

RUNNING HEAD: A review of the MMPI

A Review of the MMPI

Student Name

College of St. Joseph in Vermont

Submitted in Partial Completion of the Core Requirements for

GPS 507 Psychological Appraisal

June 9, 2009

Abstract

One of the most widely used objective tests is the Minnesota Multiphasic Personality Inventory (MMPI), published in 1942 with the goal of defining a "normal" personality and detecting specific deviances. The test produces profiles that can predict class inclusion for such psychological disorders as schizophrenia, sociopathy, depression, and hysteria. This paper will discuss the MMPI, MMPI-2 and MMPI-A. Discussion will include the purpose, the construct, the reliability and validity, scaling and limitations of the MMPI tests.

The Minnesota Multiphasic Personality Inventory (MMPI) was developed in the late 1930's by psychologist Starke R. Hathaway and psychiatrist J.C. McKinley at the University of Minnesota. It is one of the most frequently used clinical testing instruments used today, and is one of the most researched psychological tests in existence (Butcher et al, 1989).

In the years after the test was first published, clinicians and researchers began to question the accuracy of the MMPI. Critics pointed out that the original sample group was inadequate. Others argued that the results indicated possible test bias, while others felt the test contained sexist and racist questions. In response, the MMPI underwent a revision in the late 1980's. Many of the original questions were removed or reworded and new questions were added. In addition, new validity scales were incorporated in the revised test (Butcher et al, 1989).

The revised test was released in 1989 as the MMPI-2. While the test was revised again in 2001, the MMPI-2 is still in use today. In 1992, a version of the test designed for adolescents, the MMPI-A was introduced (Butcher et al, 1992).

The original MMPI was developed using an empirical keying approach. This means that the clinical scales were derived by selecting items that were based on patients known to have been diagnosed with certain pathologies. The difference between this and other approaches used at the time was that this approach was not based on any particular theory. This enabled the test to focus on aspects of human psychopathology that were recognizable and meaningful regardless of changes taking place in clinical theories (Graham, J.R., 1987).

This paper will discuss the MMPI, MMPI-2 and MMPI-A. Discussion will include the purpose of the test, the construct, the reliability and validity, scaling and limitations

of the MMPI tests. Also discussed will be the appropriate use of the MMPI and finally, an overall evaluation of it.

Purpose of the MMPI

The MMPI was designed to provide scores on all the important phases of personality. It assesses characteristics that reveal an individual's personal and social maladjustment. The MMPI-2 was developed to give a more modern assessment than the original version. The original version used language that was outdated and was used to assess characteristics that it did not have questions for. The MMPI-2 was developed as an aid in determining mental health status and the need for hospitalization (Butcher & Williams, 1999).

The results of the MMPI-2 allow the test administrator to make inferences about the client's typical behaviors and way of thinking. Results of the test enable the examiner to ascertain the severity of impairment, outlook on life, methods of problem solving, typical mood states, likely diagnoses, and possible problems in treatment (Graham, 2000).

The MMPI is used in a variety of settings. Often it is used as part of inpatient psychiatric assessment, differential diagnosis, and outpatient evaluations. The MMPI-2 has also been used as a personality appraisal for firefighters, police officers and pilots (Butcher, 1994; Kornfeld, 1995). Interestingly, the MMPI-2 has also been used to assess personality in other cultures and the results are compared to our own culture. In addition, the instrument is often used by expert witnesses in forensic settings as part of an evaluation of a defendant's mental health, particularly in criminal cases (Pearson Education, 2008).

The MMPI-A was designed for similar purposes however, it was designed specifically

for use with adolescents aged 14 to 18 with at least a sixth grade reading level. This test contains scales specific to adolescents, and other unique features intended to make the instrument specifically appropriate for today's youth.

The Construct Being Measured

Hathaway said the "real impetus" for developing the test came from reports of insulin shock treatments with schizophrenics. Reports of success of the insulin treatment ranged from zero to 100%. Evidently, the hospitals using this treatment did not have an effective way to pick patients who might benefit from the treatment. Hathaway saw a need for an objective diagnostic test that would produce reliable results and allow hospitals to decide who would benefit from particular treatments (Mednick, Higgins, & Kirschenbaum, 1975).

Hathaway and McKinley wanted to design a paper and pencil test that would assess a number of major patterns of personality and emotional disorders for the purpose of distinguishing between "normal" individuals and those with a psychological disorder. This would allow psychologists to assign a diagnosis to an individual who demonstrates particular signs of a mental illness (McIntire & Miller, 2006).

Hathaway and McKinley gathered a large number of questions from textbooks, personality inventories, and clinicians. The list of about 1,000 items was carefully written based on substantial clinical experience. They administered the questions to patients in hospitals and clinics in Minnesota with an existing mental health diagnosis and to healthy visitors and relatives of the patients. Hathaway and McKinley then analyzed the responses and grouped

them by diagnostic category. Criteria for selecting the final MMPI items was based on the notion that a particular item on a personality test achieves its value from its role as a predictor of a certain behavior (Hersen et al, 2003). They put in the MMPI only those questions that were answered differently by a diagnostic group, for example, schizophrenic patients (McIntire & Miller, 2006).

The original clinical scales were designed to measure common diagnoses of the era. While the descriptions of each type were originally used in assessment, the current practice is to use the numbers only (Karp & Karp, 1997-2000).

