

AN ABSTRACT OF THE THESIS OF

Christine Look for degree of Master of Science

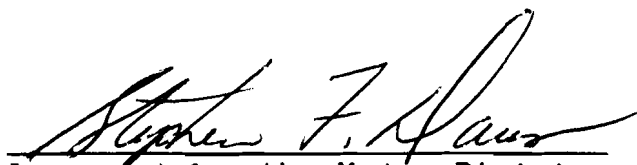
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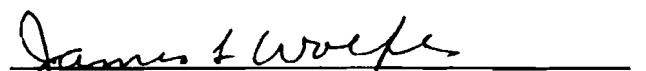
Title: A Comparative Study of MMPI and MMPI-2 Scores
With a College Sample

Abstract approved: Cyrus B. Holmes

The Minnesota Multiphasic Personality Inventory, or MMPI, has been widely used and researched since its publication in 1943. In 1989, a revision of the Minnesota Multiphasic was published, the Minnesota Multiphasic Inventory-2 or MMPI-2. Critics of this newest version of the test voiced concern that the new normed group, validity and clinical scales, as well as the scoring, may be different from the original MMPI. The present study focused on the comparability of the two tests. The sample included 135 college students who were administered both the MMPI and the MMPI-2 clinical and validity scales. After 42 scores were dropped, according to exclusion criteria, 45 men's and 48 women's scores were compared on the two tests. A 2x2x13 ANOVA was run on the data. Results suggest that there are few differences between the MMPI and MMPI-2. While statistically significant differences were found between the genders across scales D, Hy, Pd, Mf, Ma, K, Pa, Pt, and Sc, the size of the differences were not clinically significant, that is to say that the size of differences found would

not likely substantiate different interpretations of personality. On only two scales were scores different enough to warrant clinical significance, scales Mf and Ma. In all other cases the MMPI and MMPI-2 clinical and validity scales were comparable. These results are in agreement with previous studies by the authors of the MMPI-2.


Approved for the Major Division


Approved for the Graduate Council

A Comparative Study of MMPI and MMPI-2 Scores
With a College Sample

A Thesis
Presented to
the Division of Psychology and Special Education
EMPORIA STATE UNIVERSITY

In Partial Fulfillment
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Master of Science

by
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CHAPTER 1

INTRODUCTION

Since its publication in 1943, the Minnesota Multiphasic Personality Inventory, or MMPI, has been a widely used and researched test. Research has examined its reliability and validity, and its utility as a personality inventory for normal, as well as psychiatric populations. In 1989, a revised version of the MMPI was published, the Minnesota Multiphasic Personality Inventory-2, or MMPI-2. This test has made many changes from the original version. There is a new normed sample, new scales and items, as well as a new T-distribution. Research is now focusing on the MMPI-2.

THE HISTORY OF THE MMPI

With the onset of World War I, objective testing got its first opportunity to measure personality on a large scale. There was a need for psychological assessment of military personnel and the need for the development of psychological tests. During this era, the Berneuter Personality Inventory came out, as well as several other objective personality inventories (Greene, 1980). These tests were criticized for their lack of validity and reliability. They were developed on a rational versus an empirical basis (Greene, 1980).

Early attempts at measuring personality by such testing were unsuccessful.

In the 1930's, Hathaway and McKinley began work on a new inventory, the MMPI. The purpose of this inventory was to create a measure of personality that was of a larger scope than inventories of the past and that could aid diagnosis in psychiatric hospitals. The authors wanted items to cover a wider range of personality traits (Graham, 1987; Greene, 1980; Hathaway & McKinley, 1940). Also it was to be in clear and simple language to allow impaired but functional patients to fill it out.

The normative sample for the MMPI was drawn from several different sources: relatives and friends of patients at the University of Minnesota Hospital, patients in general wards of the University Hospital who had physical ailments but no history of psychological illness, Work Projects Administration's skilled workmen on local projects, and psychiatric inpatients. Items for the inventory were taken from psychiatric texts, directions for medication usage, neurological texts, clinical experience and other personality inventories. The finished product, published in 1943, contained 504 True/False items. In years to follow, Hathaway and McKinley included the Mf and Si scales, increasing the number of items to 566.

