

© 2015, TextRoad Publication

ISSN: 2090-4274 Journal of Applied Environmental and Biological Sciences www.textroad.com

The Use of MMPI in Forensic Setting (Review Article)

Elham Fathi^{1*}, Maryam Soleimani², Abolfazl Hatami Varzaneh³

¹PhD student in counseling in Allameh Tabataba'i University. Tehran. Iran. ²M.A. student in counseling in Allameh Tabataba'i university, Tehran, Iran. ³PhD student in counseling in Allameh Tabataba'i University. Tehran. Iran.

Received: January 27, 2015 Accepted: March 31, 2015

ABSTRACT

Introduction: MMPI is an assessment instrument of personality. More than 100000 researches have been done on it. Because of psychometrics properties of this test like assessing the attitude of individual, it has been widely used (Pope, K. S., Butcher, J. N., & Seelen, J. 2006). The purpose of the present study is to examine the use of MMPI in forensic settings.

Methods: in order to gather the studies related to MMPI, English data bases like proquest, science direct, Scopus, Wiley, and Google scholar. Articles related to MMPI in forensic setting from 2000 to 2013 were gathered.

Results: the findings have been classified Into four classifications according to the purpose of the study which are: 1: the studies which have developed a new scale 2: the studies which have compared the validity scales related to this test 3: the studies which have compared the test or the scales with other tests or scales. 4: the studies which have studied the usefulness and psychometric properties of this inventory in different samples.

Conclusions: According to the classification mentioned, most of the studies have compared the validity scales of this test and most of them have confirmed the usefulness of this inventory.

KEY WORDS: Forensic setting, MMPI, MMPI-2

INTRODUCTION

Forensic psychological assessment consists of evaluation in forensic setting, with the purpose of helping the truth searcher. Psychological assessment is used for a range of assessments in family, criminal and civil courts. Psychological assessment is only one dimension of forensic assessment, but is an important part of it, and psychological tests are used by most of the forensic psychologists. The Minnesota Multiphasic Personality Inventory (MMPI) is the most widely used personality test in clinical practice. This test is a widely used personality assessment instrument for the assessment in forensic settings. Otto, for example, noted that "the MMPI-2 is the psychological testing instrument most frequently used in forensic treatment and evaluation contexts (Pope, Butcher, et al., 2006)

As mentioned, this test is one of the mostly used tests for objective assessment tests in forensic evaluations (Lees-Haley, Iverson, et al.,2002).

Several reasons, account for the wide applicability of the MMPI-2 in forensic assessments.

Firstly, it is used in many court cases to provide personality information of defendants or litigants, in which psychological adjustment factors are important in resolution of the case (Pope, Butcher, et al., 2006)

Secondly this test is relatively easy to administer, and is available in printed booklets, cassette tapes and computers. It usually takes between 1 and 1/2 hours for adults to complete and 1 hour for adolescents. It is a self-administer test, under carefully monitored conditions, by simply responding "T" (true) or "F" (false) to each item. The items are written so that individuals with a sixth-grade reading level can understand them. Thirdly, the MMPI, MMPI-2, and MMPI-A are relatively easy to score. The item responses for each scale are recorded on a profile sheet. Scoring is simple and can be delegated to staff to conserve more time. Computerized programs for scoring are available and enhance the scoring process. The objective scoring ensures reliability, which is a critical determination in forensic cases. The MMPI-2 have been largely used in other countries, and there are many translated versions of the MMPI and MMPI-2 available, including Iran which has been translated and standardized.

Fourthly, MMPI, MMPI-2, and MMPI-A scales possess high reliability. This well-established scale reliability is especially important in forensic application. MMPI-2 code types possess high stability when well-defined codes are used for interpretation

^{*} Corresponding Author: Elham Fathi, PhD student in counseling in Allameh Tabataba'i University. Tehran. Iran. Email: fathielham@ymail.com

Fifthly, MMPI, MMPI-2, and MMPI-A provide clear, valid descriptions of individual's problems, symptoms, and properties in a broadly accepted clinical language. Scale elevations and code-type descriptions provide a terminology that enables clinicians to describe test takers clearly (Pope, Butcher, et al., 2006).