Number	Abbreviation	Title	Description
1	Hs	Hypochondriasis	Concern with bodily symptoms
2	D	Depression	Depressive Symptoms
3	Hy	Hysteria	Awareness of problems and vulnerabilities
4	Pd	Psychopathic Deviate	Conflict, struggle, anger, respect for society's rules
5	MF	Masculinity/Femininity	Stereotypical masculine or feminine interests/behaviors
6	Pa	Paranoia	Level of trust, suspiciousness, sensitivity
7	Pt	Psychasthenia	Worry, Anxiety, tension, doubts, obsessiveness
8	Sc	Schizophrenia	Odd thinking and social alienation
9	Ma	Hypomania	Level of excitability
0	Si	Social Introversion	People orientation

Hathaway and McKinley also added three validity scales to detect those respondents who answered questions dishonestly. When the MMPI was revised, three more scales were added.

Theories and Assumptions of the Authors

Hathaway felt that the early statistics on treatment outcomes, promised everything from 100% cure to no effect and no value. He believed that the variance in effectiveness as reported from hospital to hospital depended partly upon the unreliability of the validity criterion. He thought that if there were some way in which he could pick experimental groups of patients using objective methods, then outcome tests for treatment efficacy would be more uniform and meaningful. At the time, there were no objective personality instruments that were adaptable to such a design. Thinking about the needs, he got the idea of an empirically developed inventory that could be extended indefinitely by development of new scales (Mednick, Higgins, & Kirschenbaum, 1975).

Hathaway and McKinley believed that the MMPI would provide a clear diagnosis by an elevated score on a single scale. However, when the test became widely used, it was discovered that individuals often had elevated scores on more than one scale. As a result, in 1947, Hathaway published a coding system that helped test users make diagnoses based on various combinations of test scores (McIntire & Miller, 2006).

Test Construction and Norm Selection

Hathaway and McKinley gathered about 1,000 questions from textbooks, personal inventories and clinicians. They administered the questions to patients in hospitals and clinics in Minnesota with an existing mental health diagnosis and to healthy visitors and relatives of the patients. The relatives and visitors who did not have an existing mental health diagnosis were considered the norm group. Hathaway and McKinley felt that the non-patients

were comparable to the adult population of Minnesota in the 1930s: between the ages of 16 and 65, mainly married, living in small rural areas, and with an eighth grade education level.

Hathaway and McKinley then analyzed the responses and grouped them by diagnostic category.

Criteria for selecting the final MMPI items was based on the notion that a particular item on a personality test achieves its value from its role as a predictor of a certain behavior (Hersen et al, 2003). They put in the MMPI only those questions that were answered differently by a diagnostic group, for example, schizophrenic patients (McIntire & Miller, 2006).

In the postwar period, and with the passage of the GI Bill, the average educational level of the U.S. population began to rise sharply. The original Minnesota norms had averaged an eighth-grade level of education; by 1970, the average years of education had increased to 12 and college enrollment levels were growing. The population was also becoming more ethnically and culturally diverse, and more women were entering the labor force. With the passage of time, the language of some of the items had become dated and was at risk of becoming obscure, such as references to “sleeping powders,” “streetcars,” and “drop-the-handkerchief.” Other items contained grammatical errors that needed correction, and still others contained references to cultural activities that had become less familiar. With the expansion of the MMPI beyond the hospital and clinic to applications in employment screening and the forensic arena came increasing complaints about sexist wording and items dealing with religious matters, eliminatory functioning, and sexual adjustment that were deemed to be intrusive or offensive. A number of areas of item content were thought to be underrepresented in an instrument that had already begun to be more frequently applied to the assessment of substance abuse, suicide risk, and treatment planning. During the 1970s it became increasingly

clear that the time for restandardizing the MMPI had come. The copyright holder, the University of Minnesota Press, appointed a committee to undertake this work.

In preparation for the restandardization, the committee developed a new form of the MMPI. The MMPI-AX, contained all of the original MMPI items, less 16 that repeated items on the original MMPI, plus 154 newly written items. Subjects between the ages of 18 and 84 were recruited by newspaper ads and solicited using directories and mailing lists from Minnesota, North Carolina, Ohio, Pennsylvania, Virginia, California, and Washington. Subsamples of Native Americans from a federal reservation in Washington state and military personnel on active duty from several US bases completed the restandardization sample. Subjects were paid and were required to provide basic demographic data on sex, age, ethnicity, attained education, marital status, and income, and to complete a Recent Life Events Survey in addition to completing the MMPI-AX.

The restandardization sample was made to conform as closely as possible to 1980 census data, excluding geographic distribution. In terms of marital status, income distribution, and ethnic diversity this goal was largely met, but with some underrepresentation of Hispanics and Asian Americans. There was also some underrepresentation of subjects at the extremes of the age distribution, particularly for younger men and older women. The restandardization of the MMPI took almost a decade, ending when the MMPI-2 was published (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989).

In developing the MMPI-A, published in 1992 (Butcher, Williams, Graham, Archer, Tellegen, Ben-Porath, & Kaemmer, 1992), the MMPI Revision Committee was aware

that the MMPI test item pool needed considerable modification in order to make the instrument more effective with adolescents. For example, the original MMPI items had been written from an adult perspective and had usually been administered without modification to adolescents. In addition, the MMPI scales had been developed using adult samples and a conceptualization of psychological disorders that was oriented toward adult psychopathology. Moreover, there were no adolescent subjects included in the norms for the MMPI and interpretation of the scales for adolescents was based, in part, on research with adults. It is interesting that despite these limitations, the MMPI came to be widely used with adolescents (Hathaway & Monachesi, 1963; Hathaway, Reynolds, & Monachesi, 1969).

