01/27/2015

Minnesota Multiphasic Personality Inventory

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Minnesota Multiphasic Personality Inventory	
Diagnostics	
ICD-9-CM	94.02 (http://icd9cm.chrisendres.com/index.php?srchtype=procs&srchtext=94.02&Submit=Search&action=search)
MeSH	D008950

The **Minnesota Multiphasic Personality Inventory** (**MMPI**) is the most widely used and researched standardized psychometric test of adult personality and psychopathology.[1] Psychologists and other mental health professionals use various versions of the MMPI to develop treatment plans; assist with differential diagnosis; help answer legal questions (forensic psychology); screen job candidates during the personnel selection process; or as part of a therapeutic assessment procedure.[2]

The original MMPI, first published by the University of Minnesota Press in 1943, was replaced by an updated version, the MMPI-2, in 1989. A version for adolescents, the MMPI-A, was published in 1992. An alternative version of the test, the MMPI-2 Restructured Form (MMPI-2-RF), published in 2008, retains some aspects of the traditional MMPI assessment strategy, but adopts a different theoretical approach to personality test development.

Contents

History

The original authors of the MMPI were Starke R. Hathaway, PhD, and J. C. McKinley, MD. The MMPI is copyrighted by the University of Minnesota.

The MMPI has been considered the gold standard in personality testing ever since its inception as an adult measure of psychopathology and personality structure in 1939. Many additions and changes to the measure have been made over time, including the addition of dozens of supplemental, validity, and other content scales to improve interpretability of the original Clinical Scales, changes in the number of items in the measure, and other adjustments. The most historically significant developmental changes include:

- In 1989, the MMPI became the MMPI-2 as a result of a major restandardization project that was undertaken to develop an entirely new set of normative data representing current population characteristics; the restandardization produced an extremely large normative database that included a wide range of clinical and non-clinical samples; psychometric characteristics of the Clinical Scales were not addressed at that time [3]
- In 2003, the Restructured Clinical Scales were added to the published MMPI-2, representing a major psychometric reconstruction of the original Clinical Scales; this project was designed to address known psychometric flaws in the original Clinical Scales that unnecessarily complicated their interpretability and validity, but could not be addressed at the same time as the restandardization process [4] Specifically, Demoralization - a non-specific distress component thought to impair the discriminant validity of many self-report measures of psychopathology - was identified and removed from the original Clinical Scales. Restructuring the Clinical Scales was the initial step toward addressing the remaining psychometric and theoretical problems of the MMPI-2.
- In 2008, the MMPI-2-RF (Restructured Form) was published after nearly two decades of extensive efforts to psychometrically and theoretically fine tune the measure [5] The MMPI-2-RF contains 338 items, contains 9 validity and 42 homogeneous substantive scales, and allows for a straightforward interpretation strategy. The MMPI-2-RF was constructed using a similar rationale used to create the Restructured Clinical (RC) Scales. The rest of the measure was developed utilizing statistical analysis techniques that produced the RC Scales as well as a hierarchical set of scales similar to contemporary models of psychopathology to inform the overall measure reorganization. The entire measure reconstruction was accomplished using the original 567 items contained in the MMPI-2 item pool. The MMPI-2 Restandardization norms were used to validate the MMPI-2-RF; over 53,000 correlations based on more than 600 reference criteria are available in the MMPI-2-RF Technical Manual for the purpose of comparing the validity and reliability of MMPI-2-RF scales with those of the MMPI-2 [5][6] Across multiple studies and as supported in the technical manual, the MMPI-2-RF performs as good or, in many cases, better than the MMPI-2.

The MMPI-2-RF is a streamlined measure. Retaining only 338 of the original 567 items, its hierarchical scale structure provides non-redundant information across 51 scales that are easily interpretable. Validity Scales were retained (revised), two new Validity Scales have been added (Fs in 2008 and RBS in 2011), and there are new scales that capture somatic complaints. All of the MMPI-2-RF's scales demonstrate either increased or equivalent construct and criterion validity compared to their MMPI-2 counterparts[5][6][7]