2- Main contents

2-1-Categorizing the studies in forensic settings

In this review article, all studies found on this topic from 2000 to 2013 have been gathered and classified which are: 1: studies which focused on construction and new scale validation 2: the studies which compared the validity scales in this test 3: the studies which compared the test or the scales with other tests or scales. 4: the studies which studied the usefulness and psychometric properties in different samples.

2-1-1 construction and validation of new validity scales:

Some studies have focused on adding to the scales which are mentioned below: the scales developed are Fc scale, M-DFI scale, F PTSD scale, and Md Scale,

Construction of Fc scale: Megargee constructed a kind of F scale For MMPI-2 for forensic setting in clinical condition and called it the (Fc) scale and reported the results in article with this title "Accuracy of Megargee's Criminal Offender Infrequency (FC) Scale in detecting malingering among forensic examinees". In this study, Fc scale and 7 other validity scales of MMPI-2 were compared by gathering information from male inmates, who performed MMPI-2 and Structured Interview of Reported Symptoms (SIRS) in detecting malingering. The results indicated that Fc scale is useful in detecting malingering in forensic settings (Gassen, Pietz, et al., 2007).

Construction and validation of M-DFI scale: Bacchiochi, and Bagby (2006) in their study examined Diagnostic accuracy of the MMPI-2 Malingering Discriminant Function Index (M-DFI) in detection of malingering among inmates. This scale is clinically useful when trying to detect examinees who are cautioned about the indicators. The results demonstrated that although the M-DFI performed better than several individual indicators, results were mixed for combinations of indicators, and the M-DFI was not more successful than other existing indicators.

Development and initial validation of F PTSD scale: Infrequency-Posttraumatic Stress Disorder Scale (F PTSD) for the MMPI-2 was developed and initially validated with veterans with combat-related PTSD, have been performed on male combat veterans by Elhai, Ruggiero, et al. (2002). The results indicated that in comparison with previously established validity scales (F, Fb, and Fp), F PTSD was significantly less related to psychopathology and distress and better at discriminating fake from genuine PTSD.

Designing malingered depression (Md) Scale: Md scale was constructed to detect individuals who are knowledgeable about either depression or MMPI-2 detection strategies or attempt to malinger depressive symptoms on the MMPI-2. The results demonstrated that this scale is promising in detecting malingering depression (Steffan, Clopton, et al., 2003).

2-1-2- Comparison of the validity scales

In addition to the studies noted, other studies attempt to compare the validity scales, which are necessary in discriminating faking bad and exaggeration in forensic setting and can help us in choosing the appropriate scales. So, related studies are mentioned below:

Jones and Ingram (2011) in their study, demonstrated that newly developed scales of MMPI-2 and MMPI-2 Restructured Form (MMPI-2-RF) specifically designed to assess over-reporting of cognitive and/or somatic symptoms were more effective than the MMPI-2 F-family scales in predicting effort status on tests of cognitive functioning.

Another study Compared MMPI-2 validity scale scores of personal injury litigant and disability (Tsushima, Geling, et al., 2011). Five validity scales from MMPI-2, the Infrequency Scale (F), Infrequency-Psychopathology Scale (Fp), Symptom Validity Scale (FBS), Henry-Heilbronner Index (HHI) and Response Bias Scale (RBS) were evaluated in litigation patients (LP) and clinical patients (CP). The results demonstrated that RBS performed better than the other four scales in identifying LPs. Also RBS was the most significant predictor of being LP or CP.

Harp, Jasinski, et al., (2011) in their study examined MMPI-2-RF validity scales for detecting feigning and exaggeration of ADHD. Participants with and without ADHD were assigned to perform honestly or to feign or exaggerate deficits related to ADHD. MMPI-2-RF scale Fp-r showed potential for use in detection of malingered ADHD at a revised cut score, which was significantly lower than the cut score suggested in the test manual. The

researchers suggested that F-r, Fs, and FBS-r scales did not classify well, but should be assessed in future studies of malingered ADHD. Detection of exaggeration was consistently poorer than detection of feigning.

