENPER	3.17	.0001
ATT	2.86	.0001
RATTFD	10.26	.0001
CONFU	4.73	.0002
RATTMD	6.58	.0003
ORG	2.63	.0004
SUMSM	2.63	.0004
ATTF	2.58	.0005

(Table 1 continued)

PIT Variable		
SUMSA	2.52	.0006
PROB	2.27	.0023
EGO	2.12	.0050
SUMSF	2.05	.0071
ATTM	1.92	.0126
DIFDVM	1.91	.0139
DVFZ	3.50	.0170
VAL	1.79	.0241
VALZ	1.83	.0200

Table 2

PIT Discriminant Variables for the Select and Regular Groups

Step	PIT Variable	ANOVA F	ANOVA p	Group Means Select n=99	Group Means Regular n=57
1	WGTPC/N DIFF	44.12	.0001	35.50	27.87*
2	JUDG/ABA	26.44	.0001	.57	.32*
3	DEVATT/ORD	23.15	.0001	.27	.76*
4	JUDG/BLA	19.16	.0001	.49	.30*
5	EGO/ORD	7.32	.0076	-0.20	.03**
6	CENPER/ORD	11.45	.0009	-0.50	-2.19
7	ORG/AUT	5.05	.0261	-0.08	.09
8	JUDG/AUT	4.72	.0314	.52	.43*
9	SUMSM/ORD	4.06	.0458	14.44	15.34*
10	VALZ/ACH	15.16	.0001	.50	-0.04
11	RMAT/DIM3	29.79	.0001	.61	.44*
12	VALZ/EXH	4.83	.0294	.18	-0.11
13	CONFU/D3D2	4.11	.0444	.28	.26**
14	RATTFD/DIM1	7.13	.0084	-0.39	-0.27
15	SUMSA/SUC	3.98	.0479	.79	.89*

(Table 2 continued)

Step	PIT Variable				
16	PROB/BLA	14.17	.0002	1.90	2.61*
17	SUMSF/SUC	7.33	.0075	17.22	19.92*
18	DIFDVM/DEF	7.31	.0076	8.73	9.92*
19	SUMSM/BLA	6.80	.0100	18.34	20.72*
20	ATT/HAR	4.88	.0286	1.29	1.13
21	ATTM/ORD	5.39	.0215	1.14	.99
22	SUMSA/ORD	6.29	.0132	.64	.71*
23	SUMSA/NUR	6.23	.0136	.75	.84*
24	SUMSA/ABA	28.41	.0001	.83	1.14*
25	RATTFD/DIM2	30.30	.0001	.32	.10
26	ATTF/HAR	4.67	.0322	1.38	1.19
27	SUMSF/BLA	6.68	.0107	18.29	21.00*
28	SUMSA/BLA	11.51	.0009	.80	.95*
29	PROB/EXH	4.47	.0362	.82	1.02*
30	JUDG/INF	6.10	.0146	.17	.31**
31	JUDG/AGG	8.59	.0039	.64	.54*
32	CENPER/ABA	17.77	.0001	1.87	7.85
33	ATT/DFD	4.68	.0321	1.66	1.49
34	JUDG/REJ	9.46	.0025	.30	.12*
35	CONFU/D1D2	4.75	.0308	.33	.29**
36	SUMSF/PLA	4.52	.0351	14.00	15.36*
37	ATTF/DFD	6.01	.0153	1.77	1.53
38	RATTD/DIM1	7.21	.0081	-0.48	-0.36

(Table 2 continued)

Step	PIT Variable				
39	VALZ/PLA	6.35	.0128	-0.49	-0.11
40	ORG/ABA	15.09	.0002	.01	-0.42
41	VAL/AUT	6.67	.0107	34.81	32.10
42	RMAT/DIM2	37.25	.0001	.60	.39*
43	ORG/SEN	7.33	.0076	.26	.05

Note. * Deviation scores in the predicted direction

** Deviation scores not in the predicted direction

deviation measures were in the predicted direction (closer to the Target Model) and are presented in Table 2 (see Appendix A for PIT Need Definitions and Appendix B for PIT Test Score Descriptions).

Results for PIT Discriminant Variables Supporting Hypothesis

The deviation scores that discriminated the groups are presented in Table 2 and noted with an asterisk (*). Overall, the most significant discriminant variable, entered at step one of the discriminant function analysis, was the Need Differential Score (WGTPC/N DIFF) with a significant ANOVA ($p < .0001$). This measure represents the amount of three dimensional space used by the Groups for the distribution of the 22 needs throughout the system. Sums between 30 and 40 indicate adequate to good need differentiation. Sums in the 20s indicate poor need differentiation. The Select Group's mean score (35.50) was closer to the Target Model than the Regular Group's mean score (27.87).