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There are 10 clinical scales on the MMPI. Scale 1 (Hypochondriasis/Hs) measures one's tendency toward hypochondria. Scale 2 (Depression/D), measures one's tendency toward depression. Scale 3 (Hysteria/Hy), measures tendencies toward reacting to stress and avoiding responsibility by developing physical symptoms. Scale 4 (Psychopathic deviate/Pd), measures tendencies to not incorporate social mores and to engage in asocial behavior. Scale 5 (Masculinity-Femininity/Mf), measures the extent to which men and women abide by traditional sex roles. Scale 6 (Paranoia/Pa), measures the extent to which one is paranoid. Scale 7 (Psychasthenia/Pt), measures psychological turmoil and discomfort. Scale 8 (Schizophrenia/Sc), measures confusion, disorientation, and disorganization that may be indicative of psychosis. Scale 9 (Mania/Ma), measures tendencies toward overactivity and unrealistic self-appraisal. Scale 0 (Social Introversion/SI), measures tendencies toward social introversion (Graham, 1987).

As well as the clinical scales, there are four validity scales: the Lie Scale (L), the Cannot Say Scale (?), the F Scale and the K scale. The Lie Scale detects unsophisticated attempts at rather obvious, conscious deception. The Cannot Say Scale tabulates the number of unanswered items and indicates unusual or

atypical response patterns. The F scale indicates deviant patterns of responding, related to psychosis or "faking bad", an attempt to look more disturbed than one is. The K Scale assesses the person's degree of psychological defensiveness. It is a weighted measure to add to certain of the clinical scales. Content Scales, subgroups of items that help to more specifically identify personality traits, were added in later years by other researchers.

Since its publication, the MMPI has been used with many populations. Though originally designed to identify the more severely psychologically disturbed, it has been used extensively with normal populations. Among these are college students (Butcher, Graham, Dahlstrom & Bowman, 1990; Clark, 1954; Forsyth, 1967; Sopchak, 1952). Research has attempted to discriminate between deviant groups or subgroups within a normal college population. In an attempt to distinguish these groups, researchers have looked at elevations and low scores for profile similarities.

STUDIES OF COLLEGE STUDENT MMPI PROFILES

It has been noted in several studies that college student profiles tend to deviate more from the norms than do other normal populations. Usually, college profiles will include elevations on the Ma and Pd scales (Barger & Hall, 1965; Black, 1953; Forsyth,

1967; Goodstein, 1954; Loper et al., 1968; Murray, Munley, & Gilbert, 1965; Murray, 1963). It was suggested that new norms are necessary for accurate measurement of college students (Goodstein, 1954). Other explanations for the student elevations are that the original normed group was "better than normal," or that college students have a different pattern of responding (Brown, 1948; Butcher et al., 1990; Forsyth, 1967; Goodstein, 1954; Graham & McCord, 1985; Loper et al., 1968). Other profile trends found in college students include the tendency of college males to have elevated Mf scores, indicating less traditional male attitudes toward their sex roles. College women, on the other hand, tend to have low Mf scores; this also indicates less stereotyped views of their sex roles. Elevations on the Hy scales also tend to be seen in college profiles for both men and women (Brown, 1948; Clark, 1954; Sopchak, 1952).

Researchers have identified trends in college samples in looking at both the neurotic and psychotic triads as well. College women score high on Hy and low on D in the neurotic triad (Hs, D & Hy), while college men tend to score notably only on the Hy scale. In the psychotic triad (Pt, Sc & Pa), women are elevated on the Sc scale, while men are elevated on the Pt scale

most often. While both men and women score above 70 on their profiles occasionally, men's elevations on scales Pd, Mf, Pt, and Ma, Women's elevations on Ma, men are elevated at or above 70 more often than college women (Sopchak, 1952). Research has been mixed on whether moderate elevations in college students should be interpreted in a positive or negative light. It has been suggested that elevations in a bright population could indicate positive characteristics (Graham & McCord, 1985). For example, while the Pt scale is thought to measure organization, among other things, extreme scores on the Pt scale could indicate compulsiveness- more moderate scores, methodical thinking. Contrary research contends that even in a bright population moderate elevations tend to be negative character indicators (Graham & McCord, 1985).

CRITICISMS OF THE MMPI

While the MMPI has been more successful than previous objective personality measures, it has been criticized on several grounds. One criticism, which has been mentioned already, is that the normative sample of the 1940's is now outdated. Many researchers believe (Butcher et al., 1990; Forsyth, 1967; Loper et al., 1968) that accurate comparisons of this normed group with contemporary populations is not possible.