In a study with the purpose of detecting feigned head injury symptoms and the genuine ones, those who experienced injury of the head and participants who were asked to feign symptoms or answer honestly during a simulated forensic neuropsychological examination were compared. No significant effects for HI or the interaction between the HI and instruction set (IS) factors were noted on either clinical or selected validity scales (F, Fb, F (p), Ds2, FBS). However, the main effect of IS was significant for both clinical and validity scales .Most validity scales had perfect specificity rates but low to modest sensitivity, whereas FBS had both moderate sensitivity and specificity. Data analysis indicated that the F and Ds2 scales made a significant contribution independent of motivational tests to the identification of feigning during neuropsychological examination (Deart, Berry, et al., 2005)

Larrabee(2003 c) used five standard neuropsychological tests of Benton Visual Form Discrimination (VFD), Finger tapping (FT), WAIS-R Reliable Digit Span (RDS), Wisconsin Card Sorting Failure-to-Maintain Set (FMS), and the Lees-Haley Fake Bad Scale (FBS) from the MMPI-2, in order to detect malingering. The author concluded that "assessment of effort in medico legal settings must be multivariate, consequently lowering the chances of false positive identification errors in the assessment of malingering."

In a study with the purpose of discriminating malingered from genuine civilian PTSD, the validity of three MMPI-2 infrequency scales (F, Fp, and Fptsd) were examined. Analyses demonstrated F PTSD's incremental validity over F but not over Fp (Elhai, Naifeh, et al., 2004).

Rogers, Gillard, et al. (2011) In their study called "Effectiveness of the MMPI-2-RF validity scales for feigned mental disorders and cognitive impairment indicated that most MMPI-2-RF validity scales have limited effectiveness with Feigned Cognitive Impairments. However, FBS-r and RBS may be useful in conjunction with other clinical data for ruling out FCI for genuine neuropsychological consults.

Larrabee (2003 b), Examined the effectiveness of the traditional MMPI-2 validity scales, the Fake Bad Scale (FBS), and the Infrequency Psychopathology Scale (F(p)) with personal injury litigants. "The FBS was more sensitive to symptom exaggeration than F, Fb, and F(p). The definite and probable MND litigants also produced mean elevations on MMPI-2 scales 1, 3 and 7 that were significantly higher than those produced by various clinical groups including non-litigating severe closed head injury, multiple sclerosis, spinal cord injury, chronic pain, and depression. These data suggest that MMPI-2 profiles characteristic of malingered injury differ from those associated with malingered psychopathology.

"Examination of the new MMPI-2 Response Bias Scale (Gervais): Relationship with MMPI-2 validity scales". This research "examined relationships of the RBS with numerous MMPI-2 validity scales in a sample of 211 participants with secondary gain (SG) or no secondary gain (NSG). Of the validity scales observed, RBS yielded the largest effect size difference between groups (d = .65), followed closely by FBS (d = .60) and the L-scale (d = .51). Overall, RBS correlated most significantly (r = .74, p < .001) with FBS, but also showed significant correlations with most other validity scales for both groups. RBS further demonstrated significant correlations (p < .001) with all clinical scales except for Mf (Nelson, Sweet, et al., (2007).

The Discussion section notes that "using simulation and known-groups samples, results from the current study suggest that the MMPI-2-RF validity scales are useful in detecting symptom exaggeration associated with medico-legal settings (Wygant, Ben-Porath, et al., 2009).

This study concludes that the "superiority of the FBS in applied forensic settings could derive from its development in actual litigants and content reflective of non psychotic exaggerations. The FBS appears acceptable for use in applied forensic settings where persons seek compensation for nonpsychotic syndromes." The authors emphasize that "use of the FBS in courtroom settings should be guided by a number of considerations. High FBS scores should never be used as the sole basis for diagnosing feigned somatic and/or non psychotic emotional complaints. Lanyon and Almer (2001) recommend multimodal assessment of misrepresentation in addition to the MMPI-2. The clinician needs to combine FBS scores with other atypical indicators (e.g., from clinical history) to determine whether exaggeration is present (Greiffenstein, Baker, et al., 2004).