Current versions of the test (MMPI-2 and MMPI-2-RF) can be completed on optical scan forms or administered directly to individuals on the computer. Computer scoring is available and highly recommended over hand-scoring to reduce scoring errors. Computer scoring programs for the MMPI-2 (567 items) and MMPI-2-RF (338 items) are licensed by the University of Minnesota Press to Pearson Assessments and other companies located in different countries. The computer scoring programs provide a range of scoring profile choices. The MMPI-2 can generate a Score Report or an Extended Score Report, which includes the Restructured Clinical Scales from which the Restructured Form was later developed.[4] The MMPI-2 Extended Score Report includes scores on the Original Clinical Scales as well as Content, Supplementary, and other subscales of potential interest to clinicians. The MMPI-2-RF computer scoring offers an option for the administrator to select a specific reference group with which to contrast and compare an individual's obtained scores; comparison groups include clinical, non-clinical, medical, forensic, and pre-employment settings, to name a few. The newest version of the Pearson Q-Local computer scoring program offers the option of converting MMPI-2 data into MMPI-2-RF reports as well as numerous other new features. Use of the MMPI is tightly controlled for ethical and financial reasons. Any clinician using the MMPI is required to meet specific test publisher requirements in terms of training and experience, must pay for all administration materials including the annual computer scoring license and is charged for each report generated by computer.

MMPI

The original MMPI was developed on a scale-by-scale basis in the late 1930s and early 1940s.[8] Hathaway and McKinley used an empirical [criterion] keying approach, with clinical scales derived by selecting items that were endorsed by patients known to have been diagnosed with certain pathologies.[9][10][11][12][13] The difference between this approach and other test development strategies used around that time was that it was atheoretical (not based on any particular theory) and thus the initial test was not aligned with the prevailing psychodynamic theories. The atheoretical approach to MMPI development ostensibly enabled the test to capture aspects of human psychopathology that were recognizable and meaningful despite changes in clinical theories. However, the MMPI had flaws of validity that were soon apparent and could not be overlooked indefinitely. The control group for its original testing consisted of a very small number of individuals, mostly young, white, and married people from rural Midwestern geographic areas. The MMPI also faced problems with its terminology not being relevant to the population it was supposed to measure, and it became necessary for the MMPI to measure a more diverse number of potential mental health problems, such as "suicidal tendencies, drug abuse, and treatment-related behaviors."[14]

MMPI-2

The first major revision of the MMPI was the MMPI-2, which was standardized on a new national sample of adults in the United States and released in 1989.[3] The new standardization was based on 2,600 individuals from a more representative background than the MMPI.[15] It is appropriate for use with adults 18 and over. Subsequent revisions of certain test elements have been published, and a wide variety of subscales were introduced over many years to help clinicians interpret the results of the original clinical scales. The current MMPI-2 has 567 items, and usually takes between one and two hours to complete depending on reading level. It is designed to require a sixth-grade reading level.[15] There is an infrequently used abbreviated form of the test that consists of the MMPI-2's first 370 items.[16] The shorter version has been mainly used in circumstances that have not allowed the full version to be completed (e.g., illness or time pressure), but the scores available on the shorter version are not as extensive as those available in the 567-item version. The original form of the MMPI-2 is the third most frequently utilized test in the field of psychology, behind the most used IQ and achievement tests.

MMPI-A

A version of the test designed for adolescents ages 14 to 18, the MMPI-A, was released in 1992. The youth version was developed to improve measurement of personality, behavior difficulties, and psychopathology among adolescents. It addressed limitations of using the original MMPI among adolescent populations.[17]

Some concerns related to use of the MMPI with youth included inadequate item content, lack of appropriate norms, and problems with extreme reporting. For example, many items were written from an adult perspective and did not cover content critical to adolescence (e.g., peers, school). Likewise, adolescent norms were not published until the 1970s, and there was not consensus on whether adult or adolescent norms should be used when the instrument was administered to youth. Finally, the use of adult norms tended to overpathologize adolescents, who demonstrated elevations on most original MMPI scales (e.g., T scores greater than 70 on the F validity scale; marked elevations on clinical scales 8 and 9). Therefore, an adolescent version was developed and tested during the restandardization process of the MMPI, which resulted in the MMPI-A.[17]