The level of education, social and racial change, and sex role perceptions, as well as the population distribution of today are believed to create difficulty in using norms from the 1940's. The standard deviation, a measure of the deviation of a score from the mean, in this case a normed score, for college students is between 1 and 1.5 from the normed sample. This has been explained by some researchers as a result of the disparity between the normed group and contemporary college students (Butcher, 1990; Forsyth, 1967; Hathaway, McKinley & Butcher, 1989). Another difference in the normative sample from more contemporary subjects is that of item completion. Hathaway and McKinley gave subjects the option of leaving items blank where in more recent years, subjects have been instructed to complete all items (Butcher et al., 1990). While the normative sample is largely criticized, there are some researchers who have found the normed group works for contemporary subjects. They have comparability on the Mf scale and with women's profiles (Black, 1953; Todd & Gynther, 1988).

Another criticism of the MMPI is Scale 5, the Mf scale. Some research contends there is little consistency in the meaning of scale 5. In one study, only 30% of the variance was accounted for when mapping

the structure of the scale (Wong, 1984). Originally the scale was designed to detect homosexual males during the time when homosexuality was considered an illness. Early research on this scale showed little success discriminating homosexuals from heterosexuals because homosexuals were too heterogeneous a population to easily categorize (Wong, 1984). Research produced high numbers of false positives and false negatives. Later the scale was examined to see if items could detect lesbian females, but again accuracy was poor. It has been suggested that this scale was poor from the start and outmoded today, as homosexuality is no longer considered an illness and sex roles of men and women have changed so much since the 1940's and 1950's (Wong, 1984).

Criticism extended to the use of repeated items. There was confusion as to which appearance of the item should be scored. The publishers scored the second appearance of the items, while Dahlstrom, Welsh & Dahlstrom (1972) recommended scoring the first appearance. Many people taking the MMPI incorrectly assumed that the repeated items were there to trick them in some way. This created oppositional reactions to the test itself (Butcher, Graham, Williams & Ben-Porath, 1990). Other criticisms of the MMPI include those of the MMPI's validity scales, L, F, K,

and ?. In one study of the validity scales, the determination of faking on MMPI profiles was done after testing was completed, as opposed to many studies where testees were requested to "fake good" or "fake bad." The results of this experiment argue the validity scales do not differentiate effectively between subjects who attempt to fake responses and those who do not. These results did not confirm previous data supporting the validity scales' effectiveness (McAnulty, Rappaport & McAnulty, 1985). In fact, Fekken & Holden (1987) conducted a comparative study of the relationship of the MMPI validity scales and a second validity measure, within-occasion person validity indices. It was found that the MMPI scales were more reliable than the second measure.

These research results reflected that the MMPI showed reliable responding and that reliability of the MMPI profile could be predicted (Fekken & Holden, 1987). Nakamura (1960), studied the discriminatory ability of the K scale with three groups: a stressed test group, a non-stressed test group, and a control group. Results supported the discriminative ability of K.

Another criticism of the MMPI, is that it has some difficulty in communicating important information. It has been suggested that the confusion of item meaning

may be related to content validity and homogeneity of items (Butcher et al., 1990). When something has content validity, its content covers a representative sample of the behavior, trait, or area to be measured. An example would be an item on the Mania scale, the mania scale; it must actually measure mania characteristics. Some items on scale 0, the social Introversion scale, were noted as being useless because they did not clearly communicate relevant information about Si characteristics.

MMPI-2

Criticisms of the MMPI led to a revised version, the MMPI-2. To correct for the norming difficulties, the restandardization committee, appointed by the University of Minnesota, restandardized the test using the 1980 census population factors and a sample four times the size of the original sample. Factors such as age, gender, minority status, social class, education and location throughout the United States were matched with census information. Outdated language, ambiguous wording, and sexist allusions were eliminated. Some items were excluded altogether. Overlapping items, ones that belong to more than one scale that were criticized as weakening the validity measures were removed where possible.