The article "Malingering in forensic neuropsychology: Daubert and the MMPI-2". Discusses the research addressing various MMPI-2 validity scales that are used to help evaluate malingering, such as VRIN, TRIN, L, F, K, F--K, F-sub(B), F(p), FBS (Fake Bad Scale), Total Obvious-Subtle, Ds, Dsr, and Ego Strength (Lees-Haley, Iverson, et al., 2002).

Nelson, Sweet, et al., (2006) did a Meta-Analysis of the MMPI-2 Fake Bad Scale. This meta-analysis examined "weighted effect size differences among the FBS and other commonly used validity scales (L, F, K, Fh, Fp, F-K, O-S, Ds2, Dsr2) in symptom over reporting and comparison groups. The largest grand effect sizes were observed for FBS (.96), followed by 0-S (.88), Dsr2 (.79), F-K (.69), and the F- scale (.63). Significant within-scale variability was observed for seven validity scales, including FBS (Q = 119.11, p <.001). Several subsequent

Fathi et al., 2015

FBS moderator analyses yielded moderate to large effect sizes and were statistically significant for level of cognitive effort, type of over reporting comparison group, and condition associated with over reporting. Findings suggest that the FBS performs as well as, if not superior to, other validity scales in discriminating over reporting.

In another meta-analysis Symptom Validity Scale (Fbs) was examined. The study was conducted to summarize the MMPI-2 FBS literature from 1991 to (2010) with substantial growth of more than a 50% increase in FBS studies identified since the Nelson et al. (2006) meta-analysis. The current FBS composite effect size was large (d¹/40.95) and stable relative to previous findings in 2006 (d¹/40.96). The cumulative FBS literature suggests that the scale continues to differentiate groups as well as, and under certain conditions superior to, other MMPI-2 validity scales (including all of the F-family scales). In particular, two factors those are particularly relevant to practicing neuropsychologists, effort status and TBI, substantially moderated FBS magnitudes. Although scales within the F family at times also showed moderate to large effect size differences related to effort and TBI, these were invariably lower than that of FBS (Nelson, Hoelzle, et al., 2010).

Kucharski, Johnsen, et al., (2004) Examined F (p) scale and the revised infrequency psychopathology scales in the detection of malingering. In this study, "167 federal defendants referred for evaluation by the court were administered the MMPI-2. The findings indicated that the criterion and the MMPI-2 validity scales as predictors revealed that neither the F (p) scale, nor the revised F (p) scale added to the F scale in predicting group membership. The F scale alone correctly classified 80.8% of cases with no incremental accuracy added by either F(p) or the revised F(p).

Sellbom, Wygant, et al. (2012), In their article "Utility of the MMPI-2-rf in detecting non-credible somatic complaints" noted that "The Fs and Fp-r scales were associated with the best differentiation between the three groups; the Fs scale was the most sensitive to somatic malingering, whereas the Fp-r scale was the most specific. Both scales were associated with high likelihood ratios in differentiating the somatic malingering group from the somatoform and medical illness groups. Although the FBS-r scale was overall the most sensitive in differentiating non-credible somatic complaints from genuine medical illness, it could not differentiate well between the somatic malingering and somatoform patient conditions. The MMPI-2-RF appears to have considerable promise in detecting individuals who feign physical health problems.

The goal of this investigation by Sellbom, Toomey, et al., (2010) was to determine the utility of the MMPI–2-RF validity scales in detecting malingering in a known-groups design. They found that, as expected, F-r and FP-r were the best scales in differentiating malingering and not malingering groups as determined by the SIRS.

In a study, the researchers examined the utility of the validity scales on MMPI-2 RF (Ben-Porath & Tellegen, 2008) to detect over reported psychopathology. In this study instructed students who tried to over report psychopathology were compared with psychiatric inpatients. The MMPI-2 RF validity scale Infrequent Psychopathology Responses best differentiated the simulation groups from the sample of patients, regardless of experimental condition. No other validity scale added consistent incremental predictive utility to Infrequent Psychopathology Responses in distinguishing the simulated from the genuine patients. Classification accuracy statistics confirmed the recommended cut scores in the MMPI-2 RF manual (Ben-Porath & Tellegen, 2008; Sellbom and Bagby, 2010).

