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A comparison of MMPI scores of Anglo and Mexican American psychiatric patients

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A COMPARISON OF MMPI SCORES

OF ANGLO AND MEXICAN AMERICAN

PSYCHIATRIC PATIENTS

A Thesis

Presented to

The Faculty of the School of Social Work

San Jose State University

In Partial Fulfillment

of the Requirements for the Degree

Master of Social Work

by

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May 1975

APPROVED FOR THE SCHOOL OF SOCIAL WORK

APPROVED FOR THE UNIVERSITY GRADUATE COMMITTEE

ACKNOWLEDGMENTS

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CHAPTER I

THE PROBLEM

Mexican Americans are one of the largest minorities in the United States and are the single largest minority in the Southwestern region of that country. Many Spanish speaking, Spanish surname Mexican Americans utilize mental health services in which one widely administered diagnostic instrument is the Minnesota Multiphasic Personality Inventory (MMPI). The MMPI has not been standardized with Mexican American subjects, and it is possible that there may be differences in the scores between Mexican American and the Anglo normative groups on which the MMPI was standardized.

The goal of this study is to determine whether there are significant differences in the MMPI scores between Mexican American and Anglo American psychiatric patients in Northern California community mental health services.

It is hoped that the results of this study will be helpful to mental health workers who are providing services to Mexican Americans. The results may also be of use to workers in other fields since the MMPI is utilized in a variety of other settings.

CHAPTER II

REVIEW OF THE LITERATURE

A review of the literature from 1954 to 1974 reveals a near absence of research on the psychological assessment of the Mexican American. Of more than 18,000 abstracts on personality testing (Buros 1970), there are only seven that deal with the Spanish speaking Mexican American. Since 1970, only three studies were found in the literature that are aimed at the psychological assessment of the Mexican American. In total, then, only ten studies were found.

Rorschach performance was compared between four groups (Kaplan 1955), two of which were considered to be largely non-acculturated into the larger society, and two which were considered more acculturated (i.e., Navaho and Zuni Indians vs. Mormons and Spanish Americans). Additionally, the assumption was made that military veterans would have had more exposure to the values of the dominant culture than non-veterans and would be more acculturated. Therefore, the four culture groups were subdivided on the basis of military experience. The results indicate that veterans were more acculturated than non-veterans. It was found that veterans tended to perceive human movement with greater frequency and used the concept of color on the Rorschach cards to explain their responses. It was suggested, with appropriate caution,

that these differences might reflect more extraversion and creativity on the part of veterans from these culture groups.

The second Rorschach study (Kaplan, Rickers-Ovsiankina, and Joseph 1956) further examined differences between these four culture groups. The records of six veterans from each culture group were selected and two judges attempted to sort these records into meaningful cultural groups. One of the judges had extensive knowledge of all the cultures involved and was rather successful in sorting the Rorschach records into the correct groups. The other judge was told only that the records could be sorted into distinct categories but was not informed what those culture groups were. That judge was unable to sort the records into meaningful culture groups. The authors concluded that the Rorschach responses from the Spanish American group were distinct enough to be differentiated from the Anglo and Indian groups. However, the authors also note that

> . . . the only systematic difference that is striking to us is the apparent lack of involvement and motivation for outstanding performance on the part of many Spanish Americans . . . the Spanish American subjects . . . were not attempting to give more than a minimum number of responses to the test (p. 179).

Additionally, Padilla and Ruiz (1970), in discussing the above-mentioned Rorschach studies, cite several reservations regarding the approach of interpreting the results of the studies. In the first study (Kaplan 1955), Padilla and Ruiz point out that

there may be some difficulty in detecting whether

(differences observed) are due to individual personality, culture-group membership, personal experiences with the majority groups, some other extraneous variable, or the interaction of all these factors (p. 55).

It was also noted that the assumptions underlying the selected statistical test of significance were probably not satisfied since analysis of variance requires that scores be independent of each other, but the Rorschach scores are intercorrelated.

With regard to the second study (Kaplan et al. 1956), Padilla and Ruiz make the observation:

> This "lack of involvement and motivation" raises additional problems of interpretation. To what extent was the Spanish-American culture correctly identified on the basis of decreased frequency of percepts? And why were these Spanish American subjects motivated to respond in this fashion? One possibility is decreased verbal fluency, another is lack of interest in the task, and there are doubtless other possible explanations. The problem is that we cannot evaluate whether fewer Rorschach responses in this case reflect a common cultural trait, individual personality differences, or just indifference toward an examination procedure perceived as meaningless (p. 56).

In another study (Johnson and Sikes 1965), responses from Negro, Mexican American, and Anglo American psychiatric patients were compared. Each group had 25 subjects who were matched for age, education, and occupational levels. Each subject was administered the Rorschach and the Thematic Apperception Test (TAT).

Numerous statistically significant differences appeared between groups. The most distinct differences on the Rorschach were on the measures of hostility. The Mexican American group was high on "Potential Hostility" while

the Negro subjects were high on "Victim Hostility." On the
TAT differences were related to "family unity." Mexican
Americans tended to view the family as unified. Further, the
Mexican American group clearly differed from the other groups
in mother-son and father-son relationships. Mexican Americans
described the mother as nobly self-sacrificing and the fa-
ther as authoritarian and dominant. A major finding of the
Johnson and Sikes investigation is that Mexican American
patients manifested a unique pattern of responses to both
projective tests.

The short version of the Holtzman Inkblot test was
administered to 19 Anglo American, Mexican American, and
Negro hospitalized schizophrenic patients (Fabrega, Swartz,
and Wallace 1968). It was found that the projective data
did not differ appreciably between the three matched-patient
groups. However, ratings of psychopathology made indepen-
dently by resident psychiatrists and nurses suggested that
the Mexican American schizophrenics were more clinically
disorganized and regressed than the other two groups. While
there was no explanation given for this apparent discrepancy,
Fabrega et al. suggested that the Mexican American subjects
in their study may have been acculturated to Anglo patterns
and values.

Differences in personality of Anglo American, Mexi-
can American, and Mexican college males were investigated by
Logan (1967). Achievement needs, affiliation needs, and

power needs were studied by use of the TAT, a short autobiography, and the Rosen Scale of Values. There were controls for age, family size, and occupation. In addition, the three culture groups were compared taking into account religeous affiliation. Logan reported finding significant differences in two areas. Anglo Protestants and Mexicans were higher on need achievement than Anglo and Mexican American Catholics. On need affiliation, Mexicans scored higher than the other groups. On need power, there was no significant difference between the groups.