To revise the MMPI for use with adolescents, a large representative national sample of adolescents was obtained using an experimental form for adolescents. This form was made up of the original MMPI items, some new items contained on the MMPI-2, and many new items that focus on adolescent issues and behaviors such as attitudes about school and parents, peer group influence, and eating problems. These items were dispersed throughout the booklet in order to make the instrument more visibly relevant to adolescents. Furthermore, items about youthful behaviors that were worded in the past tense on the MMPI and MMPI-2 were changed to the present tense for the MMPI-A.

The development of MMPI-A norms included obtaining a large, diverse, normative sample of young people from several regions of the United States including California, Minnesota, Ohio, North Carolina, New York, Pennsylvania, Virginia, and Washington State.

These various testing locations were chosen to maximize the possibility of obtaining a balanced sample of participants according to geographic region, rural-urban residence, and ethnic background.

The experimental form of the MMPI (704-item Form TX) was administered to 815 girls and 805 boys in the normative sample and was also employed in an extensive clinical evaluation study (Williams & Butcher, 1989a, 1989b; Williams et al., 1992). The MMPI-A normative sample was comprised of boys and girls, ages between 14 through 18. Upon completion of the norms, a final MMPI-A booklet was constructed of 478 items, many of which were on the original MMPI and were also included in the MMPI-2.

Establishing Reliability

Reliability studies on the original MMPI suggest that it has moderate levels of temporal stability and internal consistency. Hunsley, Hanson and Parker (1989) completed a meta-analysis of studies on the MMPI between 1970 and 1981. They reported an average internal consistency across 70 studies of the L scale. They also reported an average test-retest reliability of .63 for eight studies with time intervals of one to two years.

Matz, Altepeter, and Perlman (1992) presented further reliability data on the MMPI-2. They examined the temporal stability and internal consistency of the MMPI-2 in a sample of 128 students. Moderate to high stability coefficients were obtained with alpha coefficients ranging from .39 to .91.

Reliability reported in the MMPI-2 manual indicates moderate test-retest reliabilities.

However, test-retest reliabilities were calculated for a narrow population over short-term retesting intervals. Reliabilities for normal males over an average interval of 8 days ranged from a low of .67 on the Pa scale and a high of .92 on the Si scale. A parallel sample of females over the same retesting interval produced similar results (Butcher et al., 1989).

The MMPI-A manual (Butcher et al., 1992) provides information concerning test-retest reliability, internal consistency, and factor structure of the MMPI-A scales. The test-retest correlations for the MMPI-A basic scales range from .49 for F1 to .84 for Si. These results are similar to those of the MMPI-2 basic scales.

Appropriateness of Reliability

One problem with the reliability of the MMPI lies in the construction of the scales. The intercorrelations between many of the scales are high, which is a result of the degree of item overlap. Sometimes the same item will be used simultaneously for the scoring of several different scales, and most of the scales have a fairly high proportion of items common to other scales. For example, the Sc scale has 78 items, however, only 16 of these are unique to the scale. The implication is that interpreters need to be cautious when interpreting the results of the test (Dahlstrom, Welsh & Dahlstrom, 1972).

A reason for this overlap is that there are relationships between items with similar constructs. If these constructs are being measured on the same test, it is expected that there would be scale overlap. For example, depression is common with anxiety, schizophrenia, and hypochondriasis. Therefore, it would be expected that the common occurrence of depression would result in intercorrelations between scales.

Another problem with reliability of the MMPI is that elevations on a scale may occur for a variety of reasons. For example, diagnosing psychosis with the MMPI may be a risk. The degree of disturbance reflected in items is not necessarily an accurate indicator. There may be a number of explanations for high-ranging, psychotic like clinical profiles on the MMPI. Such profiles may be obtained by a respondent with severe obsessive-compulsive disorder, with poor reading comprehension, or by someone who is “faking bad”. Making a diagnosis using critical items taken individually would have minimal reliability (Groth-Marnat, 2009).

With this in mind, the MMPI is appropriately reliable in terms of its use if used in the correct way. Since the MMPI is a complex test whose results can sometimes be ambiguous professionals tend to be cautious in interpreting it, often preferring broad descriptions to specific psychiatric diagnoses, unless these are supported by further testing and observable behavior.

Reliability Coefficients of the MMPI

The internal consistency coefficient alpha for the traditional validity scales ranges from .62 to .74 for men and .57 to .72 for women. The clinical scales coefficient alpha ranges from .58 to .85 for men and .39 to .87 for women, except for the Masculinity-Femininity scale, which is highly heterogeneous. Since the scale construction of the content scales was based on the content similarity, the internal consistency coefficients for the content scales are generally higher than those for the validity or clinical scales. The internal consistency for the content scales is .72 to .86 for men and .73 to .86 for women (Butcher et al., 1989).

The original MMPI t-score values were randomly established and did not provide

separate validity scale values for men and women. However, the MMPI-2 scale t-score values were established according to the new normative data with separate t-scores by gender.

The MMPI has three main scales, the clinical scale, validity scale, and content scale. Each of these is made up of several scales. Therefore, reliability coefficients are different depending on the scale as each scale was created to determine different things. For example, reliability coefficients on the L scale are different from the reliability coefficients on the K scale. While both the L scale and the K scale are validity scales they measure different types of validity.