In one Meta analysis, the authors conducted a study on 65 feigning studies and 11 diagnostic studies using the MMPI-2. For the rare-symptoms strategy, Fp (Cohen's d = 2.02) appeared especially effective across diagnostic groups; its cut scores showed greater consistency than most validity indicators. The data supported the F as an effective scale but questioned the usual use of Fb. Among the specialized scales, Ds appeared especially useful because of its sophisticated strategy, consistent cut score, and minimal false-positives." The authors provide guidelines for using MMPI-2 validity scales with various diagnostic groups (Rogers, Sewell, et al., 2003).

Steffan, Morgan, et al. (2010) in their study "A comparative analysis of MMPI-2 malingering detection models among inmates" examined several strategies, or models, for combining the MMPI-2 validity indicators to detect malingered psychiatric symptoms. Some scholars have recommended that an elevated F (Infrequency) score should be followed by the inspection of Fp (Infrequency–Psychopathology), whereas a meta-analysis indicated that Fp and Ds (Gough's Dissimulation Scale) should be examined. For correctional settings, one model of malingering suggests that F, Fp, and F - K (Gough's Dissimulation Index) should be inspected for one or more elevated scores. Results supported the sequential use of F and Fp in malingering detection (Steffan, Morgan, et al., 2010).

2-1-3- The comparison of the validity Scale of MMPI with other tests

There are other studies that have compared the validity scales of this test with the other tests, here we mention some of them.

Wygant, Anderson, et al. (2011) examined the validity scales of the MMPI-2-RF in relation to the structured malingering criteria developed to assess malingered neurocognitive dysfunction and pain-related disability. The

MMPI-2-RF over-reporting scales yielded large effect sizes in contrasting those in the probable/definite malingering groups from the incentive only groups. The largest effects were found for the Infrequent Responses and Gervais et al. Response Bias Scale, an experimental scale that can be scored on the MMPI-2-RF. Classification analyses were also utilized to examine various cut scores for the individual validity scales, as well as their use in combination. These results suggest that the MMPI-2-RF validity scales can be used to screen for malingering, as they demonstrated good sensitivity at lower cutoffs.

Blanchard, McGrath, et al. (2003) in their study compared the PAI and MMPI-2 as predictors of faking bad. this study asked 2 groups of college students to complete the MMPI-2 and PAI by feigning serious mental illness so that they would either (group 1) convince a jury that they should be judged "not guilty by reason of insanity" or (group 2) convince a mental health professional that they should be hospitalized. A linear combination of the MMPI-2 indicators were a little more effective than the PAI in identifying those faking their responses.

Heinze (2003) Examined findings from 66 men hospitalized as incompetent to stand trial. Tests included the MMPI-2, structured interview of Reported Symptoms (SIRS), M Test, the Atypical Presentation Scale (AP), and the Rey 15-Item Memory Test (RMT). "Overall, results proved the use of psychological testing in the detection of malingering of psychotic symptoms.

Kucharski, Thomas (2007) examined the Differentiation of mentally ill criminal defendants from malingerers. The results demonstrated that the MMPI-2 F, Fp and the newly developed Fc and the PAI NIM scales reasonably accurately differentiated the groups with acceptable sensitivity and specificity. Practical cutoff scores were identified for all but Fc.

Miller (2004) Examined the Use of the M-FAST with Criminal Defendants Incompetent to Stand Trial. "the M-FAST total score and items were compared with the SIRS and the fake-bad indicators of the MMPI-2. Results indicated good evidence of construct and criterion validity, demonstrated by t tests, receiver operating characteristics analysis, and high correlations between the M-FAST, SIRS, and the fake-bad indices on the MMPI-2. Tentative cut scores for the M-FAST total score and scales were examined and demonstrated high utility with the sample of criminal defendants incompetent to stand trial.