The second strongest discriminating variable was the Judgment Score for the Abasement Need (JUDG/ABA) with a significant ANOVA ($p < .0001$). The Mean Scores were in the predicted direction with the Select Group (.57) matching the average score of the Target Model. The

Regular Group's score was .32. In general, a score of .80 or higher indicates good perceptual judgment, and a score of .30 or lower indicates poor perceptual judgment as to when a need is appropriate for expression and when it is not. Four other need Judgment Scores, JUDG/BLA, JUDG/AUT, JUDG/AGG and JUDG/REJ, for the Blame Avoidance, Autonomy, Aggression and the Rejection needs respectively, were in the predicted direction. The JUDG/REJ score was low for both groups: Select (.30), Regular (.12).

The third discriminating variable was the Attitude Deviation Score for the Order Need (DEVATT/ORD) with an ANOVA of ($p < .0001$). This score represents the difference between two standarized scores so the deviation is interpreted in standard units. The Select Group was closer to the Target Model rating the expression of Order more positively than the Regular Group.

Association Need Scores for various needs were noted as significant between the two groups. For the Ss' association deviations from the Target Model Need Associations (SUMSA) four Needs were represented: Succurance, Order, Nurturance, Abasement and Blame Avoidance. For Association Need Scores based on the

female pictures (SUMSF), the three best discriminators were in the predicted direction for the following needs: Succurance, Blame Avoidance and Play. The Association Deviation Score for the Order Need (SUMSM/ORD) was entered at step nine in the discriminant analysis with a significant ANOVA ($p < .0458$). This score represents the Groups' association deviations from the Target Model for the Order Need Associations based on the male pictures.

Two correlation scores between the Ss and the Target locations of needs for each dimension showed discrimination in the predicted direction. The first score was the correlation score for the Competitive Dimension (RMAT/DIM3) with an ANOVA ($p < .0001$) selected at step eleven. The Select Group had a higher Competitive Dimension score than the Regular Group. The correlation score for the Personal Dimension was also selected (RMAT/DIM2) with an ANOVA ($p < .0001$). The Select Group had higher Personal Dimension score than the Regular Group.

Two Problem Scores were noted out of the nineteen deviation scores which differentiated the groups. The Problem Score for Blame Avoidance (PROB/BLA) of 2.61 shows that the Regular Group had significant problems associated with the Blame Avoidance Need. The Select

Group had a score of 1.90. The Problem Score for Exhibition (PROB/EXH) showed that the Select Group (.82) was closer to the Target Model than the Regular Group (1.02).

PIT Deviation Scores Not in the Predicted Direction

Four deviation scores were not in the predicted direction. One is an Association Score (EGO/ORD), two are Confusion scores (CONFU/D3D2 and CONFU/D1D2), and one is a Judgment score (JUDG/INF).

The fifth discriminant variable was the EGO Score for the Order Need (EGO/ORD) with a significant ANOVA ($p < .0076$). The score indicates that the Select Group (-0.20) had the Order Needs more closely associated with the Ego Needs than the Regular Group (.03). This score is not in the predicted direction. These results suggest more ego involvement with ordering and organizing for the Select Group than for the Regular Group.

A measure of confusion between dimensions, CONFU/D3D2, denoted the lack of independence between the Competitive Dimension (D3) and the Personal Dimension (D2). This score was selected at step thirteen with a significant ANOVA ($p < .0444$). The Regular Group (.26) was closer to the Target Model than the Select Group (.28). The higher score denotes more confusion between

dimensions. In this case, the Personal Dimension intruded more into the Competitive Dimension for the Select Group than for the Regular Group. The second score, CONFU/D1D2, was selected at step thirty-five. The results indicate that the Personal Dimension (D1) gets mixed with the Combative Dimension (D2) more for the Select Group (.33) than for the Regular Group (.29).

The last discriminant variable that did not have deviation scores in the predicted direction was the Judgment Score for the Inferiority Need (JUDG/INF). This variable was entered at step thirty with a significant ANOVA ($p < .0146$). The scores for both groups were low: Regular Group = .31, Select Group = .17.

Demographic Description of the Two Groups

Not all of the Ss responded to all of the demographic items. The number of Ss who responded to each item is noted.

Numbers of Subjects in Each Group

Questionnaire packages were mailed to 496 (100%) of the 1990 female National Hispanic Scholars. A response rate of 20% was obtained. Three Ss did not complete all of their PIT scores; 5 Ss returned the packages indicating they did not wish to participate. For the Regular Group 109 questionnaires were completed; with 57

usuable for the study. Forty-eight of the respondents did not meet the criteria for selection to this group because they received scholarships or honors. Four respondents in the Regular Group returned incomplete questionnaires. The percentage of questionnaires used for the study from those returned by first-time freshmen women was 52.29%.