Three validity scales were added as well: F Back (FB), Variable Response Inconsistency scale (VRIN), and True Response Inconsistency scale (TRIN). The FB scale uses the same cut off scores as the standard F and makes inferences about the validity of the second half of the test. VRIN assists in the understanding of a high F obtained by assessing randomness of responding and "faking bad." TRIN helps assess the tendency of subjects to answer all true or all false, indiscriminately. The authors believe that the revision efforts have made the MMPI-2 more relevant to contemporary use (Hathaway, McKinley & Butcher, 1989). Further additions to the new MMPI are new content scales. The new scales include items of current psychological interest, such as eating disorders, Type A personality, and marital discord. While there have been many content and organizational changes to the MMPI-2, there have also been statistical changes.

In the original MMPI, a linear T distribution was used to assess profile information. A linear T distribution is defined as taking raw scores and converting them to fit a distribution with a mean of 50 and score deviations are measured in units of 10. The derived numbers are called T scores. This allows a comparison of scores with the normative sample. A criticism of the linear T by MMPI-2 authors is that

direct comparison of T score elevations on different scales is not possible. That is to say that a raw score of 50, for example, on two different scales does not necessarily translate into the same elevation. Raw scores are not normally or equally distributed with a linear T score (Butcher, 1990). Authors of the MMPI-2 used a uniform T instead. The uniform T is derived by adjusting the scale distribution to align with the raw score composite distribution across the eight basic clinical scales. These uniform T scores are percentile equivalent across scales, meaning a score of 50 on any of the eight scales will beget the same percentage. A uniform T is not derived for scales 5 or 0 because these scales differ in their distribution and are not comparable measures of psychopathology when compared with the other scales.

CRITICISMS OF THE MMPI-2

Recent criticism of the MMPI-2 states that among clinicians there is scepticism over whether the claimed improvements on the MMPI are actually improvements. Adler (1990) noted concerns that the new normative sample is not normal. It has a disproportionately large number of professional and well educated subjects, as compared with the census. Also, there is concern that there was not enough research before the MMPI-2 was published and that the research that has

been amassed on the MMPI will not be applicable to the MMPI-2. Lastly, it has been stated that the exclusionary rule used with the normative sample was too stringent; thus more people were excluded on the MMPI-2 than on the MMPI original form. The upshot of this criticism was that more research needs to be done before the MMPI-2 is used in clinical settings (Adler, 1990).

COMMON FACTORS BETWEEN THE MMPI AND THE MMPI-2

Some authors report that despite the large alterations from the original MMPI version, certain aspects of the original test were preserved, such as the validity and clinical scales, separate norms for men and women with and without the K correction, and hand score keys (Hathaway et al., 1989). One report stated that, while the restandardization committee lowered the criterion for elevated T scores, from a T score of 70 to one of 65 when using the uniform T , this modification would not alter the interpretation of a subject's profile across test forms, (Ben-Porath & Butcher, 1989). Further, they claim that relative consistency of MMPI scores between the original MMPI and the MMPI-2 will allow for the use of previous empirical research in interpreting scores based on the new norms (Butcher et al., 1990). They are saying that the previously

gathered information, such as scores on different populations should still apply with the MMPI-2. In a recent study by Butcher et al. (1990), comparisons were done between college students and the normed sample of the MMPI-2. Results of the study contend the MMPI-2 norms appear to be appropriate for college populations. The question still arises: can we expect to obtain the same profiles from college students with the MMPI-2 that we did with the MMPI?

Ben-Porath and Butcher (1989), attempted to answer this question. They ran a comparative study of MMPI and MMPI-AX form, a 704 item form developed for the MMPI restandardization project. They chose a college population of undergraduates that were divided into two groups, one group that took the MMPI twice and the second group that took the MMPI and then the MMPI-2. In their analysis of their data, they looked at specific profile characteristics, like the percentage of high points and the number of elevated scores on the profiles of both groups. Ben-Porath and Butcher stated that the differences found in the profiles of the group that took the MMPI and then the MMPI-2 were no larger than the differences found in the MMPI only group, with one exception. On scale F women did score significantly differently in the two groups. The Ben-Porath and Butcher (1989) experiment used the AX

form of the MMPI. Subjects filled out 154 experimental items not on the MMPI-2 commercial form. Though these were not interpreted, the effect of AX versus the commercial form is unknown. A study using both commercial forms of the MMPI and MMPI-2 is still necessary to address whether MMPI and MMPI-2 clinical scales are comparable.