Justin (1970), using a special questionnaire revised from a questionnaire developed by the Institute of Behavioral Sciences of the University of Colorado, investigated the responses of Mexican American and Anglo American second semester high school seniors in the areas of personal control and delayed gratification. It was found that Mexican Americans tended to express less personal control, and Mexican Americans also tended to have greater difficulties in delaying gratification.

In a recent study (Garza and Ames 1974) 47 Anglo American and 47 Mexican American college students were matched on socio-economic status and sex, and the subjects were administered Rotter's I-E scale. In addition to examining differences on the full I-E scale, differences were examined on five sub-categories: luck/fate, politics, respect, leadership/success, and academics. Mexican Americans scored

significantly less externally on the full I-E scale. Significant differences were also found on two of the five subcategories. Mexican Americans scored significantly less externally on the luck/fate dimension and on the respect dimension. The authors explained these findings in terms of cultural values of the Mexican American group. They reported that the family-centered orientation and the perennial resistance to give up their culture and heritage suggest belief in internal locus of control inasmuch as they indicate resistance to external influences. Garza and Ames speculated that the Mexican Americans' less external score on the luck/ fate dimension may indicate that fatalism is not a Mexican American cultural characteristic but a function of socioeconomic status. The fact that Mexican Americans are usually polite and respectful toward others even when it is not an expression of true feelings, suggested to the authors a great deal of internal control over that interpersonal dimension. The authors concluded that the findings not only contradicted the stereotype that Mexican Americans were fatalistic and controlled by external forces but suggested that the Mexican American culture actually contributes to a greater perception of internal control. However, the authors caution that the subjects were college students, and, therefore, generalization of the findings to the entire Mexican American population may be inappropriate.

A study employing the California Psychological

Inventory (Mason 1967) highlights some problems that the re-
searcher may encounter with paper-and-pencil objective per-
sonality inventories: Subjects were 13 and 14-year-old
American Indian, Anglo, and Mexican American disadvantaged
junior high school students who were participating in a
summer educational enrichment program. Padilla and Ruiz
(1970) pointed out the difficulties rather well in their re-
view of the Mason study.

> It is beyond the scope of the review to attempt to
> cite all the significant findings which emerged from the
> statistical analyses. Suffice it to note that Mexican
> American males and females manifested response patterns
> which were different from each other, as well as being
> different from the performance of the other two groups.
> Of perhaps even greater relevance to this review is the
> observation that
>> . . . the limited verbal facility of the present
>> population necessitated modification of the usual
>> administration . . . and . . . the test was adminis-
>> tered in six separate sessions, allowing time for
>> completion and opportunity for assistance with
>> unfamiliar vocabulary (p. 146).
>
> To enable the reader to decide the validity of this
> type of test for the Spanish speaking, consider this
> quotation: . . . one Mexican girl initially responded
>> to the item, "I think Lincoln was greater than
>> Washington," by stating that she could not answer
>> because she had never been there! (p. 153).
>
> (Padilla and Ruiz, p. 57.)

The above study, as well as the following study,
rather dramatically pointed to the need of exercising great
caution in interpretation of the findings of research with
subjects whose ability to speak English is limited.

Padilla and Ruiz (1970) also reported a study by
Komaroff, Masuda, and Homes (1968) which investigated ad-
justment required by certain specified life-change events.

The responses of Negro, Mexican American, and White Americans were compared on the Social Readjustment rating scale. Subjects were requested to rate the degree of stress evoked by a total of 43 "life-change events" such as, death of spouse, divorce, marital separation, etc. An interesting finding was that Mexican Americans and Negroes were more like each other than the White American. Negroes and Mexican Americans rated items associated with work and income as much more stressful than the White Americans. It was suggested that these differences occur because of poverty conditions of minority members. Another finding was that Mexican Americans rated such items as "death of a close family member," or "major personal injury or illness" as less stressful than the other two groups. This finding was explained as indicative of support the Mexican American receives from the traditional extended family. It is noted that most Anglos and Negroes cannot rely upon that kind of support system.

The researchers also noted that the wording of the test instrument was simplied after trial runs indicated that the subjects did not understand the original wording. It is also mentioned that subjects were given verbal instructions because of balking at having to read long, detailed instructions. These procedures raise questions regarding the validity of the results since the standardization procedure was discarded in order to be able to complete the investigations.

Only one study was found in the literature during
the period 1954-1974 which uses the Minnesota Multiphasic
Personality Inventory (MMPI) to investigate personality dif-
ferences between Mexican American and Anglo American groups
(Reilley and Knight, 1970). The study investigated differ-
ences in the MMPI scores of Spanish surname and non-Spanish
surname college freshmen at a southwestern American
university. While there were apparently no controls to
ascertain that all the subjects in the Spanish surname group
were, indeed, Mexican Americans, nor that there were only
Anglo Americans in the non-Spanish surname group, several
differences between the groups were found. The Spanish sur-
name group scored higher on the L (lie) scale of the MMPI, a
finding interpreted as suggestive of more strict moral prin-
ciples, or overly conventional attitudes. It was found that
the non-Spanish surname group scored higher on the Pa(para-
noid) scale, a result that was taken to indicate that group
was more subjective, sensitive, concerned with self, and
less trusting. It was also found that Mexican American
males and Anglo American females scored higher than their
counterparts on the following scales: Pt (psychasthenia),
indicating worry and anxiety; Sc (schizophrenia) reflecting
social alienation, sensitivity, worry, and the tendency to
avoid reality by use of fantasy; Si (social introversion)
showing a tendency toward introversion, modesty, and shyness.

An examination of the related research clearly indi-
cates the paucity of investigations in the area of personality

assessment of the Mexican American.

No coherent set of results was found in the litera-
ture because of the variety of instruments and personality
dimensions used in the studies, while those using similar
instruments (i.e., the three Rorschach studies), reported
different results. A systematic approach to investigating
possible personality differences between Anglo Americans and
Mexican Americans has not been undertaken thus far. Until
such investigations have been conducted, it is only possible
to speculate about the existence of personality differences
due to differences between the two cultures.