Mean Age

The mean age for the Select Group was 17.6 years with a Standard Deviation of .59. The Regular Group Ss were older with a mean age of 18.8 years (SD=.97).

GPA and SAT scores

The groups differed academically by GPA based on a 4.0 scale and SAT scores. The Select Group had higher GPA averages (M = 3.84, SD=.25) than the Regular Group (M = 2.90, SD=.53). The Select Group had higher SAT scores (Verbal, Quantitative, and Total) than the Regular Group. These scores are presented in Table 3.

Marital Status

All Ss reported being single.

Composition of Household

The number of members living in the same household was lower for the Select Group. Ninety-eight Ss in the Select Group had an average of 3.7 (SD=1.4) members

Table 3

GPA and SAT Means for the Select and the Regular Groups

Scores	n	Select Group		n	Regular Group	
		M	SD		M	SD
GPA	81	3.84	.25	32	2.91	.53
SATV	85	595.2	71.1	10	382.0	69.9
SATQ	84	669.3	255.3	9	420.0	90.7
SATT	88	1223.4	109.1	17	825.9	105.9

Note. GPA -- Grade Point Average

SATV -- Scholastic Aptitude Test Verbal

SATQ -- Scholastic Aptitude Test Quantitative

SATT -- Scholastic Aptitude Test Total

living in the household; 55 Ss in the Regular Group had 4.07 (SD=1.4). The average number of siblings was lower for the Select Group: 80 Ss in the Select Group had an average of 1.3 brothers and 1.1 sisters; 57 Ss in the Regular Group had an average of 1.5 brothers and 1.3 sisters.

Income Level

The income level for both groups differed. Forty-one Ss (44.61%) in the Select Group, compared to 9 Ss (16.4%) in the Regular Group, reported household incomes above $38,000. Nineteen Ss (34.5%) in the Regular Group reported household incomes between $8,500 and $18,000, compared to 14 Ss (15.2%) in the Select Group. A detailed distribution of the income level for the two groups is presented in Table 4.

Educational Level of Household

In terms of educational level, 95 Ss in the Select Group had an average educational level for their mother as one year plus of college level work; 44 Ss in the Regular Group had high school. For their fathers, 94 Ss in the Select Group averaged two years of college plus; 41 Ss in the Regular Group averaged high school. The siblings' educational level for 65 Ss in the Select Group averaged high school plus; for 31 Ss in the Regular Group

Table 4

Income Level for the Select and Regular Groups

Income level	Select Group n=98		Regular Group n=56	
	n	%	n	%
less than $ 8,500	7	7.6	7	12.7
$ 8,500 ≥ $ 18,000	14	15.2	19	34.5
$ 18,000 ≥ $ 27,000	14	15.2	11	20.0
$ 27,000 ≥ $ 38,000	16	17.4	9	16.4
$ 38,000 and above	41	44.6	9	16.4

one year of college.

Place of Birth

Ninety-six Ss in the Select Group indicated being born in 18 states and 7 countries other than the United States (Cuba, Mexico, Peru, Japan, Colombia, Spain, and the Commonwealth of Puerto Rico). The 55 Ss in the Regular Group were born in 4 states in the United States, 8 in Mexico, and one in Germany. A detailed description of this data is presented in Table 5.

Primary Languages

Out of the Select Group, 71 Ss (72.4%) reported English as their first language, 26 Ss (26.5%) reported Spanish as their first language, and 1 S (1%) reported another language as their first language. For the Regular Group, 32 Ss (55.4%) spoke English as a first language; 25 Ss (44.6%) Spanish.

Heritage

In terms of heritage, 40.8% of the Select Group identified themselves as Mexican; 22.4% as Puerto Rican; 19.4% as South American; 7.1% as Cuban; 3.1% as Central American; and 7.3% marked other. For the Regular Group, 98.2% identified themselves as Mexican and 1.8% South American or other. Table 6 provides identification by heritage for the two groups.