The restandardization committee made several claims about the comparability of the MMPI and the MMPI-2. They reported that the MMPI-2 is different in its normed sample and T distribution, has added and revised or eliminated several items and added new validity scales. Yet with all these changes they claim that in all essential ways the validity and clinical scales are comparable and that one could expect to get comparable scores from both tests. However, questions exist as to the validity of these claims and the lack of substantive research. Ben-Porath and Butcher (1989) have attempted to verify the claims that the MMPI and MMPI-2 are comparable using the Experimental version AX of the MMPI-2 and the commercial version of the MMPI. Their results support their claims. It remains to be answered whether these results will be repeated using the MMPI and MMPI-2 commercial forms.

SIGNIFICANCE OF THE PRESENT STUDY

The significance of this study is that before we can accept that results from the MMPI can be applied to the MMPI-2, as the authors claim, we must establish that the two clinical scales are comparable. If they are not, then research must begin fresh on the MMPI-2 before it can be used in applied settings for psychological assessment of clients. Results from this study will add to the body of literature on the MMPI/MMPI-2 comparability in psychology, and begin the verification process necessary to establish the MMPI-2 as a viable, objective personality inventory.

CHAPTER 2

METHOD

Sample

The sample for this study was 45 male and 48 female undergraduates between the ages of 18 and 38. These students were enrolled in Introduction to Psychology at Emporia State University. Out of the original 135 participants, 16 men were excluded from the study, and 26 women were excluded. Of the 16 men excluded, 3 did not return for the second test session, 1 did not follow directions, and 12 had invalid profiles. Of the 26 women excluded, 4 did not return for the second test session, 2 had invalid profiles and 20 were dropped because the statistical package could not handle the subject pool size. Exclusion of these subjects was done by consulting a random numbers table. Numbers were randomly chosen until 20 tests corresponded with the chosen numbers. These tests were excluded from the study.

Procedure

A sign-up sheet was passed around all Introduction To Psychology classes in the fall term of 1990 at Emporia State University. A brief presentation of the experiment by the researcher was carried out at this time. The presentation included the following: an explanation of my status as a graduate student, my

intention to study the two personality inventories to see how they relate, my request for their assistance as volunteers, the time expenditure required (between one and two hours), their compensation of extra credit and lastly that all lists and names are to be kept confidential. Informed consent forms (Appendix A) were handed out and subjects who completed and handed them back were potential subjects in the study. A sample of 135 subjects was obtained in this manner. Once sign up sheets were collected, a code number between 001 and 135 was assigned to students' names. A random numbers chart was used to obtain 67 numbers, half of the total number of subjects. The subjects whose coded number corresponded with a random number obtained were administered the MMPI first. The remaining subjects took the MMPI-2 first. The first test was given in a classroom of the university at a mutually agreed upon time. In the second test session subjects were given the test they had not yet taken. The subjects sat in rows and had unlimited time to complete the test.

The second test was administered approximately one week after the first test. All testing took place at the university, in a classroom arranged with chairs in rows facing toward the front of the room.

Once the data were compiled, raw scores were obtained by hand scoring templates, published by the

test company. These scores were changed to standard scores by referring to the MMPI and MMPI-2 manuals. The experimental independent variables were the within subjects factors of the MMPI test form used, and scales, and the between subjects factor of gender. The dependent variable was the score obtained on each scale of each test. All statistical analyses were done on the computer with the ANOVA II statistical package.

Statistical Design

An ANOVA was run on the data at a .05 alpha level to protect against Type I error (Keppel, 1982). The data were divided by gender (men or women), the MMPI test form (MMPI and MMPI-2) and by the thirteen scales. Thus, a 2x2x13 ANOVA was run. The ANOVA assumptions were met. The treatment population was normally distributed. In the event a subject was excluded from the study, both tests were dropped from the data. Where significance was obtained, the Fisher was used to determine the least significant difference.

CHAPTER 3

Results

The MMPI and MMPI-2 clinical and validity scales were given to 45 men and 48 women. The resulting means, in standard T scores, and standard deviations from the data are presented in Table 1. Analysis was done by a 2x2x13 ANOVA with mixed factors.