The MMPI-A has 478 items. It includes the original 10 clinical scales (Hs, D, Hy, Pd, Mf, Pa, Pt, Sc, Ma, Si), six validity scales (?, L, F, F1, F2, K, VRIN, TRIN), 31 Harris Lingoes subscales, 15 content component scales, the Personality Psychopathology Five (PSY-5) scales (AGGR, PSYC, DISC, NEGE, INTR), three social introversion subscales (Shyness/Self-Consciousness, Social Avoidance, Alienation), and six supplementary scales (A, R, MAC-R, ACK, PRO, IMM). There is also a short form of 350 items, which covers the basic scales (validity and clinical scales). The validity, clinical, content, and supplementary scales of the MMPI-A have demonstrated adequate to strong test-retest reliability, internal consistency, and validity.[17]

The MMPI-A normative and clinical samples included 805 males and 815 females, ages 14 to 18, recruited from eight schools across the United States and 420 males and 293 females ages 14 to 18 recruited from treatment facilities in Minneapolis, Minnesota, respectively. Norms were prepared by standardizing raw scores using a uniform t-score transformation, which was developed by Auke Tellegen and adopted for the MMPI-2. This technique preserves the positive skew of scores but also allows percentile comparison.[17]

Strengths of the MMPI-A include the use of adolescent norms, appropriate and relevant item content, inclusion of a shortened version, a clear and comprehensive manual,[18] and strong evidence of validity.[19][20]

Critiques of the MMPI-A include a non-representative clinical norms sample, overlap in what the clinical scales measure, irrelevance of the mf scale,[18] as well as long length and high reading level of the instrument.[20]

The MMPI-A is one of the most commonly used instruments among adolescent populations.[20]

MMPI-2-RF

A new and psychometrically improved version of the MMPI-2 has been developed employing rigorous statistical methods that were used to develop the RC Scales in 2003 and used in 2008.[4] The new MMPI-2 Restructured Form (MMPI-2-RF) has been released by Pearson Assessments. The MMPI-2-RF produces scores on a theoretically grounded, hierarchically structured set of scales, including the RC Scales. The modern methods used to develop the MMPI-2-RF were not available at the time the MMPI was originally developed. The MMPI-2-RF builds on the foundation of the RC Scales, which are theoretically more stable and homogenous than the older clinical scales on which they are roughly based. Publications on the MMPI-2-RC Scales include book chapters, multiple published articles in peer-reviewed journals, and address the use of the scales in a wide range of settings.[21] The MMPI-2-RF scales rest on an assumption that psychopathology is a homogeneous condition that is additive.[22]

Current scale composition

Clinical scales

Scale 1 (AKA the Hypochondriasis Scale) : Measures a person's perception and preoccupation with their health and health issues., Scale 2 (AKA the Depression Scale) : Measures a person's depressive symptoms level., Scale 3 (AKA the Hysteria Scale) : Measures the emotionality of a person., Scale 4 (AKA the Psychopathic Deviate Scale) : Measures a person's need for control or their rebellion against control., Scale 5 (AKA the Femininity/Masculinity Scale) : Measures a stereotype of a person and how they compare. For men it would be the Marlboro man, for women it would be June Cleaver or Donna Reed., Scale 6 (AKA the Paranoia Scale) : Measures a person's inability to trust., Scale 7 (AKA the Psychasthenia Scale) : Measures a person's anxiety levels and tendencies., Scale 8 (AKA the Schizophrenia Scale) : Measures a person's unusual/odd cognitive, perceptual, and emotional experiences, Scale 9 (AKA the Mania Scale) : Measures a person's energy., Scale 0 (AKA the Social Introversion Scale) : Measures whether people enjoy and are comfortable being around other people.

The original clinical scales were designed to measure common diagnoses of the era.

Number	Abbreviation	Description	What is measured	No. of items
1	Hs	Hypochondriasis	Concern with bodily symptoms	32
2	D	Depression	Depressive Symptoms	57
3	Hy	Hysteria	Awareness of problems and vulnerabilities	60
4	Pd	Psychopathic Deviate	Conflict, struggle, anger, respect for society's rules	50
5	MF	Masculinity/Femininity	Stereotypical masculine or feminine interests/behaviors	56
6	Pa	Paranoia	Level of trust, suspiciousness, sensitivity	40
7	Pt	Psychasthenia	Worry, Anxiety, tension, doubts, obsessiveness	48
8	Sc	Schizophrenia	Odd thinking and social alienation	78
9	Ma	Hypomania	Level of excitability	46
0	Si	Social Introversion	People orientation	69

Codetypes are a combination of the one, two or three (and according to a few authors even four), highest-scoring clinical scales (ex. 4, 8, 2, = 482). Codetypes are interpreted as a single, wider ranged elevation, rather than interpreting each scale individually.