Table 5

Place of Birth for the Select and Regular Groups

Place of birth	Select Group n=96		Regular Group n=55	
	n	%	n	%
California	21	21.9	1	1.8
Puerto Rico	15	15.6	0	0
Texas	11	11.5	43	78.2
New Jersey	7	7.3	0	0
New York	6	6.3	0	0
Colorado	4	4.2	1	1.8
New Mexico	3	3.1	0	0
Florida	3	3.1	0	0
Virginia	3	3.1	0	0
Indiana	3	3.1	0	0
Illinois	2	2.1	1	1.8
Missouri	2	2.1	0	0
Maryland	1	1.1	0	0
Pennsylvania	1	1.1	0	0
Arizona	2	2.1	0	0
Idaho	1	1.1	0	0

(Table 5 continued)

Place of birth				
Washington, D.C.	1	1.1	0	0
Wisconsin	1	1.1	0	0
Washington	1	1.1	0	0
Mexico	3	3.1	8	14.5
Cuba	1	1.1	0	0
Peru	1	1.1	0	0
Japan	1	1.1	0	0
Colombia	1	1.1	0	0
Spain	1	1.1	0	0
Germany	0	0	1	1.8

Table 6

Identification by Heritage for the Select and Regular Groups

Identification by heritage	Select Group n=98		Regular Group n=55	
	n	%	n	%
Mexican	40	40.8	54	98.2
Puerto Rican	22	22.4	0	0
South American	19	19.4	1	1.8
Cuban	7	7.1	0	0
Central American	3	3.1	0	0
Other	7	7.1	1	1.8

Identification by Geographic Area

Most of the women from the Regular Group identified themselves from the Southwest (72.5%). The Select Group's identification varied with 26.5% claiming the West Coast, 14.4% the Southwest, 13.4% the Southeast, and 12.4% respectively the Northeast and Middle Atlantic. Table 7 provides a breakdown of the two groups' identification by geographic area.

Schools/Majors

Forty-four Ss (45.8%) in the Select Group attended a state school; 52 Ss (54.2%) a private school. For the Regular Group 54 Ss (98.2%) attended a state school; 1 S (1.8%) a private school.

The two groups indicated an interest in 64 different majors or combination of majors. For the Select Group 15 Ss indicated an interest in some field of Medicine; 13 Ss in some type of Business related field; 11 Ss were interested in some type of Engineering; 7 Ss in some aspect of Law, Justice, and Politics. Three Ss each indicated interest in Chemistry, Biology, Psychology, and the Social Sciences. The rest of the Ss indicated interest in areas like English, Sociology, and the Liberal Arts or marked undecided. The Regular Group indicated interest in Business (n=11); Medicine and

Table 7

Identification by Geographic Area for the Select and Regular Groups

Geographic area	Select Group n=97		Regular Group n=51	
	n	%	n	%
Northeast	12	12.4	6	11.8
Southeast	13	13.4	4	7.8
Southwest	14	14.4	37	72.5
West Coast	26	26.5	1	2.0
Lower Midwest	5	5.2	1	2.0
Upper Midwest	1	1.0	0	0
Middle Atlantic	12	12.4	0	0
Northwest	4	4.1	0	0
Other	10	10.3	2	3.9

Nursing (n=11); Psychology (n=8); Computers, Communications, Education, English and Law/Justice (n=4 each); Engineering (n=1). The rest were undecided.

Synopsis of Demographic Data

In general, the two groups differed in academic level (as measured by GPA and SAT scores), socioeconomic level, representativeness of ethnic grouping, and other variables. The Select Group (n = 99) was larger than the Regular Group (n = 57). All members of the Select Group had an equal chance of participating in the study. The Regular Group was made of accessible volunteers who agreed to complete the questionnaires primarily in a group setting.

Summary of Results in Terms of Hypothesis

Multiple MANOVAs and a step-wise discriminant analysis were used to test the hypothesis that the two groups would differ on PIT measures and that the Select Group of Hispanic women Scholars would deviate less from PIT normative scores than a Regular Group of Hispanic freshmen women. The data supported the prediction at a high level of significance. Twenty-two MANOVAs were significant at a p level of .02 or less. From the MANOVA and Bonferroni procedures, discriminating at the .05 level or better, one hundred and fourteen variables

were used in an SPSSx stepwise discriminant function analysis using Wilks' lambda. WGTPC/N DIFF was the most discriminating variable and was entered at the first step (ANOVA $p < .0001$). The analysis selected and ordered forty-three variables at which point it reached maximum discrimination possible with the variables used. Overall, the Select Group was closer to the Target Model than the Regular Group on twenty-two of twenty-six of the selected deviation scores.

The percent of grouped cases correctly classified by the discriminant analysis was: Select 96%, Regular 96.5%. These prediction rates could be attributable to the many variables in relationship as compared to the size of the N.

Caution needs to be taken in terms of interpreting the PIT results because differences could be attributable to the number of variables tested, differences between non-respondents and respondents, differences between the groups in socioeconomic level, and other possible confounding variables.

Chapter 5

DISCUSSION AND CONCLUSIONS

The specific hypothesis tested in this study was that an academically Select Group of Hispanic women would deviate less on PIT normative measures than a Regular Group of Hispanic college freshmen women. The data support this hypothesis. The Select Group was closer to the Target Model on twenty-two of the twenty-six discriminant variables selected by a stepwise disciminant function analysis using Wilks' lambda (with significant ANOVA $p < .03$). The Select Group were more deviant on four scores out of the twenty-six (significant ANOVAs $p < .04$). These data are presented in Table 1 and Table 2 (refer to Appendix A and B for a description of PIT needs and scores).