CHAPTER III

HYPOTHESES

The findings of the only other study mentioned in the literature using the MMPI to compare Mexican American and Anglo American subjects (Reilley and Knight 1970) are the bases for the hypotheses of this study.

It is hypothesized that the scores of the Mexican American subjects will be higher than the Anglo American subjects on the L scale.

It is hypothesized that the Anglo American group will score higher than the Mexican American group on the Pa scale.

It is hypothesized that the Mexican American male and Anglo American females will score higher than Mexican American females and Anglo American males on the Pt, Sc, and Si scales of the MMPI.

CHAPTER IV

METHOD

Operational Definitions

For purposes of this study, by Mexican American was
meant those persons whose last name was of Spanish origin,
who indicated by means of the questionnaire that they speak
Spanish, and who identified themselves ethnically as Mexican
American or Chicano. The terms SSSS (Spanish speaking,
Spanish surname) and Mexican American were used interchange-
ably in this study.

By Anglo or Anglo American was meant those persons
who did not have a Spanish origin last name, who indicated
by means of the questionnaire that they did not speak
Spanish, and who identified themselves ethnically as White or
Anglo American. The terms Anglo, Anglo American, and non-
SSSS were used interchangeably in this study.

By patient was meant an individual who had been
screened by a community mental health service, who had a
mental health medical chart opened in his/her family name,
and who had made at least two visits to the mental health
service.

Terms used from the Minnesota Multiphasic Personal-
ity Inventory (MMPI) were as defined by that inventory.

By socioeconomic status (SES) was meant the social

and economic factors that combine to create one's rank in the community. In this study, SES was measured by using a weighted combination of occupation, income, and education. Parent's occupation, income, and education was used if the patient was a minor. (See Appendix for more thorough description of SES.)

By age was meant chronological age, stated in the number of years from the date of birth of the subject.

By presenting problem was meant the primary difficulty that the patient experienced that lead to the referral to the community mental health service. Presenting problem was determined by a report from the patient's primary therapist, and consisted of five categories: thought disorders, mood disorders, relationship difficulties, anti-social acts, and somatic complaints. Thought disorders were marked by alterations of concept formation which may lead to misinterpretation of reality, delusions, or hallucinations. Mood disorders were marked by ambivalent, constricted, and inappropriate emotional responsiveness and loss of empathy with others. By relationship difficulties was meant those presenting problems in which the principle complaint stemmed from a conflicted relationship with a significant other in one's life, i.e., marital problems, limit setting on children. By anti-social acts was meant behavior that had resulted in the patient being drawn into the law enforcement system, i.e., drug usage, criminal behavior. By somatic complaints was meant those disorders which were characterized

by physical symptoms that were caused by emotional factors, i.e., complaints of low-back pain, conversion hysteria, neurodermatosis, headaches, asthma, gastrointestinal disorders.

Subjects

The population of this study was composed of persons 13 years of age and older, who were patients in a mental health service at the time of the study.

The subjects in this study were Mexican Americans who were bi-lingual, bi-cultural, and Anglo Americans who were not bi-lingual, bi-cultural. In a study that is attempting to assess personality differences between two cultures, it was important that the Mexican American subjects be bi-lingual and bi-cultural, since language, culture, and personality are closely inter-related (Sapir, 1970).

There were 113 subjects in the sample. There were 78 Anglo subjects (45 females and 33 males). There were 35 Mexican American subjects (20 females and 15 males). The original sample contained 125 subjects; however, 12 subjects were eliminated because there was a high probability that their profiles were invalid as determined by the rule that the difference between the raw score on F scale and the raw score on K be no greater than +12.

Instruments

In this study, three instruments were utilized. Each subject was administered the 566 question form of the MMPI. In addition, a questionnaire was completed by the

patient's primary therapist which was aimed at determining
the socioeconomic status, age, sex, presenting problem,
languages spoken, and ethnicity of the patient (see Appen-
dix). A third instrument was devised to quantify the infor-
mation obtained on the patient's socioeconomic status into
a SES score (see Appendix).

Procedure

Data were collected by the patient's primary thera-
pist, all of whom were professionals in community mental
health services in three Northern California counties. The
MMPI and questionnaire for each subject were delivered to
the author and kept together until processing. Data were
recorded on IBM coding forms in preparation for keypunching
for the computer analysis.

Statistical Procedure

This study had 13 dependent variables, three inde-
pendent variables, and two covariates.

The independent variables were 13 MMPI scales: L
(lie), F (infrequent responses), K (ego functioning), Hs
(hypochrondriasis), D (depression), Hy (hysteria), Pd (psy-
chopathic deviate), Mf (masculinity-femininity), Pa (para-
noia), Pt (psychasthenia), (schizophrenia), Ma (hypomania),
and Si (social introversion).

The three independent variables were culture, sex,
and presenting problem. Culture had two levels: Mexican

American and Anglo. Sex had two levels. Presenting problem
was used to insure close proportion in each culture group
and had five levels: thought disorders, mood disorders, re-
lationship difficulties, anti-social acts, and somatic
complaints.

The two covariates were socioeconomic status (SES)
and age. SES was a continuous variable with a range of ap-
proximately 5-18. Age was also a continuous variable with a
range of approximately 13-55.

The data was subjected to a multivariate analysis of
variance and covariance (MANOVA). The dependent variable Mf
was analyzed separately using the t-test. This procedure
was necessary because of the difference in the meaning of
the scores on this scale for males and females.

The data was processed with and without covariates.
That is, there was a first computer run using the covariates
of SES and age, and this was followed by the same computer
run without covariates. Additionally, as a post-hoc proced-
ure, the 13 dependent variables were subjected to a univar-
iate analysis of variance using the MANOVA program. In a
second post-hoc procedure, the 13 variables were subjected
to the multivariate analysis of variance and covariance and
to the univariate analysis of variance, but the K-correction
was eliminated for the five scales that incorporate the K-
correction (Hs, Pd, Pt, Sc, Ma).

All MMPI scores were reported in t-scores and not in
raw scores.

The design and methodological procedures of this study were aimed at determining if there were significant differences between Mexican American and Anglo psychiatric patients with regard to culture or culture-sex interactions on the scales of Minnesota Multiphasic Personality Inventory. The design was a 5 x 2 x 2 complete factorial with no missing cells. There were 13 dependent variables, 3 independent variables, and 2 covariates.