Validity scales

The validity scales in all versions of the MMPI-2 (MMPI-2 and RF) contain three basic types of validity measures: those that were designed to detect non-responding or inconsistent responding (CNS, VRIN, TRIN), those designed to detect when clients are over reporting or exaggerating the prevalence or severity of psychological symptoms (F, Fb, Fp, FBS), and those designed to detect when test-takers are under-reporting or downplaying psychological symptoms (L, K, S). A new addition to the validity scales for the MMPI-2-RF includes an over reporting scale of somatic symptoms (Fs) as well as revised versions of the validity scales of the MMPI-2 (VRIN-r, TRIN-r, F-r, Fp-r, FBS-r, L-r, and K-r). The MMPI-2-RF does not include the S or Fb scales, and the F-r scale now covers the entirety of the test.

Abbreviation	New in version	Description	Assesses
CNS	1	"Cannot Say"	Questions not answered
L	1	Lie	Client "faking good"
F	1	Infrequency	Client "faking bad" (in first half of test)
K	1	Defensiveness	Denial/Evasiveness
Fb	2	Back F	Client "faking bad" (in last half of test)
VRIN	2	Variable Response Inconsistency	answering similar/opposite question pairs inconsistently
TRIN	2	True Response Inconsistency	answering questions all true/all false
F-K	2	F minus K	honesty of test responses/not faking good or bad
S	2	Superlative Self-Presentation	improving upon K scale, "appearing excessively good"
Fp	2	F-Psychopathology	Frequency of presentation in clinical setting
Fs	2-RF	Infrequent Somatic Response	Overreporting of somatic symptoms

Supplemental scales

To supplement these multidimensional scales and to assist in interpreting the frequently seen diffuse elevations due to the general factor (removed in the RC scales)[23][24] were also developed, with the more frequently used being the substance abuse scales (MAC-R, APS, AAS), designed to assess the extent to which a client admits to or is prone to abusing substances, and the A (anxiety) and R (repression) scales, developed by Welsh after conducting a factor analysis of the original MMPI item pool.

Dozens of content scales currently exist, the following are some samples:

Abbreviation	Description
Es	Ego Strength Scale
OH	Over-Controlled Hostility Scale
MAC	MacAndrews Alcoholism Scale
MAC-R	MacAndrews Alcoholism Scale Revised
Do	Dominance Scale
APS	Addictions Potential Scale
AAS	Addictions Acknowledgement Scale
SOD	Social Discomfort Scale
A	Anxiety Scale
R	Repression Scale
TPA	Type A Scale
MDS	Marital Distress Scale

PSY-5 scales

These measure: Aggressiveness, Psychoticism, Constraint, Negative Emotionality/Neuroticism, and Positive Emotionality/Extraversion.

Scoring and interpretation

Like many standardized tests, scores on the various scales of the MMPI-2 and the MMPI-2-RF are not representative of either percentile rank or how "well" or "poorly" someone has done on the test. Rather, analysis looks at relative elevation of factors compared to the various norm groups studied. Raw scores on the scales are transformed into a standardized metric known as T-scores (Mean or Average equals 50, Standard Deviation equals 10), making interpretation easier for clinicians. Test manufacturers and publishers ask test purchasers to prove they are qualified to purchase the MMPI/MMPI-2/MMPI-2-RF and other tests.