Larrabee (2003 a) in his study titled "Detection of Malingering Using Atypical Performance Patterns on Standard Neuropsychological Tests, Examined "Cut-off scores defining clinically atypical patterns of performance were identified for five standard neuropsychological and psychological tests: Benton Visual Form Discrimination (VFD), Fingertapping (FT), WAIS-R Reliable Digit Span (RDS), Wisconsin Card Sorting Failure-to-Maintain Set (FMS), and the Lees-Haley Fake Bad Scale (FBS) from the MMPI-2. Combining the derivation and cross-validation samples had a sensitivity of 87.8%, specificity of 94.4%, and combined hit rate of 91.6%." In closing the discussion section, the author emphasizes that "assessment of effort in medico legal settings must be multivariate. As shown in the present investigation, requiring multiple indicators of poor effort lowers the chances of false positive identification errors in the assessment of malingering.

Lally (2003) examined acceptable test for Use in Forensic evaluations by experts survey. The results indicated that the majority of the respondents rated the Structured Interview of Reported Symptoms (SIRS), Test of Memory Malingering, Validity Indicator Profile, Rey Fifteen Item Visual Memory Test, MMPI-2, PAI, WAIS-III, and Halstead-Reitan as acceptable. Most experts suggested the SIRS and the MMPI-2. The psychologists were divided between acceptable and unacceptable about using either version of the MCMI (II or III). They were also divided, although between acceptable and no opinion, for the WASI, KBIT, Luria-Nebraska, and Stanford-Binet-Revised. The diplomats viewed as unacceptable for evaluating malingering the Rorschach, 16PF, projective drawings, sentence completion, and TAT. The majority gave no opinion on the acceptability of the Malingering Probability Scale, M-Test, Victoria Symptom Validity Test, and Portland Digit Recognition Test.

Walters, Rogers, et al. (2008) examined Malingering as a categorical or dimensional construct: The latent structure of feigned psychopathology as measured by the SIRS and MMPI-2"The 6 non overlapping primary scales of the Structured Interview of Reported Symptoms (SIRS) were subjected to taxometric analysis in a group of 1,211 criminal and civil examinees in order to investigate the latent structure of feigned psychopathology. Both taxometric procedures used in this study, mean above minus below a cut (MAMBAC) and maximum covariance (MAXCOV), produced dimensional results. A subgroup of participants (n = 711) with valid Minnesota Multiphasic Personality Inventory-2 (MMPI-2) protocols were included in a second round of analyses in which the 6 non overlapping primary scales of the SIRS and the Infrequency (F), Infrequency Psychopathology (Fp), and Dissimulation (Ds) scales of the MMPI-2 served as indicators. Again, the results were more consistent with dimensional latent structure than with taxonic latent structure. On the basis of these findings, it is concluded that feigned psychopathology forms a dimension (levels of fabrication or exaggeration) rather than a taxon (malingering honest dichotomy) and that malingering is a quantitative distinction rather than a qualitative one.

Bagby, Nicholson, et al. (2002) examined the "Predictive capacity of the MMPI-2 and PAI validity scales and indexes to detect instructed and uninstructed feigning. The instructed ones had no effect on the ability of the participants to feign more successfully than those who received no instruction. For the MMPI-2, the Psychopathology F scale, or F-sub ((p)), proved to be the best at distinguishing psychiatric patients from research participants instructed to malinger. For the PAI, the Rogers Discriminant Function index (RDF) was clearly superior to the other PAI fake-bad validity indicators; neither the Negative Impression Management scale nor Malingering Index was effective at detecting malingered profiles in this study.

2-1-4-Examining the usefulness and validity of validity scales

In the fourth and last category, there are studies which have attempted to search for the usefulness and validity or the accuracy of the test. Here some of them are mentioned:

Butcher, Arbisib, et al. (2003) used MMPI-2's Psychometric Perspectives on Detection of Malingering of Pain. The authors emphasized on the advantage the MMPI-2 provides in the detection of response bias or malingering. A critical review of available MMPI-2 validity scales, and recommendations for use of these scales in the evaluation of patients with chronic pain was presented.

Ross, Millis, et al. (2004) Investigated the MMPI-2 Fake Bad Scale (FBS) in the detection of incomplete effort in mild head injury (MHI). The findings indicated that a cutoff score of 21 had a sensitivity of 90% and specificity of 90%, providing an overall correct classificatory rate of 90%. And a cutoff score only slightly higher than that originally reported by Lees-Haley et al. (1991) resulted in maximum sensitivity and specificity for this scale.