Table 1

Means and Standard Deviations of Men and Women's Scale Scores on the MMPI and MMPI-2

Scale	MMPI				MMPI-2			
	Male		Female		Male		Female	
M	SD	M	SD	M	SD	M	SD	
L	45.31	5.51	46.02	6.90	45.29	7.51	48.98	10.39
F	60.71	9.07	58.46	9.44	58.16	11.46	55.98	14.03
K	47.96	7.43	49.38	7.91	52.24	7.48	44.23	9.73
Hs	49.67	10.26	50.35	12.05	49.24	10.24	50.50	11.29
D	57.00	11.31	54.77	8.86	49.18	10.76	50.67	9.35
Hy	54.31	8.52	55.10	9.57	45.78	8.14	49.46	10.40
Pd	58.60	10.97	57.29	12.55	49.27	8.84	47.92	10.53
Mf	59.91	8.87	50.73	9.59	45.84	9.25	54.90	10.99
Pa	55.96	10.55	56.15	11.39	49.58	10.70	48.17	11.10
Pt	64.29	10.09	57.08	11.57	56.62	12.10	56.90	10.37
Sc	66.73	14.62	59.10	14.07	56.60	11.82	54.52	12.04
Ma	70.91	10.54	61.90	11.65	62.78	11.02	58.71	13.77
SI	53.22	9.05	52.63	8.94	51.67	10.24	50.00	8.18

ANOVA results are shown in Table 2. For purposes of clarification, GENDER represents men and women, MMPI represents the form, MMPI or MMPI-2, and SCALES represents the 13 clinical and validity scales of the MMPI and MMPI-2.

Table 2

ANOVA Source Table of Results From 2x2x13 Analysis

	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>
BETWEEN BLOCKS/SUBJECTS				
GENDER(G)	648.667	1	648.667	1.103
ERROR	53515.906	91	588.087	
WITHIN BLOCKS/SUBJECTS				
MMPI(M)	12944.046	1	12944.046	109.358**
G x M	1752.431	1	1752.431	14.805**
ERROR	10771.084	91	118.364	
SCALES(S)	58518.290	12	4876.524	34.158**
G x S	4021.061	12	335.088	2.347*
ERROR	155897.511	1092	142.763	
M x S	5325.911	12	443.826	13.063**
G x M X S	3810.847	12	317.571	9.347**
ERROR	37100.278	1092	33.975	

Note. The (*) means probability to the .005 level. The (**) means probability to the .001 level

SCALES and MMPI were significant main effects. Significant interactions were GENDER x MMPI, GENDER X

SCALES, MMPI X SCALES, and GENDER X MMPI X SCALES.

Significance was found at the .001 probability level for all significant factors except GENDER x SCALES, which was at the .005 probability.

The SCALES main effect was unnecessary to analyze because differences would be expected to exist on different scales. The clinical and validity scales measure different personality and validity factors. The MMPI main effect was not analyzed because an overall mean of all scale scores for the MMPI and MMPI-2 would be meaningless. Scales must be looked at individually to assess comparability between test forms. The GENDER X MMPI interaction was also not analyzed. Looking at the total score of men or the total score of women on each test would not provide specific enough information on how males and females compare on the scales of each test. To gauge the comparability of the tests it was necessary to look at interactions with SCALES, MMPI X SCALES, GENDER X SCALES and GENDER X MMPI X SCALES. Table 3 shows the results of the MMPI X SCALES analysis. The Fisher Least Significant Difference (LSD) was set at 1.68.

Table 3

Results of the Fisher LSD Test for the MMPI X SCALESInteraction

Scales	Differences				
L	1.47	Hy	7.09*	Sc	7.36*
F	2.52*	Pd	9.35*	Ma	5.66*
K	5.43*	Mf	4.95*	Si	6.09*
Hs	1.14	Pa	7.18*		
D	5.56*	Pt	3.93*		

Note. The (*) indicates significant differences between the forms.

Significant differences were found on scales F, D, Hy, Pd, Mf, Ma, K, Pa, Pt, Sc, and Si. Significant differences were not found on scales L and Hs.

Table 4 shows results of the GENDER x SCALES analysis. A Fisher LSD was set at 3.43.

Table 4

Results of Fisher LSD Test for the GENDER X SCALESInteraction

Scales	Differences				
L	2.20	Hy	2.23	Sc	4.86*
F	2.22	Pd	1.33	Ma	6.54*
K	1.71	Mf	0.06	Si	1.13
Hs	0.97	Pa	0.61		
D	0.37	Pt	3.47*		

Note. The (*) indicates significant differences between the genders.