Discussion of results in terms of the PIT

The most significant discriminant variable was the Need Differential Score (WGTPC/N DIFF). The Select Group mean of 35.50 indicates that they have adequate to good need differentiation, generally understand the differences and similarities between needs, and are able

to organize their needs effectively for need satisfaction. Previous research with the PIT indicates that this variable correlates with academic achievement (Chambers, in press).

Some results indicate areas where the Select Group could focus to improve their personal motivation system. These areas could be possible sources of problems in their academic and personal life. For example, the Select Group had the Order Needs more closely associated with the Ego Needs (EGO/ORD). This indicated that their need to organize and order things tends to get confused with their need to execute personal decisions and forcefully assert their will. Close association between the order and the ego needs could cause conflicts that activate doubts and dissatisfaction followed by a compulsive pattern of reordering. In order to avoid this pattern, it might be important for the members of the Select Group to focus on a clear differentiation between their Order and Ego Needs.

Another general problem the Select Group might be experiencing with the Order Need is frustration and interpersonal problems when they attempt to control their feelings and emotions by rules of order. They might be suppressing feelings and emotions rather than giving them

free expression. It is interesting to note that the Select Group was negative toward the Play Need which could also relate to being too serious in personal relationships. The Order Need is one of four rational needs (Understanding, Achievement, Sentience, and Order). Order is appropriate before making a decision or commitment, and is especially helpful when competence is being acquired. Focused and maximized, it can be a great asset in academic situations. Unfocused, it can be detrimental.

The CENPER Score for Order (CENPER/ORD) provides another indicator that the Select Group students tended to centralize their Order Need. According to PIT theory, centralized needs are more frequently activated than peripheral needs. With regards to their attitudes toward the Order Need, the members of the Select Group were closer to the Target Model (less deviant Attitude Score: DEVATT/ORD). The Regular Group (.76) were more positive toward Order than the Select Group (.27) and were more deviant from the Target Model.

In terms of the Attitude Need Scores based on the male pictures (ATTM/ORD), the Regular Group ($\underline{r}$=.99) was more positive toward the expression of Order in the male pictures than the Select Group ($\underline{r}$=1.14).

It was interesting to note that Confusion scores between Dimensions occured even when a person had a satisfactory Dimension correlation score. For example, even though the Select Group had a higher Confusion Score (CONFU/D3D2) than the Regular Group between the Competitive (D3) and the Personal Dimension (D2), their Confusion score (.28) was within acceptable limits (.40 or less). The Select Group also had a higher Confusion Score (CONFU/D1D2) between the Combative and the Personal Dimensions. This Confusion score (.33) was also within the acceptable boundary (.40 or less). It may be possible that in some circumstances the Personal Dimension of the Select Group females intrudes into the Competitive and Combative Dimensions causing conflicts in terms of competitive striving and combative assertion. For example, due to a mix of the Personal with the Combative Dimension, the members of the Select Group might try to be too rational and reasonable in combative situations when they need to be more assertive and agressive in order to effectively assert their will. On the other hand, they may unrealistically expect to be treated "like one of the family" by those with power and authority, even when they do not have close relationships with them. These results might reflect an over-

generalization of the cultural value of "personalism" when those in power and authority are seen as part of the family even when they do not have personal ties. It is also interesting to note that Finch (1986) found that professional women in male-dominated professions had higher Confusion Scores in these Dimensions than the norm group used by Chambers (1980). She suggested that professional women in male-dominated professions have less independently structured Combative and Personal Dimensions than a normal college-age population. The demographic data for the Select Group indicated that their choices of majors were primarily in the fields of Medicine, Business, Engineering and Law. These are generally considered to be male-dominated professions.

In general, the members of the Select Group were sensitive to differences between needs and more able to perceive these differences in facial expressions than the Regular Group. Yet, in some areas both groups differed from the norm group in their perceptions. Their Judgment Scores indicated that they differed significantly in the way they perceived how the Inferiority and the Rejection Needs were communicated. For the Select Group, the average Judgment Score for the Rejection Need was low (r= .30); the average Judgment Score for the Inferiority

Avoidance Need ($\underline{r}$=.17) also showed little agreement with the Target Model. It is interesting to note that the Regular Group ($\underline{r}$=.31) had a higher score than the Select Group ($\underline{r}$=.17) for the Inferiority Avoidance Need. On one hand, this indicates that the Select Group could have problems satisfying their need to avoid failure, inadequacy and inferiority. Their superior academic status could be partly at the expense of excessive concerns about failure, embarrassment, humiliation, feeling foolish, or "losing face." On the other hand, their perception and interpretation of the Inferiority Avoidance Need might drive them to take competitive risks others would avoid. It does seem that both groups could benefit from being more aware of how others communicate the Inferiority Avoidance and the Rejection Needs by their actions and expressions and thus learn when it is appropriate and when it is not appropriate to express these needs. It is possible that the members of both groups are having problems with the need to resist pressures to do things they do not wish to do. Both groups may experience pressure from two or more sets of differing cultural values that demand the acceptance of two dichotomous sets of rules, for example, individuality and familism (focus on the family instead of the

individual) at the same time.