Establishing Validity

The difficulties with the reliability and scale construction of the MMPI have led to challenges to the MMPI's validity. However, this has been compensated for by extensive validity studies. Specifically, the contributions that the MMPI can make toward assessing and predicting specific problem areas has been extensively researched.

According to Groth-Marnat (2009), there are over 8,000 studies that investigate the validity of the MMPI. These studies provide evidence of the construct validity of the MMPI. An example of this includes *Comparative Validity of MMPI-2 Scores of African American and Caucasian Mental Health Center Clients*, by McNulty, Graham, Ben-Porath, and Stein (1997), in which the comparative validity of Minnesota Multiphasic Personality Inventory—2 (MMPI-2) scores for African American and Caucasian clients from a community mental health center was investigated by contrasting mean MMPI-2 scores and correlations between those scores and conceptually related therapist rating scales for the 2 groups. The African American

men scored significantly higher on the Lie scale and Fears content scale than did their Caucasian counterparts, and the African American women scored higher than Caucasian women on Hypomania. Caucasian women scored higher on the Low Self Esteem content scale. Correlations between MMPI—2 scores and patient description form ratings were not significantly different between racial groups, indicating that the differences in MMPI-2 mean scale score elevations reflect actual differences in client psychopathology.

In another study by Barthlow, Graham, Ben-Porath, and McNulty (1999) The incremental validity of the MMPI-2 content scales was examined using clinical and content scale scores to predict conceptually relevant symptoms and personality characteristics of 274 male and 425 female mental health center outpatients. Regression analyses were performed to determine if the content scales contributed significantly beyond the conceptually relevant clinical scales in predicting therapists' ratings. Of the 10 content scales analyzed, incremental validity was demonstrated for 7 scales for men and 3 scales for women. A second set of analyses indicated that incremental validity was demonstrated for 4 clinical scales for men and 6 clinical scales for women. The findings provide further evidence that the content scales aid interpretation of MMPI-2 scores by contributing additional information beyond the clinical scales.

These studies and the many others that exist give evidence of the MMPI's validity. For example, elevations on the Pd and Ma scales have been linked to measures of impulsivity, aggression, substance abuse, and sensation seeking among adolescents (Gallucci, 1994). High scores on the Si scale have been associated with persons who have low self-esteem, social anxiety, and low sociability (Sieber & Meyers, 1992). The extensive studies of validity have usually been considered a major asset of the MMPI and are one of the major reasons that it is

still popular.

Another way to establish validity is to evaluate the precision of inferences based on the MMPI. Early studies, such as that of Kostlan (1954) and Little & Scneidman (1959) suggest that the MMPI is more accurate than other assessment instruments especially when used in conjunction with a social case history. More recent studies by Garb (1998) and Graham & Lilly (1984) have come to the same conclusion. Garb found that the MMPI was more accurate than social history alone, was superior to other tests, and that the MMPI had the highest validity when combined with social history (Groth-Marnat, 2009).

Appropriateness of Validity

Incremental validity of the MMPI-2 content scales has been found in that they expanded on and increased the validity of the standard MMPI clinical scales. The restructured clinical scales of the MMPI-2 have been found to have better validity than the basic clinical scales (Groth-Marnat, 2009).

While the MMPI-2 was an improvement over the MMPI, issues have been raised regarding comparability between the two versions and whether the differences have caused problems with the validity of the MMPI-2. Ben-Porath and Butcher (1989) believed that the effects of rewriting 82 of the MMPI items for inclusion in the MMPI-2 were small. The rewritten items had no effect on any of the validity, clinical, or special scales when comparisons were made between administrations of the original and the MMPI-2 using college students. This provided support for Butchers and Pope's (1989) argument that the MMPI-2 validity and

clinical scales measure “exactly what they have always measured.”

Further studies by Ben-Porath & Butcher (1989), Chojnacki & Walsh (1992) Harrell, Honaker, & Parnell (1992) and Ward (1991) have also found that there are few differences between the MMPI and MMPI-2 based on individual scale comparisons.

Validity Coefficients

Many studies have been done attempting to correlate the MMPI-2 to other instruments or against the short version of the MMPI-2. In one such study by Moreland (1984) MMPI scales were used to predict psychiatric ratings in two male and two female groups of adult state psychiatric hospital inpatients. The resulting regression coefficients were cross-validated using MMPI, MMPI-168, and Faschingbauer Abbreviated MMPI (FAM) scales as predictors. The validity coefficients obtained in this manner were generally small and similar across MMPI forms. There was a trend for MMPI-based predictions to be superior to those of the short forms as the validity coefficients grew larger. This finding suggested caution in the use of the MMPI-168 and FAM as substitutes for the full MMPI.

Results from Hiller et al.'s (1999) meta-analysis were based on 2,276 Rorschach tests and 5,007 MMPI's. They reported a mean validity coefficient of 0.29 for the Rorschach and 0.30 for the MMPI. Hiller and his colleagues concluded that the validity coefficients for the two instruments were comparable but also that the validity for these instruments is “about as good as can be expected” for personality tests. Given the magnitude of the obtained effect sizes, Hiller et al. endorsed the use of both instruments in clinical practice and commented that users of both

tests should have confidence that they are effective when used for their intended purposes. However, their findings did suggest that the Rorschach variables may be superior to MMPI variables when predicting objective criterion variables while MMPI variables were superior when psychiatric diagnosis were the criterion variables (Strack, 2006).