CHAPTER V

RESULTS

Significant differences between the two culture groups were found with respect to the L and K scales of the MMPI. The omnibus F test of the main effect of culture, with two covariates, and considering 12 MMPI scales simultaneously, was significant ($F=2.558$, $df=12/80$, $p<.006$). On the ANOVA, post-hoc, the L scale difference was found to be significant ($F=5.004$, $df=1/91$, $p<.027$), and the K scale was found to be significant ($F=6.092$, $df=1/91$, $p<.015$).

Without the SES and age covariates, the omnibus F test for the main effect of culture was significant ($F=2.546$, $df=12/92$, $p<.007$). L was significant ($F=5.406$, $df=1/93$, $p<.022$), and K was significant ($F=5.081$, $df=1/93$, $p<.027$).

The higher scores of the Mexican American group on the L scale may be indicative of a tendency towards being overly conventional, socially conforming, and an attempt to rigidly control any overt expression of antisocial or unethical impulses. The higher elevation of the Mexican American group on the K scale may indicate a tendency toward defensiveness and a tendency toward repression of psychological conflict.

The K scale of the MMPI is one of three scales (L, F, K) that make up the validity section of the inventory.

Table 1

Mean Scores of Subjects by Culture and Sex; with K-corrections

	L	F	K	Hs	D	Hy	Pd	Mf	Pa	Pt	Sc	Ma	Si
Mexican American Male	56.80	73.53	55.4	66.00	70.00	68.07	71.73	56.27**	64.07	64.53	71.87	62.33	52.73
Mexican American Female	49.80	68.00	49.35	59.4	65.85	60.95	70.25	48.9	64.95	63.65	72.05	64.00	58.15
Anglo - Male	48.42	64.82	48.82	61.67	70.48	64.36	74.52	66.97	66.27	69.88	65.67	66.70	56.55
Anglo - Female	49.89	65.49	47.89	60.31	67.87	66.13	72.42	46.58	66.84	65.89	69.76	63.58	60.20
Male	51.04	67.54	50.88	63.02	70.33	65.52	73.65	63.63	65.58	68.21	67.60	65.33	55.35
Female	49.86	66.26	48.34	60.03	67.25	64.54	71.75	47.29	66.25	65.20	70.46	63.71	59.57
All Mexican American	52.80*	70.37	51.94*	62.23	67.63	64.00	70.89	52.06	64.57	64.03	71.97	63.29	55.83
All Anglo - American	49.27	65.21	48.28	60.88	68.97	65.38	73.31	55.21	66.60	67.58	68.03	64.90	58.65

* Significant at .05 level
** Significant at .001 level

The K scale has additional importance in that percentages of
the raw K score are added to the raw scores of five of the
clinical scales of the MMPI (Hs, Pd, Pt, Sc, and Ma) in de-
termining the t-scores of those scales. Since the Mexican
American group scored significantly higher than the Anglo
group on the K scale, a post-hoc procedure was conducted to
determine if the difference in the K scale score between
the two groups was making a significant difference in the
scores on the five clinical scales that incorporate the K-
correction. Therefore, the 12 MMPI scales were reprocessed
using the MANOVA program, but on this run the five above-
mentioned scales did not include the K-correction.

The omnibus F test for the main effect of culture,
with two covariates, and eliminating the K-correction on
those scales that incorporate the K-correction, was signifi-
cant (F=3.109, df=12/80, p<.001). On the univariate ANOVA
post-hoc, the Pt scale difference was significant (F=7.348,
df=1/91, p<.008). While none of the other clinical scales
were significant at the .05 level, two of the scales ap-
proached that level of significance: Pd (F=3.490, df=1/91,
p<.065) and Ma (F=3.383, df=1/91, p<.069).

The omnibus F test for the interaction of culture and
sex (CS) was not significant (F=1.523, df=12/80, p<.133)
with two covariates and considering the 12 MMPI scales
simultaneously.*

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*Technically, the researcher should not proceed to

Table 2

Mean Scores of Subjects by Culture
and Sex; without K-corrections

	Hs	Pd	Pt	Sc	Ma
Mexican American Male	46.93	57.87	31.67	44.67	54.73
Mexican American Female	46.80	57.60	44.10	53.35	55.55
Anglo - Male	46.52	63.06	46.52	50.82	61.27
Anglo - Female	48.93	61.69	47.13	52.89	57.09
Male	46.65	61.44	41.86	48.90	59.23
Female	48.28	60.43	46.20	53.03	56.62
All Mexican American	46.86	57.71	38.77*	49.63	55.2
All Anglo - American	47.91	62.27	46.87	52.01	58.86

* Significant at .01 level

examine the univariate F tests for the individual MMPI
scales. Nonetheless, the data presented in Tables 1 and 2
suggested to the researcher that the Mexican American males
were scoring higher than the Mexican American females, the
Anglo males, and the Anglo Females on the L and K scales. An
examination of Table 1 shows, for example, the following
mean scale scores for the L scale: Mexican American males =
56.80; Mexican American females = 49.80; Anglo males = 48.42;
Anglo females = 49.89. In light of this, it is curious that
the omnibus F test for the culture-sex interaction was not
significant. A univariate ANOVA post-hoc analysis was per-
formed, and on the L scale, the culture-sex interaction dif-
ference was significant (F = 13.481, df = 1/91, p< .001).
The culture-sex interaction was not significant for any of
the other MMPI scales.

Using the t-test, the mean scores difference between Mexican American and Anglo males on the Mf scale was significant (t=2.88, p< .001). The Anglo males scored higher than their Mexican American counterparts, a finding that may be interpreted as the Anglo males in this study tended to be psychologically complex, sensitive, prone to worry about sex problems, and having general aesthetic interests.

The hypothesis that the L scale would be higher for the Mexican American group was supported by the results of this study.

The hypothesis that the Pa scale scores would be higher for the Anglo group was not supported.

The hypothesis that the Mexican American males and Anglo American females would score higher than their counterparts on the Pt, Sc, and Si scales was also not supported by the results of this study.