Another area to note was the position of the Abasement and Blame Avoidance Needs in the personality structure of both groups. The Abasement Need relates to the ability to admit faults and weaknesses. It is the honest admission of faults and errors and does not indicate a sense of worthlessness as a person. It differs from Self-Abasement in that the latter is a severe attack on the self with consequent feelings of worthlessness and debasement. The Select Group's Judgment score of .57 matched the Target Model's score. The Regular Group's average Judgment score of .32 was below the average, denoting a problem with self-abasement. These scores indicated that the Select Group members were more able to admit faults and weaknesses, learn from their mistakes, and feel pride and satisfaction in their accomplishments. Yet at times, the centralized location of Abasement Need for the Select Group (CENPER/ABA) indicated that they could activate the Abasement Need too frequently and over-acknowledge their shortcomings. The Regular Group tended to have an aggressive or combative type of abasement resulting in self-abasement and self-punishment.

The Blame Avoidance Need is the need to avoid doing

things which might arouse criticism or blame. It is always person-oriented because blame and punishment come from the acts or intentions of others. The primary function of the Blame Avoidance Need is to provide internal controls over our combative and competitive impulses. When this Need is not well developed people can become overly perfectionistic, hyper-sensitive to criticism, develop overconformity, unrealistic anxiety, and guilt and depression in order to avoid blame and disapproval. The Problem Score (PROB/BLA) indicates that the Select Group (1.90) had less trouble knowing when and how to avoid doing things which might arouse criticism or blame than the Regular Group (2.61). The Regular Group could be having significant problems in their beliefs about how the need is effectively expressed and problems expressing it.

The organizing power of the Autonomy Need (ORG/AUT) in the Select Group's need system was negative (-0.08). The Regular Group's average of .09 indicated they considered Autonomy a more positive organizer. The Regular Group tended to desire more freedom and independence. It was interesting to note that the members of the Select Group were generally attending private or state universities away from their place of

birth while the Regular Group attended primarily one university located in their home state. It seems that the members of the Select Group had been able to move geographically away from their homes and possibly were feeling the responsibility and pressures associated with this change. It may be possible that they have internalized cultural messages about the extended family and the importance of interdependence rather than autonomy as a norm. The Select Group's Judgment Score (.52) for this need (JUDG/AUT) was within the average range indicating agreement with the Target Model. The Regular Group's Score was low (.43) indicating some problems with knowing when to be free, independent and uninhibited.

Two VALZ scores (ipsatively standarized scores based on the S's average rating of the strength of the need across all twelve pictures) indicated that the groups tended to differ in their perception of the Achievement and Exhibition Needs. The Select Group's VALZ/ACH score indicated a strong perception of the need for achievement in others. This may be a projection of their own strong achievement need. The Regular Group's mean VALZ score for the achievement need need was negative and lower (-.04) indicating less sensitivity and concern for the

need. For the Exhibition Need, the Select Group's average VALZ score was .18, and the Regular Group's VALZ score was -.11. These scores indicate that the Select Group women perceive this need more strongly than the Regular Group women. These results are in keeping with the Achievement Need VALZ results described above in that both Achievement and Exhibition are strong competitive needs. Thus, the Select Ss showed more concern and sensitivity than the Regular Ss for these competitive needs.

Both the Select and Regular Groups had negative average VALZ scores for the Play Need (Select = -.49; Regular = -.11). The more strongly negative scores of the Select Group suggested that they are more apt to "tune out" the Play Need and may thus fail to perceive opportunities for fun and relaxation. The Select women may cultivate seriousness and sacrifice play for work and achievement.

In general, the Select Group was more able than the Regular Group to integrate the various components of their motivation system, as assessed by the PIT, into an effective system that promotes need satisfaction. These results are consistent with findings by Chambers (in press) that indicate that students with low freshman year

grade point averages (GPA) deviated more on normative PIT measures than those with higher GPAs.