In a study by Smith, Carroll, and Fuller (1988) the concurrent validity of the MCMI as compared to the MMPI was assessed by administering both tests to 106 newly admitted outpatients and calculating the intercorrelations between these two tests. The correlation matrix indicated that of the 20 MCMI scales, 12 correlated in a positive direction at a level of practical clinical significance (above .40) with one or more of the MMPI Clinical scales. This was considered a highly conservative level, as correlations above .32 were statistically significant at the .0001 level. Of all the MCMI scales, the dependent, psychotic delusions, alcohol abuse, and drug abuse scales showed the least relationship to the MMPI. Both the paranoid and drug abuse scales correlated above .40 with MA, but little clinical significance can be seen in this singular correlation. Alcohol abuse and psychotic delusions failed to correlate at a practically significant level with any of the MMPI clinical scales. The failure of the paranoid and psychotic delusions scales to correlate more strongly with the MMPI may be interpreted as reflecting simply an absence of these characteristics among patient population. However, Millon's study of the correlations between the MCMI and the MMPI also yielded very low correlations for these two scales. The more likely conclusion, therefore, is that these scales do not appear to measure the psychopathological characteristics known to be reflected by the MMPI. The overall comparison of the MCMI to the MMPI represented by this study indicates that differences exist between these two instruments in terms of the psychopathological characteristics and symptom patterns

measured by each. One of the most notable of these was the failure of the MCMI to measure the characterological traits reflected by the Pd scale of the MMPI. None of the MCMI scales correlated at a significant level with Pd, and the highest correlations found were with passive-aggressive (.27) and dysthymic (.26). While the MCMI contains an antisocial scale, the validity of this scale must be investigated further as a result of its failure to correlate with the Pd scale of the MMPI.

Standard Error of Measurement

The MMPI-2 manual (Butcher, et al., 1989) reports data on the test-retest reliability of the scales and the raw score standard errors of measurement. Emphasis is placed on the importance of users implementing the practice of sketching in the range of ± 1 standard error of measurement around the original raw score on the basic scales. Butcher et al. reported reliability coefficients for basic clinical scales without K correction.

In his article, *Confidence Intervals for the MMPI-2*, Patrick Munley (1991) notes that confidence intervals may differ for K-corrected t scores and may differ as reliability coefficients change across different test-retest intervals and populations tested. Munley states, however, that given the apparent comparability of the initial MMPI-2 reliability coefficients with those reported for the MMPI across studies, similar size confidence intervals are expected.

The manual for the MMPI-A (Butcher et al., 1992) provides information concerning reliability, internal consistency, and factor structure of the MMPI-A scales. The correlations for the MMPI-A basic scales range from .49 for the F1 to .84 for the Si and are similar to the test-

retest correlations found for the MMPI-2 basic scales. The typical standard error of measurement of basic scales in the MMPI-A is estimated to be two to three raw score points.

Scaling of the MMPI

The MMPI was one of the first tests to use validity scales to determine whether a respondent was answering in a way that would invalidate the overall results. This scaling method continued and was expanded in the MMPI-2 and the MMPI-A. Information for the MMPI scales was retrieved from the *Handbook of Psychological Assessment* (5th ed.) by Groth-Marnat (2009) unless otherwise stated.

The “?” scale, or the Cs is an informal scale that represents the number of items left unanswered. The purpose of this scale is to provide one of several indices of validity. If 30 or more items on the test are left unanswered, the test is most likely invalid and no further interpretations should be done. This is because an insufficient number of items have been responded to, which means less information is available for scoring and therefore, less confidence can be placed on the results.

The variable response inconsistency scale (VRIN) is made up of pairs of questions that are expected to be answered in a consistent manner. Each pair of questions is either similar or opposite in content. It is expected that similar items will be answered in the same direction. If answered in the opposite direction, then an inconsistent response is indicated.

The true response inconsistency scale (TRIN) is similar to the VRIN however, only pairs

of questions with opposite content are included. This gives the test taker two ways to obtain a response that would be scored on the VRIN scale. A “true” or “false” response on both questions indicates inconsistency.

The infrequency (F) scale measures the degree to which a person answers in a deviant manner. The MMPI and MMPI-2 F scale items were selected based on their endorsement by less than 10% of the norm. High F scores indicate the client is answering in a scorable direction to a wide variety of unusual characteristics. High scores on the F scale are usually accompanied by high scores on many of the clinical scales. There is no exact cutoff score to determine whether a profile is invalid.

The MMPI-A has a 66-item F scale that was constructed in a similar manner as the MMPI-2 F scale. However, since adolescents are more likely to endorse unusual experiences, a criterion of 20% endorsement was used for inclusion. The MMPI-A F scale is divided into the F1 scales to assess validity in the clinical scales and the F2 to assess validity in supplementary and content scales.

The lie scale (L) consists of 15 questions that specify the degree to which a client is attempting to describe him or herself in an unrealistically positive manner. High scorers describe themselves in an excessively perfectionist manner.

The defensive scale (K) was also designed to detect clients that described themselves in an overly positive manner. However, it is more subtle than the L scale and therefore, more effective. To compensate for a defensive approach to test taking a K correction is added to Hs, Pd, Pt, Sc, and Ma clinical scales. The use of the K scale has been called into question and

therefore was omitted from the MMPI-A and is optional for the MMPI-2.

The superlative (S) scale was developed to more precisely spot those who try to appear excessively virtuous since the K and L scales have been found to be only moderately effective in differentiating persons who fake good.