CHAPTER VI

DISCUSSION

The hypothesis that the L scale would be more ele-
vated for the Mexican American group than for the Anglo
American group, as previously reported, was supported by
this study. It is interesting to note that the hypothesis
was supported with the covariates of SES and age included
and likewise was supported without covariates. It appears
that the inclusion of the two covariates made the results
only slightly more conservative. This may be explained
partially by the fact that the range for socioeconomic
status was narrow because of the nature of the patients seen
by community mental health services. The upper-middle and
upper ranges of the SES community was not represented in
the sample. With respect to the second covariage, age,
while the range was approximately 13 to 55 years, the ma-
jority of the sample was between 21 and 40 years of age.
Or, it may be that age is not a major factor affecting MMPI
profiles, at least within the age range tapped by this
study.

The study found a statistically significant differ-
ence that was not predicted. The Anglo males scored sig-
nificantly higher (t=2.88, $p < .001$) than the Mexican
American males on the Mf (masculinity-femininity) scale.

This has been interpreted as indicating that Anglo males showed a tendency toward psychological complexity, sensitivity, proneness to worry about sex problems, and general aesthetic interests. The mean score for all Mexican American males = 56.27, and the mean score for all Anglo American males = 66.97. The Mf scale was standardized using Minnesota soldiers as the normative group. This was in the 1930's. It is interesting to note that the Mexican American males tended to score more toward the "normal" range, while Anglo American males tended to score in a more elevated direction. That is, it would appear that Mexican American males in 1974-75 are more like the Minnesota normative group than are Anglo American males in 1974-75. It may be that the traditional role expectations of the Mexican American male of today is not unlike the role expectations of the normative group, while that of the Anglo American male has changed from since the 1930's. However, it should be noted that the subjects in this study were psychiatric patients. It is possible that the higher Mf score for the Anglo subjects reflects a greater preoccupation with sexual concerns.

A further finding that was not predicted, that the Mexican American group scored significantly higher than the Anglo group on the K scale, raises an important question regarding the validity of the MMPI with Mexican American subjects. The K-correction was added to the MMPI to give

the clinician a more accurate profile for those patients
who attempt to maintain a facade of adequacy by working to
make a favorable impression upon others, particularly those
who deny to themselves, Pollyanna fashion, that they are
having psychological difficulties. That is, when weighted
percentages of the raw score of K are added to the five
MMPI scales that incorporate the K-correction, it is as-
sumed that the presence of the K-correction is making appro-
priate readjustments so that the clinician may discern the
nature of the patient's difficulty as reflected by the
particular K-corrected scale. The question raised here,
given the difference in the K scores between Anglo and
Mexican American, is whether or not the K-correction is ob-
scuring important differences between the groups. The
post-hoc investigations in this study were inconclusive on
that point. However, it may be noted that a significant
difference was detected on the Pt scale when the K-correction
was omitted and that this difference did not show up on the
K-corrected scales. There are two possible explanations
for this finding. First, it may be that the K-correction
was doing what it was meant to do and adjusting for the
tendency to deny psychological difficulties. The Pt scale
is a measurement of willingness to complain about anxiety.
The higher the score, the higher is the level of expressed
anxiety. A second interpretation may be that the Mexican
American group experiences less anxiety and that the

K-correction obscures that fact. In either case, a cultural difference is implied for Mexican American and Anglo patient populations.

The omnibus F test for the interaction of culture and sex, without the K-correction, and with the SES and age covariates, was not significant (F=1.594, $\underline{df}$=12/80, $\underline{p}$ < .110). Again, technically, the researcher should not proceed to examine culture-sex interaction further. However, without the K-correction, and with the two covariates, the omnibus F test for the main effect of culture was significant, as reported previously. While the CS interaction was not significant, an examination of Table 2 would indicate to the researcher that the significant difference between the culture groups on the Pt scale was attributable to the lower score of the Mexican American male. The mean score on the Pt scale, K-uncorrected, for the Mexican American male was 31.67; Mexican American females = 44.10; Anglo male = 46.52; Anglo female = 47.13.

Likewise, it would appear from an examination of Table 1 that the significant differences found between the two culture groups on the L and K scales were also attributable to the fact that the Mexican American males scored higher than the other culture-sex groups. The researcher again cautions the reader that these culture-sex interactions were not statistically significant, but it may be possible that the small sample size in this study and the resulting lower power of the statistical tests used did not allow

these differences to be statistically significant.

In general, it seems that the scores of the Mexican American males account for differences between culture groups and that the Mexican American females score very similarly to the Anglo group. It may be speculated that one factor involved in producing these differences on the part of the Mexican American male would be the social position of male ethnic minority members. It seems safe to speculate that these subjects would be under stress in having to deal with racism and prejudice directed at their ethnic group. Given that male ethnic group members bear the brunt of job discrimination, underemployment, and related social pressures, yet still must fulfill the traditional role expectations of the breadwinner, it hardly seems surprising that they would experience stress.

That stress was reflected on the Pt scale with the K-correction. The scores of all the culture-sex groups were equally elevated. However, without the K-correction, the mean score of the Mexican American males was 12-15 t-score points lower than the other groups. This indicates that Mexican American males reported less anxiety but that the K-correction brought the Pt score up to that of the other groups. In one study (Schmidt 1948), eleven men with severe psychoneurotic reactions were asked to retake the MMPI as though they were normal, healthy people. Under these instructions, their scores shifted appreciably toward the average level of normals. Schmidt noted that the K

scale was affected by the faking instructions to about the same extent as the scores on the L scale. The way in which these subjects completed the MMPI under faking instructions --their attempts to put themselves into a favorable light psychologically--was most clearly revealed by elevated L and K scores. If the findings reported in Schmidt's study shed light on the elevated L and K scales of the Mexican American males in this investigation, it may be that the Mexican American males tended to try to put themselves in a favorable light psychologically when they completed the MMPI. If this were the case, it is possible that the K-correction adjusted the scores as it was meant to do. However, an equally plausible explanation is that the MMPI is not measuring "personality" of the Mexican American subject because of language or cultural differences, resistance to taking long, impersonal tests in an Anglo institution, or because of all of these factors. These ideas, it must be cautioned, are purely speculative, and further researching of the topic is warranted.

The results of this study were inconclusive regarding the validity of the MMPI for Mexican Americans. Further research is needed to demonstrate whether the MMPI, as a widely administered psychological test instrument, is valid for bi-lingual, bi-cultural Mexican American psychiatric patients.