Recent advancements in the MMPI-2

RC and Clinical Scales

The Restructured Clinical Scales were designed to be psychometrically improved versions of the original Clinical Scales, which were known to contain a high level of interscale correlation, overlapping items, and were confounded by the presence of an overarching factor that has since been extracted and placed in a separate scale (demoralization). The RC scales measure the core constructs of the original clinical scales. Critics of the RC scales assert they have deviated too far from the original clinical scales, the implication being that previous research done on the clinical scales will not be relevant to the interpretation of the RC scales. However, researchers on the RC scales assert that the RC scales predict pathology in their designated areas better than their concordant original clinical scales while using significantly fewer items and maintaining equal to higher internal consistency, reliability and validity; further, unlike the original clinical scales, the RC scales are not saturated with the primary factor (demoralization, now captured in RCdem) which frequently produced diffuse elevations and made interpretation of results difficult; finally, the RC scales have lower interscale correlations and, in contrast to the original clinical scales, contain no interscale item overlap.[25] The effects of removal of the common variance spread across the older clinical scales due to a general factor common to psychopathology, through use of sophisticated psychometric methods, was described as a paradigm shift in personality assessment.[26][27] Critics of the new scales argue that the removal of this common variance makes the RC scales less ecologically valid (less like real life) because real patients tend to present complex patterns of symptoms. However, this issue is addressed by being able to view elevations on other RC scales that are less saturated with the general factor and, therefore, are also more transparent and much easier to interpret.

Addition of the Lees-Haley FBS (Symptom Validity)

Psychologist Paul Lees-Haley developed the FBS (Fake Bad Scale). Although the FBS acronym remains in use, the official name for the scale changed to Symptom Validity Scale when it was incorporated into the standard scoring reports produced by Pearson, the licensed publisher.[28] Some psychologists question the validity and utility of the FBS scale. The peer-reviewed journal, *Psychological Injury and Law*, published a series of pro and con articles in 2008 and 2009.[29][30][31]

Criticisms

Old vs. new test

Though the Minnesota Multiphasic Personality Inventory is one of the most widely used personality tests, criticisms have arisen. Auke Tellegen from the University of Minnesota and Yossef S. Ben-Porath from Kent State University stated, "The introduction of the MMPI-2 has stimulated studies of its comparability with the MMPI...The restandardization and revision of an established psychological test raise legitimate questions of comparability and continuity between the old and new versions. The new version is, presumably, in some significant respects an improvement over the old one. At the same time, users need to know to what extent and under what circumstances they can, without loss of validity, interpret test scores obtained with the new versions as if it were still the old

version. This question can be particularly pressing in the transitional period following the introduction of the new version, whenever the empirical data based on the old version is still far more substantial than that of the new one." [32] They concluded that there was a congruence between MMPI-2 and the MMPI code types. Tellegen and Ben-Porath also wrote, "...we believe that the efforts (of the MMPI-2 code types) will be more productive if they focus on homogeneous code types. Furthermore, this research would be more effectively conducted in the broader framework of a research program in which an all-inclusive code-type system is not a necessity, namely, a program in which alternative predictive models, for example, single, multiple, linear, and configurable regression models, are explored as well." [33]

Racial disparity

One of the biggest criticisms of the test is the difference between whites and non-whites. Non-whites tend to score five points higher on the test. Charles McCreary and Eligio Padilla from the University of California, Los Angeles state, "There is continuing controversy about the appropriateness of the MMPI when decisions involve persons from non-white racial and ethnic backgrounds. In general, studies of such divergent populations as prison inmates, medical patients, psychiatric patients, and high school and college students have found that blacks usually score higher than whites on the L, F, Sc, and Ma scales. There is near agreement that the notion of more psychopathology in racial ethnic minority groups is simplistic and untenable. Nevertheless, three divergent explanations of racial differences on the MMPI have been suggested. Black-white MMPI differences reflect variations in values, conceptions, and expectations that result from growing up in different cultures. Another point of view maintains that differences on the MMPI between blacks and whites are not a reflections of racial differences, but rather a reflection of overriding socioeconomic variations between racial groups. Thirdly, MMPI scales may reflect socioeconomic factors, while other scales are primarily race-related." [34]

See also

- 16PF Questionnaire
- Diagnostic classification and rating scales used in psychiatry
- Employment testing#Personality tests
- Myers-Briggs Type Indicator (MBTI)
- Neuroticism Extraversion Openness Personality Inventory (NEO-PI)
- Therapeutic assessment

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External links

- MMPI-2, Pearson Website (http://www.pearsonassessments.com/mmpi2.aspx)
- MMPI-A (Minnesota Multiphasic Personality Inventory-Adolescent) (http://www.pearsonassessments.com/tests/mmpia.htm)
- MMPI Research Project (http://www.umn.edu/mmpi/)