There are ten clinical scales on the MMPI-2. The clinical scales were originally intended to distinguish "pure" groups with psychiatric disorders. Therefore, the actual names of the scales assert bold psychiatric labels.

Scale 1 is the Hypochondriasis (Hs) scale. It was originally designed to distinguish between hypochondriacs and other types of psychiatric patients. While it may indicate hypochondriasis, it is more useful in indicating a variety of personality characteristics that are often consistent with a diagnosis of hypochondriasis. While elevations on the Hs scale are fairly rare among adolescents, elevated Hs scores on the MMPI-A may indicate school related difficulties or family problems.

Scale 2 is Depression (D) and relates to brooding, physical slowness, and subjective feelings of depression. High scores on this scale may indicate difficulty in one or more of these areas. Elevation of the D scale usually decrease with the use of treatment. High scorers are usually described as self-critical, withdrawn, silent, and aloof. Adolescents usually score slightly lower than adults while older adults are likely to score 5 to 10 points higher.

Scale 3, Hysteria (Hy) was originally designed to identify clients who developed a psychologically based sensory or motor disorder. This scale mainly involves physical

complaints and denial of emotional or interpersonal difficulties. High scale 3 scores on the MMPI-A should be interpreted with caution due to the related questions of validity.

Scale 4, Psychopathic Deviate (Pd) was developed to assess a person's general level of social adjustment. The original purpose of this scale was to distinguish those persons who seemed unconcerned about the social consequences of their behavior and yet did not appear to suffer from psychological difficulties. Caution should be taken when interpreting the scale 4 scores since there are several reasons this score may be elevated. For example, risk takers and graduate students in the social sciences often have an elevated Pd score. Adolescents also commonly have elevated Pd scores on the MMPI-A. This is most likely due to their chaotic attempt to develop an identity and achieve independence.

Scale 5, Masculinity-Femininity (Mf) was designed to identify males who had homosexual feelings and gender-identity confusion. However, a high score does not appear to directly relate to an individual's sexual preference. Instead, it appears to relate the degree to which a person endorses traditional gender roles. Scores on the Mf scales should be interpreted in relationship to scores on the other clinical scales. On the MMPI-A males rarely score high on the Mf scale.

Scale 6, Paranoia (Pa) was designed to identify those persons with paranoid conditions or states. It measures the degree of interpersonal sensitivity, self-righteousness, and suspiciousness. High scoring individuals tend to have significant levels of paranoia. Elevations of the Pa scale on the MMPI-A are usually consistent with academic difficulties, disagreements with parents, hostility, and feelings of persecution.

Scale 7, Psychasthenia (Pt) was developed to measure the symptoms of compulsions, obsessions, unreasonable fears, and excessive doubts. This scale most accurately measures anxiety and ruminative self doubt. It is a good indicator, along with scale 2 of the degree of distress a person is having. High scorers are likely to be tense, indecisive, obsessively worried, and have difficulty concentrating. They are prone to overreact to medical complaints, are rigid, agitated, fearful and anxious. High scores on the MMPI-A may indicate a rigid personality style which may not be problematic until adulthood. Girls with an elevated Pt score tend to be depressed, make suicidal threats, steal, and report disagreements with their parents. Boys are likely to have low self-confidence and may have been sexually abused.

Scale 8, Schizophrenia (Sc) was originally designed to identify those people who were experiencing schizophrenic conditions. A high score may mean there is a possibility of Schizophrenia, however, not everyone who scores high on this scale meets the criteria for a diagnosis, partly because the questions on this scale cover a very diverse number of areas. High Sc scores on the MMPI-A may indicate school related problems, sexual abuse, and disagreements with parents.

Scale 9, Hypomania (Ma) was designed to identify persons experiencing hypomanic symptoms. However, since hypomania occurs in cycles, persons in the acute phase were unable to be tested due to the seriousness of their condition. Further, some people may score low on the Ma scale, which may reflect the depressive part of the cycle. On the MMPI-A high elevations may suggest underachievement in school, problems at home, irrational manic behaviors and antisocial acts.

Scale 0, Social Introversion (Si) was developed from the responses of college students on questions relating to introversion and extraversion. High scores suggest that the respondent is shy, has limited social skills, feels uncomfortable in social situations, and withdraws from interpersonal situations. High scores on the Si scale of the MMPI-A are a clear indication of difficulties in social relationships.

The MMPI-2 content scales were developed to refine the meanings of the clinical scales. The content scales are divided into four categories: internal symptomatic behaviors, external aggressive tendencies, negative self-view, and general problem areas.

Internal symptomatic behaviors include anxiety, fears, obsessiveness, depression, health concerns, and bizarre Mentation. External aggressive tendencies include anger, cynicism, antisocial practices, and type A personalities. Negative self-view includes low self-esteem, and general problem areas cluster includes social discomfort, family problems, work interference, and negative treatment indicators.

The content scales of the MMPI-A were developed to be relevant for adolescent populations. An increased elevation (over 65) indicates that there are extensive problems indicated while a mild elevation (60 to 64) implies that the descriptors apply to the person. Content scales on the MMPI include anxiety, obsessiveness, depression, health, alienation, bizarre Mentation, anger, conduct problems, cynicism, low self-esteem, low aspirations, social discomfort, family problems, school, and negative treatment indicators.