Bury and Bagby (2002) in their study called "Detection of feigned uncoached and coached PTSD with the MMPI-2 in a sample of workplace accident victims", asked Participants first took the MMPI-2 under standard conditions and then took it a second time, trying to fake PTSD. The participant's protocols were compared with protocols from claimants suffering from PTSD after a workplace accident. The findings suggested that "Participants given information about the validity scales were the most successful in avoiding detection as faking. F scales (F, F-sub (B), F-sub (p)), particularly F-sub(p), produced consistently high rates of positive and negative predictive power.

Steffan and Morgan (2008) examined "Diagnostic accuracy of the MMPI-2 Malingering Discriminant Function Index (M-DFI) in the detection of malingering among inmates"... The findings indicated that although the M-DFI performed better than several individual indicators, results were mixed for combinations of indicators, and the M-DFI did not perform better than different sets of existing indicators. These findings support existing strategies to detect malingering on the MMPI-2.

Moyer, Burkhardt, et al. (2002) in their study Gave information about PTSD diagnostic criteria to one group but not to the other before administering the MMPI-2. Both groups were asked to feign PTSD. "Results indicated that knowledge about the specific symptoms of PTSD did not create a more accurate profile, but rather was likely to produce more invalid profiles, detecting them as malingerers.

In a study with this title "Inaccuracies About the MMPI-2 Fake Bad Scale in the Reply by Ben-Porath, Greve, Bianchini, and Kaufman "Almost half of the 43 items on the FBS, when scored in the deviant direction, produce a differential responding between men and women of 5% or higher, with women more likely to respond in the deviant direction than men. Only one FBS item produces a similar difference in endorsement frequencies in which men are more likely to respond in the scored direction. Not surprisingly then, women produce higher scores than men on the FBS. As Ben-Porath et al. (2009, p. 76) admit, this gender effect was recognized early in the scale's history and 'led to adjustments in the recommended raw score cut offs for FBS (24 men; 26 women; Lees-Haley, 1992).' Yet, Ben-Porath and Tellegen (2007a, b) have more recently recommended the same raw score cutoffs for men and women on the FBS (i.e., above 22 and above 28). The authors noted that the practical outcome of this recommendation is that the interpretive statement that an individual's FBS score raises "very significant concerns about the validity of self-reported symptoms" (Ben-Porath and Tellegen, 2007a, b) occurs at a T score equivalent of 87 for women, but 95 for men, almost a full standard deviation lower for women, thus lowering the threshold for women to be identified as potentially malingering. Ben-Porath et al. (2009) ignored this concern (Ben-Porath, Greve, et al., 2009; Williams, Butcher, et al., 2009).

The purpose of the study of Nelson, Parsons, et al., (2006) was to demonstrate concordance between T-FBS and E-FBS scores, and to further demonstrate their specificities in the current clinically referred epilepsy sample. As predicted, E-FBS scores correlated very highly (.78) with T-FBS scores, with T-FBS/E-FBS correspondence being especially high for women (.85) compared to men (.62).

Flitter, Elhai, et al., (2003) Examined MMPI-2 F score patterns for women seeking therapy for their child sex abuse. Self-report measures of dissociation, posttraumatic stress, depression, and family environment individually correlated significantly with F, and collectively accounted for 40% of its variance. Dissociation was the strongest

predictor. Findings suggest that high F elevations may reflect genuine problem areas often found among child sex abuse victims, rather than symptom over reporting.

Greiffenstein (2010) in his article noted that MMPI-2-FBS is a standard MMPI-2 validity scale measuring overstatement of somatic distress and subjective disability. Some critics assert the MMPI-2-FBS misclassifies too many medically impaired persons as malingering symptoms. This study tests the assertion of malingering misclassification with a large sample of 345 medical inpatients undergoing sleep studies that standardly included MMPI-2 testing. The variables included standard MMPI-2 validity scales (Lie Scale [L], Infrequency Scale [F], K-Correction [K]; FBS), objective medical data (e.g., body mass index, pulse oximetry), and polysomnographic scores (e.g., apnea/hypopnea index). The results showed the FBS had no substantial or unique association with medical/sleep variables, produced false positive rates <20% (median = 9, range = 4-11), and male inpatients showed marginally higher failure rates than females. The MMPI- 2-FBS appears to have acceptable specificity, because it did not misclassify as biased responders those medical patients with sleep problems, male or female, with primary gain only (reducing sickness). Medical impairment does not appear to be a major influence on deviant MMPI-2-FBS scores."