Significance was found on scales Pt, Sc and Ma. All other comparisons were not significant.

Table 5 shows results of the GENDER X MMPI X SCALES analysis. A Fisher LSD was set at 2.41 for comparisons between men, 2.33 for comparisons between women, and 2.37 for comparisons between men and women. For purposes of clarity, the MMPI will be referred to as M1, the MMPI-2 as M2, women as F and men as M. Scales will be referred to by their usual abbreviations and will be presented in scale order.

Table 5

Results of the Fisher LSD Test for the GENDER X MMPI XSCALES Interaction

Scales

L	FM2 > all others	Pa	MM1 > MM2 & FM2
F	MM1 > MM2 & FM2		FM1 > MM2 & FM2
	FM1 > FM2	Pt	MM1 > all others
K	MM1 > MM2 & FM2	Sc	MM1 > all others
	FM1 > MM2 & FM2		FM1 > MM2 & FM2
Hs	No significance	Ma	MM1 > all others
D	MM1 > all others		FM1 > FM2
	FM1 > MM2 & FM2		MM2 > FM2
Hy	MM1 > MM2 & FM2	Si	MM1 > FM2
	FM1 > MM2 & FM2		FM1 > FM2
Pd	MM1 > MM2 & FM2		
	FM1 > MM2 & FM2		
Mf	MM1 > all others		
	FM1 > MM2		
	FM2 > MM2		

Note. The sign ">" indicates that one score is statistically significantly greater than another.

On scale Hs there were no significant differences between genders and forms. On L, only FM2 was significantly different from the other scores. On Pt, only MM1 was significantly different from the other scores. The other scales are clearly explained above.

Figure 1 shows the mean profile of the standard scores for both gender and form.

Figure 1.