The Harris-Lingoes and Si subscales were developed as a supplement for interpreting the

original scales. A clinician can assess whether a person scoring high on Scale 4 achieved that elevation due to family discord (Pd 1), authority problems (Pd 2) or social imperturbability (Pd 3).

Limitations of the MMPI

Like all psychological testing tools, the MMPI has its limitations. Some criticisms of the original MMPI related to obsolete norms, offensive items, and poorly worded items. The MMPI-2 was developed to correct these problems.

In all versions of the MMPI, the scale labels can be confusing because they use traditional diagnostic categories. A person might read a scale such as Sc and conclude that a person with an elevated score has schizophrenia; however, this is not necessarily an accurate diagnosis. In addition, moderate elevations can occur for some normal persons.

With each new edition of the DSM, the labels given to scale names of the MMPI have become increasingly obsolete, such as in the scale 7, Psychasthenia. To compensate for this, clinicians should use scale numbers rather than titles.

The MMPI has been translated into more than 50 languages and is available in many countries. Normative and validity studies have been conducted on several different cultural groups (Butcher, 1996, 2004; Handel & Ben-Porath, 2000). This makes it possible to compare data collected from varying cultures. However, in some contexts there have been no norms developed.

Finally, the excessive length of the MMPI-2 is problematic. However, this limitation can be countered by either administering only the first 370 items (350 for the MMPI-A) or by using the MMPI-2 Restructured Form with 388 items (Groth-Marnat, 2009).

Appropriate Use of the MMPI

The MMPI-2 contains 567 test items and takes approximately 60 to 90 minutes to complete. The MMPI should be administered, scored, and interpreted by a clinical psychologist or psychiatrist, who has received specific training in MMPI use. The MMPI should be used in collaboration with other assessment tools. Diagnosis should never be made solely on the results of an MMPI test. The MMPI-2 can be administered individually or in groups and computerized versions are available. The test is designed for individual's age 18 and older. The test can be scored by hand or by computer, but results should always be interpreted by a qualified mental health professional that has had extensive training in MMPI-2 interpretation.

The MMPI-A should also be administered, scored, and interpreted by a clinical psychologist or psychiatrist. The MMPI-A should be administered to adolescents aged 14 through 18, although it can be extended downward for use with 12 and 13 year olds who possess the necessary reading level and cognitive skills. Eighteen year olds can be assessed with either the MMPI-A or MMPI-2. This decision should be made on an individual basis in consideration of the current life context and level of autonomy. Evaluations of reading ability should be completed before administration of the MMPI-A.

If a client asks for a word definition during administration of the test, supervisor

should provide responses in a neutral manner, preferably by providing dictionary definitions. It is also important to provide an environment for testing that is sufficiently private, quiet and comfortable with adequate supervision. This test should not be sent home for completion. Supervision should be unobtrusive (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989).

Overall Evaluation of the MMPI

The MMPI, was developed in the late 1930s by a psychologist Starke Hathaway and psychiatrist J.C. McKinley at the University of Minnesota. It was revised in 1989 and the MMPI-2 was published to replace the outdated original version. However, the MMPI-2 was not meant to be used on adolescents and therefore, the MMPI-A was developed and published in 1992.

Today, the MMPI is one of the most frequently used clinical testing instrument and is one of the most researched psychological tests in existence. The MMPI is not a perfect test, but it remains a valuable tool in the diagnosis and treatment of mental illness.

The MMPI-2 contains 567 test items and takes approximately 60 to 90 minutes to complete. It has 10 clinical scales and 6 validity scales. It has been translated into over 50 languages and is available in many countries.

Reliability of the MMPI can be difficult to establish due to the number of scales. Many studies on reliability of the MMPI look at individual scales rather than the test as a whole. However, studies of the MMPI-2 indicate moderate test-retest reliabilities. One of the problems with testing the reliability of the MMPI is that many of the scales overlap. Often one item is used for scoring on several different scales.

The longevity of the MMPI suggests that it is a useful and valid tool. Adding to its usefulness is the fact that the MMPI can be used in many settings for extremely diverse reasons. Many studies of the MMPI focus on the identification of medical and psychiatric disorders. There are also numerous studies available about the use of the MMPI in a forensic context. Other frequent areas of study include use of the MMPI with alcoholism, ageing, locus of control, computer-based interpretations, chronic pain, and occupation.

The MMPI is a valuable instrument that has been used for over 60 years. When administered by a properly trained professional and used in collaboration with other assessment tools and a complete case history, the MMPI can provide valuable and practical information about the test taker.

References Cited

Barthlow, D.L., Graham, J.R., Ben-Porath, Y.s. & McNulty, J.L. (1999) Incremental validity of the MMPI-2 content scales in an outpatient mental health setting. *Psychological Assessment, 11* p. 39-47.

Ben-Porath, Y. & Butcher, J. (1989) The psychometric stability of rewritten MMPI items. *Journal of Personality Assessment, 53* p. 645-653

Butcher, J. (1994) Psychological assessment of airline pilot applicants with the MMPI-2. *Journal of Personality Assessment 62*(1) p. 31-44

Butcher, J.N. (1996) *International Adaptations of the MMPI-2*. University of Minnesota Press, MN.

Butcher, J.N. (2004) Personality assessment without borders: Adaptation of the MMPI-2 across cultures. *Journal of Personality Assessment, 83*, p. 90-104.

Butcher, J. N., Dahlstrom, W. G., Graham, J. R., Tellegen, A., & Kaemmer, B. (1989). *The Minnesota Multiphasic Personality Inventory-2 (MMPI-2): Manual for administration and scoring*. University of Minnesota Press: Minneapolis, MN.