CHAPTER VII

SUMMARY AND CONCLUSIONS

This study noted two differences on the MMPI scales between the two culture groups. Significant differences were found on the L and K scales of the MMPI. On the interaction of culture and sex, a significant difference was found between Anglo American and Mexican American males on the Mf scale. The Anglo males' scores were more elevated (see Table 1). Without the K-correction, a significant difference between culture groups was found on the Pt scale.

The first hypothesis of this study has been supported. That is, Mexican American subjects scored higher on the L scale than Anglo Americans.

The second hypothesis, that the Anglo American group would score higher than the Mexican American group on the Pa scale, was not supported.

The hypothesis that the Mexican American males and the Anglo American females would score higher than their counterparts on the Pt, Sc, and Si scales of the MMPI was likewise not supported by the results of this study.

The significant difference between culture groups on the K scale raised questions regarding the validity of the MMPI for Mexican American subjects. Weighted percentages of the raw K score for each subject are added to five of the

clinical scales of the MMPI. Because of the difference in the K score between Mexican Americans and Anglo Americans, the question is raised for the clinician whether the K-correction was correcting for fluctuations in each subject's K score and was, therefore, self-correcting, as it was designed to be, or whether the K-correction obscured important differences in personality between Mexican American and Anglo American subjects.

An additional question was raised with regard to the K-correction as seen on the Pt scale. Mexican American males scored lower than the other culture-sex groups when there was no K-correction but similar to the other culture-sex groups when the K-correction was employed. Once again, the clinician is faced with the question of whether or not the K-correction was doing what it was supposed to do. This is an important question for all workers who administer the MMPI to Mexican Americans. Unfortunately, in this study, it was not possible to investigate the unanticipated finding of a significant difference between cultures on the K scale to an extent necessary to reach conclusions regarding the overall validity of the MMPI for Mexican American subjects. Should the results on the clinical scales with K-corrections have shown significant differences, it would have been concluded that the MMPI was invalid for Mexican Americans. The reader should be reminded that the fact that because there were no significant differences between cultures on the clinical scales does not rule out the

possibility that the MMPI is invalid for Mexican Americans. One cannot accept the null hypothesis. However, this study does not support the cultural bias hypothesis either.

   While this study did not reach conclusions regarding the overall validity of the MMPI for Mexican Americans, significant differences between the cultural groups were found. More research was recommended to investigate those differences further. Systematic research should be undertaken to standardize personality assessment instruments using Mexican American normative samples. Regardless of the validity or lack of validity of the Minnesota Multiphasic Personality Inventory for bi-lingual, bi-cultural Mexican Americans, the MMPI is an Anglo instrument not geared to the special needs of the Spanish speaking population of this country.

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APPENDIXES

APPENDIX A

Table 3

Distribution of Sample by Presenting Problem

	Thought	Mood	Relationship	Anti-Social	Somatic
All Mexican American	6%	30%	40%	14%	11%
All Anglos.- American	6%	32%	36%	18%	8%
Mexican American Males	7%	20%	40%	20%	13%
Mexican American Females	5%	35%	40%	10%	10%
Anglo Males	9%	6%	33%	27%	12%
Anglo Females	4%	42%	38%	11%	4%

APPENDIX A

Table 4

Distribution of Sample by Age

	Mean Age
All Mexican American	28.74
All Anglos - American	28.87
Mexican American Males	30.07
Mexican American Females	27.75
Anglo Males	26.12
Anglo Female	30.89

APPENDIX A

Table 5

Distribution of Sample by Socioeconomic Status

	Mean SES
All Mexican American	10.77
All Anglos - American	11.13
Mexican American Males	11.93
Mexican American Females	9.9
Anglo Males	10.88
Anglo Females	11.31

APPENDIX B

Table 6

MANOVA Test of the Main Effect of Culture;
with K-corrections, Two Covariates;
ANOVA F Tests of 12 MMPI Variables

TEST OF CULTURE

TESTS OF SIGNIFICANCE USING WILKS LAMBDA CRITERION AND
CANONICAL CORRELATIONS

TEST OF ROOTS	F	DFHYP	DFERR	P LESS THAN	R
1 THROUGH 1	2.558	12.000	80.000	0.006	0.527

UNIVARIATE F TESTS

VARIABLE	F(1, 91)	MEAN SQ	P LESS THAN
L SCALE	5.044	246.316	0.027
F SCALE	0.453	57.469	0.503
K SCALE	6.092	372.230	0.015
HS SCALE	0.275	49.980	0.601
D SCALE	0.218	44.785	0.642
HY SCALE	0.252	44.633	0.617
PD SCALE	1.329	215.555	0.252
PA SCALE	0.951	131.422	0.332
PT SCALE	1.943	317.352	0.167
SC SCALE	0.029	5.918	0.866
MA SCALE	0.793	103.172	0.376
SI SCALE	1.902	205.293	0.171

APPENDIX B

Table 7

MANOVA Test of the Culture-Sex Interaction,
with K-corrections, Two Covariates;
ANOVA F Tests of 12 MMPI Variables

TEST OF CULTURE-SEX

TESTS OF SIGNIFICANCE USING WILKS LAMBDA CRITERION AND
CANONICAL CORRELATIONS

TEST OF ROOTS	F	DFHYP	DFERR	P LESS THAN	R
1 THROUGH 1,	1.523	12.000	80.000	0.133	0.431

UNIVARIATE F TESTS

VARIABLE	F(1, 91)	MEAN SQ	P LESS THAN
L SCALE	13.481	658.398	0.001
F SCALE	0.135	17.133	0.714
K SCALE	1.234	75.406	0.269
HS SCALE	1.476	268.191	0.227
D SCALE	0.406	83.262	0.526
HY SCALE	2.661	470.645	0.106
PD SCALE	0.059	9.594	0.808
PA SCALE	0.008	1.059	0.930
PT SCALE	0.462	75.547	0.498
SC SCALE	0.296	61.457	0.588
MA SCALE	1.574	204.891	0.213
SI SCALE	0.014	1.531	0.905

APPENDIX B

Table 8

MANOVA Test of the Main Effect of Culture,
with K-corrections, 0 Covariates;
ANOVA F Tests of 12 MMPI Variables