As expected, the Select Group had a higher mean high school GPA (3.84) than the Regular Group (2.91). The Select Group's mean SAT scores were higher than the Regular Group in all sections. The Select Group's verbal mean was 595.2 (SD=71.1); their math mean score was 669.3 (SD=255.3); compared to the Regular Group's verbal mean score of 382.0 (SD=69.9) and match mean score of 420 (SD=90.7). The Select Group's Verbal scores are comparable to the Ss studied by Chambers (in press) whose verbal mean scores were 595 (SD=72). The Select Group's math mean scores were higher than Chambers' group which scored 618 (SD=68). It is important to note that Goldman and Richards (1974) found that when Anglo and Mexican-American Ss from the University of California at Riverside were administered the SAT, language and math scores did not predict college grades for Hispanics.

It is interesting to speculate how language affects these results. Even though 72.4% of the Select Group and 55.4% of the Regular Group reported English as their primary language; 26.5% (Select) and 42.6% (Regular) of the Ss who responded to this item reported Spanish as a first language. The PIT uses verbal responses in English

which could have affected the results.

Another significant variable to be considered is the socioeconomic level of the groups. The Select Group is of a higher socioeconomic level than the Regular Group. Forty-four point six percent of the Select Group's households reported incomes above $38,000. Only 16.4% of the Regular Group reported incomes above $38,000. Thirty-four point five percent of the Regular Group reported household incomes between $8,500 and $18,000; 15.2% of the Select Group reported within this range. Twelve point seven percent of the Regular Group reported household incomes less than $8,500; 7.6% of the Select Group reported household incomes in this range. The results of this study could be different if the socioeconomic variables were controlled. Barro and Kolstad (1987) found that when socioeconomic and other family background factors are controlled, high school dropout rates across ethnic backgrounds changed significantly.

Caution needs to be taken in terms of interpreting the PIT results as related only to scholarly attainment because demographic differences could be a primary factor in the high degree of differentiation between the two groups. In fact, the differences could be attributable

to a number of confounding variables rather than to the differences in scholarship of the groups. Extraneous variables include: the small number of Ss, the large number of variables explored, differences between respondents and non-respondents, various rates of response to different items, differences in socioeconomic levels, language, place of origin, and ethnic identification.

Conclusions

The design of this study allowed the investigation of an area of concern and interest for counselors and educators. The area includes investigation of motivation as a factor in the academic performance of Hispanic women in secondary and/or postsecondary settings. The findings of this study support findings by Chambers (in press) of the PIT's effectiveness in discriminating amongst groups differing in academic characteristics.

It would be of value to continue exploring the place that "culture" plays in the motivational dynamics of Hispanic women. It could be that the ability to acculturate at different levels necessitates personality dynamics that contrast with the normative culture. Normative cultural values could exist that differ from the ones measured by the PIT. Any generalizations would

have to take into consideration variables such as bilinguality, dual socialization processes, rules of conduct for male and female roles, a focus on the spiritual antecedents to behavior and belief, and norms that focus on potentially conflicting values (for example the need to be independent with the need to be interrelated).

The results suggest, however, that an understanding of PIT personality dynamics could help students successfully integrate new situations and values in a positive interactive manner. Developing role models could become an easier process when seen as a growing process and not in terms of focusing on what is negative. A problem-oriented approach focusing on personal and cultural interactions and dynamics has much to offer students in general and especially those "at risk" who may already suffer from lack of self-esteem. Based on Chamber's theory (1988) that motivation is a key to learning and that personality and adjustment determine the ways we learn to meet our needs and the needs of others, the PIT may be used to improve academic performance and key on motivation as a crucial factor in academic success. In this light, the PIT can be of value in investigating students' beliefs and values at a

multicultural level and perhaps provide data to help counsel students before adjustment problems lower their self-esteem and increase the chances of their dropping out of school.

Suggestions for Further Research

This study provides an avenue for further research in the multicultural use of the PIT, and/or instruments like the PIT. A facet of this study could evaluate the PIT in a longitudinal design to explore its reliability and validity in a multicultural setting. A similar study could be replicated increasing the number of Ss and controlling for other variables such as socioeconomic level, identification by heritage, sampling and testing variables.

Classes could be given using the PIT with open discussions between participants to enhance an exchange of values, beliefs, and behaviors opening awareness of the way we communicate, encode and decode facial expressions and other situational cues within and across cultures.

Another study could use the proposed new version of the PIT which will use photographs of paintings rather than college students to address the possible problem of cultural bias in the selection of pictures for the

version of the PIT (E) used in this study.

In general, further studies are indicated that investigate motivation as a factor in academic performance and distinguish groups differing in academic characteristics. It is possible that an instrument such as the PIT can be refined and used effectively in pluralistic settings with the practical goals of enhancing self-esteem, increasing retention rates and promoting successful academic performance. Exploratory studies such as this could provide avenues to address "the crisis in education" of identifying and helping "at risk" students.