Butcher, J.N., Williams, C.L., Graham, J.R., Archer, R.P., Tellegen, A., Ben-Porath, Y.S., & Kaemmer, B. (1992). *Minnesota Multiphasic Personality Inventory-Adolescent Version (MMPI-A): Manual for administration, scoring and interpretation*. University of Minnesota Press: Minneapolis, MN.

Butcher, J. N. and Williams C.L. (1999) *Essentials of MMPI-2 and MMPI-A Interpretation*. Revised. University of Minnesota Press: Minneapolis, MN.

Chojnacki, J. & Walsh, W. (1992) The consistency of scores and configural patterns between MMPI and MMPI-2. *Journal of Personality Assessment, 59*, p. 276-289

Dahlstrom, W., Welsh, G. & Dahlstrom, L. (1972). *An MMPI Handbook. Vol. 1: Clinical Interpretations*. University of Minnesota Press: Minneapolis, MN.

Gallucci, N. (1994) Criteria associated with clinical scales and Harris-Lingoes subscales of the Minnesota Multiphasic Personality Inventory with adolescent inpatients. *Psychological Assessment, 6* p. 179-187.

Graham, John Robert (1987). *The MMPI: A Practical Guide*. Oxford University Press: NY.

Graham, John R. (2000) *MMPI-2: Assessing Personality and Psychopathology*. 3rd edition, revised. Oxford University Press: NY.

Groth-Marnat, G. (2009) *Handbook of Psychological Assessment, 5th ed.* John Wiley & Sons, Inc.: NJ.

- Handel, R & Ben-Porath, Y. (2000) An investigation of the psychometric properties of the MMPI-2 Restructured Clinical scales with mental health patients. *Journal of Personality Assessment, 90*, p. 239-249.
- Harrell, T., Honaker, L., & Parnell, T. (1992) Equivalence of the MMPI-2 with the MMPI in psychiatric patients. *Psychological Assessment, 4*, p. 460-465.
- Hersen M., Thomas J., Goldstein G., Hlsenroth M., Haynes S., Beers S., Heiby E., Segal D. (2003) *Comprehensive Handbook of Psychological Assessment*. John Wiley and Sons: NJ.
- Hunsley, J., Hanson, R., Parker, K. (1988) A summary of the reliability and stability of MMPI scales. *Journal of Clinical Psychology 44(1)*, p. 44-46.
- Karp C., and Karp L. (1997-2000) MMPI: Questions to Ask. Retrieved May 27, 2009 on the Internet: <http://www.falseallegations.com/mmpi-bw.htm>
- Kornfeld, A. (1995, July). Police officer candidate MMPI-2 performance: Gender, ethnic, and normative factors. *Journal of Clinical Psychology, 51(4)*, p. 536-540.
- Matz, P., Altepeter, T., Perlman B. (1992) MMPI-2 reliability with college students. *Journal of Clinical Psychology 48(3)*, p. 330-334.
- McIntire S., Miller L. (2006) *Foundations of Psychological Testing*. Sage Publications: CA.
- McNulty, J.L., Graham, J.R., Ben-Porath, Y.S. & Stein, L.A. (1997) Comparative validity of MMPI-2 scores of African American and Caucasian mental health center clients. *Psychological Assessment, 9* p. 464-470.
- Mednick, S. A., Higgins, J., and Kirschenbaum, J. (1975). *Psychology*. Wiley: NY.
- Moreland, K. (1984) Comparative validity of the MMPI and two short forms: psychiatric ratings. *Journal of Personality Assessment, 48 (3)*, p. 265-270.
- Munley, P. (1991) Confidence intervals for the MMPI-2. *Journal of Personality Assessment, 57 (1)* p. 52-60.
- Pearson Education, Inc. (2008). *7th Circuit Appeals Court Ruling in the Karraker v. Rent-A-Center case confirms the appropriate use of the MMPI-2™ test in employment settings*. Retrieved May 26, 2009 on the World Wide Web: <http://www.pearsonassessments.com/resources/appealscase.htm>
- Sieber, K. & Meyers, L. (1992) Validation of the MMPI-2 social introversion subscales. *Psychological Assessment, 4*, p. 185-189.

- Smith D., Carroll, J., & Fuller, G. (1988) The relationship between the Millon Clinical Multiaxial Inventory and the MMPI in a private outpatient mental health clinic. *Journal of Clinical Psychology, 44* (2), p. 165–174.
- Strack, S. (2006) *Differentiating Normal and Abnormal Personality*. Springer Publishing Co.: NY.
- Ward, L. (1991) A comparison of the MMPI and the MMPI-2. *Psychological Assessment, 3*, p. 688-690.
- Williams, C. L., & Butcher, J. N. (1989a). An MMPI study of adolescents: I. Empirical validity of the standard scales. *Psychological Assessment: A Journal of Consulting and Clinical Psychology, 1*, 251-259.
- Williams, C. L., & Butcher, J. N. (1989b). An MMPI study of adolescents: II. Verification and limitations of code type classifications. *Psychological Assessment: A Journal of Consulting and Clinical Psychology, 1*, 260-265.
- Williams, C. L., Butcher, J. N., BenPorath, Y. S., & Graham, J. R. (1992). *MMPIA content scales: Assessing psychopathology in adolescents*. University of Minnesota Press: MN.