TEST OF CULTURE

TESTS OF SIGNIFICANCE USING WILKS LAMBDA CRITERION AND
CANONICAL CORRELATIONS

TEST OF ROOTS	F	DFHYP	DFERR	P LESS THAN	R
1 THROUGH 1	2.546	12.000	82.000	0.007	0.521

UNIVARIATE F TESTS

VARIABLE	F(1, 93)	MEAN SQ	P LESS THAN
L SCALE	5.406	301.172	0.022
F SCALE	0.935	132.022	0.336
K SCALE	5.081	323.765	0.027
HS SCALE	0.237	45.511	0.628
D SCALE	0.201	43.759	0.655
HY SCALE	0.276	48.249	0.600
PD SCALE	0.839	141.721	0.362
PA SCALE	0.719	99.673	0.399
PT SCALE	1.885	304.188	0.173
SC SCALE	0.088	18.779	0.767
MA SCALE	0.377	62.760	0.541
SI SCALE	0.748	192.846	0.189

APPENDIX B

Table 9

MANOVA Test of the Culture-Sex Interaction;
with K-corrections, 0 Covariates;
ANOVA F Tests of 12 MMPI Variables

TEST OF CULTURE-SEX

TESTS OF SIGNIFICANCE USING WILKS LAMBDA CRITERION AND
CANONICAL CORRELATIONS

TEST OF ROOTS	F	DFHYP	DFERR	P LESS THAN	R
1 THROUGH 1	1.135	12.000	82.000	0.345	0.377

UNIVARIATE F TESTS

VARIABLE	F(1, 93)	MEAN SQ	P LESS THAN
L SCALE	7.805	434.800	0.006
F SCALE	0.007	1.005	0.933
K SCALE	2.578	164.298	0.112
HS SCALE	0.857	164.764	0.357
D SCALE	0.082	17.788	0.776
HY SCALE	2.534	442.802	0.115
PD SCALE	0.000	0.028	0.990
PA SCALE	0.001	0.111	0.578
PT SCALE	0.425	68.650	0.516
SC SCALE	0.319	68.040	0.573
MA SCALE	0.811	134.976	0.370
SI SCALE	0.193	21.263	0.662

APPENDIX B

Table 10

MANOVA Test of the Main Effect of Culture; without K-corrections, two Covariates; ANOVA F Tests of 12 MMPI Variables

TEST OF CULTURE

TESTS OF SIGNIFICANCE USING WILKS LAMBDA CRITERION AND CANONICAL CORRELATIONS

TEST OF ROOTS	F	DFHYP	DFERR	P LESS THAN	R
1 THROUGH 1	3.109	12.000	80.000	0.001	0.564

UNIVARIATE F TESTS

VARIABLE	F(1, 91)	MEAN SQ	P LESS THAN
L SCALE	5.584	283.113	0.018
F SCALE	0.627	81.758	0.431
K SCALE	5.371	336.594	0.023
HS SCALE	0.091	18.555	0.763
D SCALE	0.158	32.320	0.692
HY SCALE	0.254	44.676	0.616
PD SCALE	3.490	601.871	0.065
PA SCALE	0.863	119.680	0.355
PT SCALE	7.348	1730.551	0.008
SC SCALE	0.632	190.801	0.429
MA SCALE	3.383	452.887	0.069
SI SCALE	1.690	183.988	0.197

APPENDIX B

Table 11

MANOVA Test of the Culture-Sex Interaction;
without K-corrections, Two Covariates;
ANOVA F Tests of 12 MMPI Variables

TEST OF CULTURE-SEX

TESTS OF SIGNIFICANCE USING WILKS LAMBDA CRITERION AND
CANONICAL CORRELATIONS

TEST OF ROOTS	F	DFHYP	DFERR	P LESS THAN	
1 THROUGH 1	1.594	12.000	80.000	0.110	0.439

UNIVARIATE F TESTS

VARIABLE	F(1, 91)	MEAN SQ	P LESS THAN
L SCALE	12.748	616.477	0.001
F SCALE	0.025	3.250	0.875
K SCALE	1.696	106.285	0.196
HS SCALE	0.513	104.102	0.476
D SCALE	0.323	66.254	0.571
HY SCALE	2.872	505.344	0.094
PD SCALE	0.013	2.316	0.908
PA SCALE	0.000	0.063	0.983
PT SCALE	2.658	626.098	0.106
SC SCALE	0.622	187.902	0.432
MA SCALE	1.460	195.465	0.230
SI SCALE	0.055	5.957	0.816

APPENDIX B

Table 12

MANOVA Test of the Main Effect of Culture;
without K-corrections, 0 Covariates;
ANOVA F Tests of 12 MMPI Variables

TEST OF CULTURE

TESTS OF SIGNIFICANCE USING WILKS LAMBDA CRITERION AND
CANONICAL CORRELATIONS

TEST OF ROOTS	F	DFHYP	DFERR	P LESS THAN	R
1 THROUGH 1	2.891	12.000	82.000	0.002	0.545

UNIVARIATE F TESTS

VARIABLE	F(1, 93)	MEAN SQ	P LESS THAN
L SCALE	5.406	301.172	0.022
F SCALE	0.935	132.022	0.336
K SCALE	5.081	323.765	0.027
HS SCALE	0.123	26.794	0.727
D SCALE	0.201	43.759	0.655
HY SCALE	0.276	48.249	0.600
PD SCALE	2.784	501.250	0.099
PA SCALE	0.719	99.673	0.399
PT SCALE	6.608	1585.234	0.012
SC SCALE	0.449	137.338	0.505
MA SCALE	1.853	323.449	0.177
SI SCALE	1.748	192.846	0.189

APPENDIX B

Table 13

MANOVA Test of the Culture-Sex Interaction;
without K-corrections, 0 Covariates;
ANOVA F Tests of 12 MMPI Variables