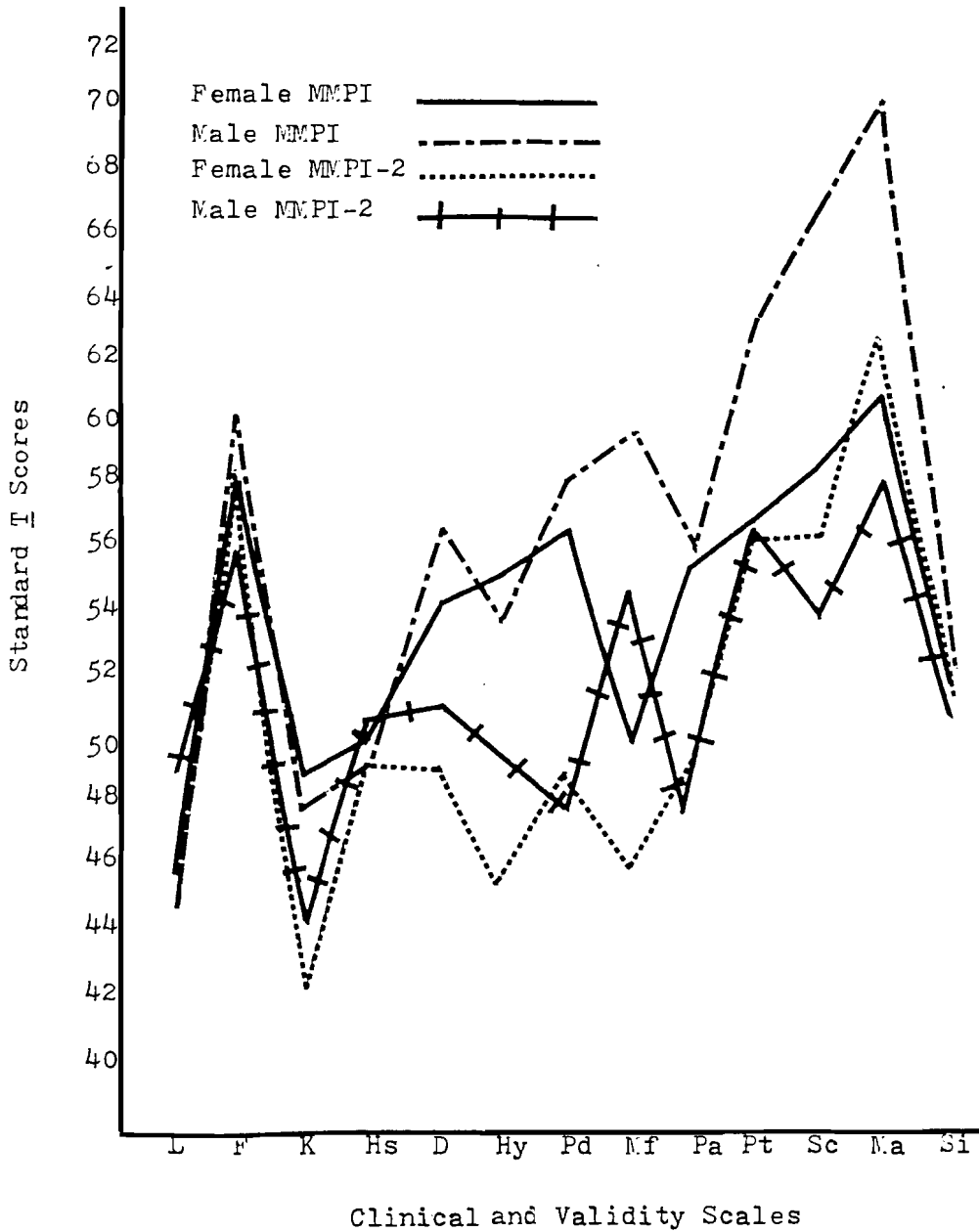


Figure 1. Mean Profiles for Sex and Forms

As these data show, in several instances statistical significance was achieved. Whether or not these results are of any clinical significance will be discussed in Chapter 4.

CHAPTER 4

DISCUSSION

As shown in Table 3, the MMPI X SCALES interaction was found significant on 11 of 13 scales. This means that statistically significant differences were found between the MMPI and MMPI-2 across most scales. The question remains concerning how clinically significant these differences are. Graham (1987) reported that differences of no less than 10 points could be interpreted differently, and thereby be found to have clinically significant differences. Therefore, from Graham's perspective, no differences across forms were found clinically significant in this study.

In looking at the GENDER x SCALE interaction, in Table 4, there were statistically significant differences on scales Pt, Sc, and Ma. That is to say that statistically men and women differed significantly on these scales. In terms of clinical significance however, no scale met the 10 point difference criteria.

In the GENDER X MMPI X SCALE interaction of Table 5, there were statistically significant differences between men across forms on scales F, K, D, Hy, Pd, Mf, Pa, Pt, Sc, and Ma. There were significant differences between women across forms on scales L, F, K, D, Hy, Pd, Mf, Pa, Sc, and Sl. Lastly, there were significant differences between men and women across forms on

scales L, F, K, D, Hy, Pd, Mf, Pa, Sc, Ma, and Si. Hs was the only exception. Again, it is important to consider the 10 point range between scores. When the range of scores between forms were compared, only two scales were clinically significant, Mf and Ma. Men scored a 14.07 difference on the Mf across forms for men on the MMPI and women on the MMPI-2 scored a 12.2 difference on the Ma scale across forms. These scattered cases were the only ones to show clinically significant differences on the GENDER X MMPI X SCALES interaction. It is advisable that caution be exercised when interpreting scales Mf and Ma on the MMPI-2, until new research appears on scale comparisons.

Figure 1 showed the mean profile of standard scores for both genders and forms. While visually there appear to be large differences in profiles and between scores on various scales. These differences are not clinically significant, with the exception of the Mf for men and the Ma for men on MMPI and women on MMPI-2.

The findings in this study are in agreement with previous studies (Ben-Porath & Butcher, 1989; Butcher, 1990; Butcher et al., 1990), in which authors of the MMPI-2 reported that the MMPI and MMPI-2 were comparable, and appropriate to use with a college population. It is recommended that replication of this

study be done to establish the generalizability of these results to other populations.

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APPENDICES

APPENDIX A

CONSENT FORM

Please carefully read the following paragraph and sign below if you are in agreement.

The purpose of the present study is to assess the activities, attitudes, and perceptions of Emporia State University students. If you choose to participate, you will be asked to fill out two personality inventories which will require between one and two hours in total. All identifying information will be used only to match up the two tests and will be removed from the tests after all data have been collected. Your answers will remain confidential. If for any reason during the session you feel uncomfortable, you may discontinue participation.

I (print your name) _____
have read and understand the preceding information and agree to participate in this study.

Signature of Participant/ Date

APPENDIX B

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