A pluralistic model based on the PIT could potentially recognize individual beliefs, values, and behaviors that impact the interaction with a particular cultural situation.

APPENDIX A

Picture Identification Test Need Definitions

Abv.	Need	Definition
(ABA)	Abasement	The need to admit faults and weaknesses.
(ACH)	Achievement	The need to work hard to attain goals.
(AFF)	Affiliation	The need to be friendly and sociable.
(AGG)	Aggression	The need to be forceful and criticize or attack others.
(AUT)	Autonomy	The need to be free, independent, and uninhibited.
(BLA)	Blame Avoidance	The need to avoid doing things which might arouse criticism or disapproval.
(CNT)	Counteraction	The need to improve oneself and correct mistakes and shortcomings.
(DFD)	Defendance	The need to stand up for one's rights and defend oneself.
(DEF)	Deference	The need to follow the advice and guidance of those with experience and authority.

(DOM)	Dominance	The need to assert leadership and act in a commmanding and persuasive way.
(EXH)	Exhibition	The need to express ideas and exhibit one's talents and abilities.
(GRA)	Gratitude	The need to be appreciative, thankful, and grateful.
(HAR)	Harm Avoidance	The need to avoid harm and danger.
(INF)	Inferiority Avoidance	The need to avoid failure, inadequacy, and inferiority.
(NUR)	Nurturance	The need to give aid and comfort to others.
(ORD)	Order	The need to systematize, organize, and put things in order.
(PLA)	Play	The need to play, have fun, and enjoy oneself.
(REJ)	Rejection	The need to resist pressures to do things one does not with to do.
(SEN)	Sentience	The need to appreciate the beauty and harmony of one's surroundings.
(SEX)	Sex	The need to satisfy sexual desires.
(SUC)	Succorance	The need to receive help, support, and assistance.

(UND) Understanding The need to learn, understand, and find the meaning of things.

Note. These definitions were abstracted from the PIT Manual (1988).

APPENDIX B

Picture Identification Test Score Descriptions

Label	n	Combative, Personal, and Competitive
		Dimension Scores
RMAT	3	r between Subject and Target locations of needs for each dimension. Normative score. Low = deviant.
WGTPC	4	% (weight) for each dimension to total space (WGTPC). High = good.
CONFU	6	Measure of confusion (lack of independence) between each pair of dimensions. Low = good.
RATTD	3	r between Subject's need attitude scores and Target need locations for each dimension. High = positive.
RATTFD	3	RATTD based on female pictures.
RATTMD	3	RATTD based on male pictures.
		Association Need Scores
SUMSA	22	Subject's association deviations from Target model need associations. Normative score. High = deviant.
SUMSF	22	SUMSA based on female pictures. Normative score. High deviant.
SUMSM	22	SUMSA based on male pictures. Normative score. High = deviant.

DIFDVF	22	Association deviations for female pictures (SUMSF) relative to all pictures (SUMSA). Normative score. High = deviant.
DIFDVM	22	Association deviations for male pictures (SUMSM) relative to all pictures (SUMSA). Normative score. High deviant.
DVZ	3	Z scores for DIFDVF and DIFDVM sums and difference between the two. Normative score. High = deviant. Abs high = deviant for DVZ 3 (difference).
RASSMF	22	r between Subject's male and female picture associations for each of 22 needs.
EGO	6	Association deviations based on 6 ego needs. Normative score. Abs high = deviant.
NONEGO	16	Association deviations of 12 non-ego needs from 6 ego needs. Normative score. Abs high = deviant.
CENPER	22	Central-peripheral location of need in Subject's need system. High = peripheral.
CPDEV	22	Deviations from Target model of central-peripheral locations of needs. Normative score. High = deviant.

Perceptual Judgment Need Scores

JUDG	22	r between Subject and Target group (mean) ratings fo strength of need. Normative score. Low = deviant.
VAL	22	Subject's average rating of strenght of the need across all 12 pictures. Low = strong.
VALZ	22	Ipsatively standarized VAL scores. High = strong.

Attitude Need Scores

ATT	22	Positive-negative value associated with need. Low = positive.
ATTF	22	PIT scores based on female pictures.
ATTM	22	PIT scores based on male pictures.
DEVATT	22	Deviation of ATT scores from Target model values. Abs high = deviant.

Combination Need Scores

PROB	22	General indicator of problems for a need based on SUMSA, CDEV, EGO, and JUDG scores. Normative score. High = deviant.
ORG	22	General organizing power of need in Subject's need system based on VAL, ATT, and CENPER scores. High = positive.

Note. n stands for the number of scores in the set. These definitions were abstracted for the PIT manual (1988).

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