TEST OF CULTURE-SEX

TESTS OF SIGNIFICANCE USING WILKS LAMBDA CRITERION AND
CANONICAL CORRELATIONS

TEST OF ROOTS	F	DFHYP	DFERR	P LESS THAN	R
1 THROUGH 1	1.438	12.000	82.000	0.166	0.417

UNIVARIATE F TESTS

VARIABLE	F(1, 93)	MEAN SQ	P LESS THAN
L SCALE	7.805	434.800	0.006
F SCALE	0.007	1.005	0.933
K SCALE	2.578	164.298	0.112
HS SCALE	0.155	33.737	0.695
D SCALE	0.082	17.788	0.776
HY SCALE	2.534	442.802	0.115
PD SCALE	0.015	2.682	0.903
PA SCALE	0.001	0.111	0.978
PT SCALE	3.550	851.541	0.063
SC SCALE	0.912	278.922	0.342
MA SCALE	0.939	164.004	0.335
SI SCALE	0.193	21.263	0.662

Table 14

Revised Scale for Rating Occupation

Rating Assigned to Occupation	Professionals	Proprietors and Managers	Business Men	Clerks & Kindred Workers,etc.	Manual Workers	Protective & Service Workers	Farmers
1	Lawyers, doctors, dentists,engineers, judges,high-school superintendents, veterinarians, ministers (graduated from divinity school), chemists, etc.,with post-graduate training, architects	Businesses valued at $75,000 and over	Regional and divisional managers of large financial and industrial enterprises	Certified Public Accountants			Gentlemen farmers
2	High school teachers,trained nurses, chiropodists,chiropractors,undertakers,ministers (some training), newspaper editors, librarians (graduate)	Business valued at $20,000 to $75,000	Assistant managers and office and department managers of large businesses, assistants to executives, etc.	Accountants, salesmen of real estate, of insurance, postmasters			Large farm owners, farm owners
3	Social workers, grade school teachers, optometrists, librarians (not graduate), undertaker's asst. ministers (no train.)	Business valued at $5,000 to $20,000	All minor officials of businesses	Auto salesmen, bank clerks and cashiers,postal clerks,secretaries to exec., supervisors of railroad,teleph., etc.,justices of peace	Contractors		

Table 14 (Continued)

Rating Assigned to Occupation	Professionals	Proprietors and Managers	Business Men	Clerks & Kindred Workers, etc.	Manual Workers	Protective & Service Workers	Farmers
4		Business valued at $2,000 to $5,000		Stenographers, bookkeepers, rural mail clerks, railroad ticket agents, sales people in dry goods store, etc.	Factory foremen, electricians (own plumbers (busi- carpenters (ness watchmakers	Dry cleaners butchers, sheriffs, railroad engineers & conductors	
5		Business valued at $500 to $2,00		Dime store clerks, hardware salesmen, beauty operators, telephone oper.	Carpenters,plumb- ers,electricians (apprentice) timekeepers,line- men,tele.or tele. radio rprmen,med- ium skill wrkrs	Barbers,fire- men,butcher apprentice, practical nurse,police- men,seamstress cooks,bartndrs	Tenant Farmer
6		Business valued at less than $500			Moulders,semi- skilled wrkrs, asst.to carpen- ter,etc.	Baggage men, night policemen & watchmen,taxi &truck drivers, gas stn attend. waitresses	Small tenant farmers
7					Heavy labor,mi- grant work,odd- job men,miners	Janitors,scrub women, news- boys	Migrant farm laborers

APPENDIX C

TABULATION OF SES INDEX

The socioeconomic status (SES) Index for each subject was determined by combining the educational, annual income, and occupational values for each subject. The SES Index is the sum total of those three values.

The educational value was determined according to a value assigned to the number of years the subject spent in the school system, or, in the case of a minor, father's educational level.

The income value was determined according to the annual income received by the subject. It should be noted that in the case of a subject being a minor child, the father's income is used to figure the income value for the SES Index.

The occupational value was assigned according to the "Revised Scale for Rating Occupation" (Warner 1960, pp. 140-142). However, since Warner's rating scale assigned a value of 1 (one) to the most desirable occupations and a value of 7 (seven) to the least desirable occupations, in this study, it was necessary to reverse the ratings so that value 1(one) would reflect the least desirable occupations, while value 7 (seven) would reflect the most desirable.

Below are the educational, annual income, and occupational charts used to determine the respective values.

Educational value + annual income value + occupational
value = SES Index. For example, a subject who had completed
the 11th grade, who earned $10,000 annually, and who was a
radio repairman, would have an educational value of 4, an
income value of 4, and an occupational value of 3. The sub-
ject's SES Index would be 4 + 4 + 3 = 11.

Education		Value
0- 3 years	=	1
4- 6 years	=	2
7- 8 years	=	3
9-11 years	=	4
12 years	=	5
13-15 years	=	6
16 years	=	7
17+ years	=	8

Income		Value
$ -$ 2,000	=	1
$ 2,001-$ 5,000	=	2
$ 5,001-$ 9,000	=	3
$ 9,001-$13,000	=	4
$13,001-$18,000	=	5
$18,001-$25,000	=	6
$25,001-$35,000	=	7
$35,001-$50,000	=	8
$50,001+	=	9

Warner Occupation Rating		Value
7	=	1
6	=	2
5	=	3
4	=	4
3	=	5
2	=	6
1	=	7

The SES Index, as originally devised, was based on
the assumption that women assume the social status of their

husbands. While those assumptions may not hold today, in this study, if a woman were married and not working, the SES Index was computed from the husband's income and occupation.

APPENDIX D

MMPI Questionnaire

Date:_____

A. Sex   M   F

B. Age _____

C. CULTURE:

   1. With what ethnic group or culture do you most closely
      identify? (Circle)

      a. Chicano or Mexican/American
      b. White American or Anglo/American
      c. Native American Indian
      d. Black or Afro/American
      e. Asian American
      f. Puerto Rican
      g. Philipino
      h. Other_____

   2. What language (s) did you learn first in your home?
      (Circle)

D. Questions for adults:

   1. What is your highest grade in school? (Circle)

      1 2 3 4 5 6 7 8 9 10 11 12 some college BA grad school.

   2. What is your approximate yearly income? _____

   3. What is your occupation? (Be specific) _____

E. Questions regarding children:

   1. Father's highest grade in school? (Circle)

      1 2 3 4 5 6 7 8 9 10 11 12 some college BA grad school

   2. Father's approximate yearly income? _____

   3. Father's occupation? (Be specific) _____

Patient's Name: _____

NB: SES index is based upon idea that women assume social-
    economic status of spouse. When patient is married female,
    question D should be information on husband.

F, Presenting problem (in behavioral terms)_____

_____