The authors in a study titled"MMPI-2 validity scale characteristics in a correctional sample" Examined forms of faking on the MMPI-2 among inmates. "Overall, approximately 79% of the study participants had valid profiles. Of the entire study sample, 11.3% produced content-nonresponsive profiles, and 9.4% produced content-responsive faking profiles. African Americans produced a higher proportion of content-nonresponsive profiles than Caucasians, and women were slightly more likely than men to nonresponsive produce content-responsive faking profiles (McNulty, Forbey, et al., (2003)

Butcher, Gass, et al., (2009) examined the Potential for Bias in MMPI-2 Assessments Using the Fake Bad Scale (FBS). They noted that the FBS does not appear to be a sufficiently reliable or valid test for measuring 'faking bad. Potential for bias against women, those with disabilities and physical illness, psychiatric inpatients, individuals exposed to highly traumatic situations, and those motivated to present themselves in a favorable light. The samples used to develop the FBS are not broadly representative of the populations evaluated by the MMPI-2, nor are its criteria used to define malingering objective and replicable. There is insufficient evidence of its psychometric reliability or validity, and there is no consensus about appropriate cut-off scores or use of norms.

A study called "Psychometric Perspectives on Detection of Malingering of Pain: Use of the MMPI-2" presents "a rationale for the use of the MMPI-2 in the assessment of chronic pain with an emphasis on the advantages of the MMPI-2 in the detection of response bias or malingering. A critical review of available MMPI-2 validity scales is presented, and recommendations for use of these scales in the evaluation of patients with chronic pain are made (Arbisi, and Butcher, 2004)

Weiss, Bell, et al., (2010) used the MMPI-2 Restructured Clinical (RC) scales in order to detect criminal malingering. Students as participants were given the MMPI-2 twice. One administration was conducted according to the MMPI-2 manual, and the other was given with malingering instructions specific to a prison setting. Results showed that, the participants achieved higher MMPI-2 scores in the malingering setting. Also, participants achieved higher scores overall on the Basic scales and participants achieved higher scores on the Basic Scales in the malingering condition than on the RC scales in that condition. The results supported prior research, indicating that malingerers produce elevated RC profiles. However, the present results also suggest that the Basic scales may be more effective in detecting malingerers.

3- Conclusion

In this study, the studies have been classified into four classifications. In the first category, the purpose of the researchers was the development of a new scale in forensic setting that the results indicated that 4 scales have been developed and some of them were validated. These scales are Fcscale, M-DFI() and F PTSD and MDscale. As was noted before, all these scales added to the usefulness of this inventory, and had a high capacity of discrimination and predictity (Gassen, Pietz, et al. 2007; Bacchiochi and Bagby 2006; Elhai, Ruggiero, et al. 2002; Steffan, Clopton, et al. 2003). Furthermore, there are other studies which have compared the validity scales of MMPI and MMPI-2 (Jones and Ingram, 2011; Tsushima, Geling, et al. 2011; *Harp, Jasinsk, et al. 2011;* Dearth, Berry, et al. 2005; Larrabee, 2003; Elhai, Naifeh, et al. 2004; Rogers, Gillard, et al. 2011; Larrabee, 2003; Nelson, Sweet, et al. 2007; Wygant, Ben-Porath, et al. 2009, Greiffenstein, Baker, et al. 2004; Lees-Haley, Iverson, et al. 2002; Nelson, Sweet, et al. 2006; Kucharski, Johnsen, et al. 2003). Most of the studies have been done in this category, which shows the importance of such studies. The other classification of the studies compared this test with other tests often in diagnostic fields. The findings often shows the Relative advantages of this test to other tests like Personality Assessment Inventory (PAI) and Structured Malingering Criteria (Bagby, Nicholson, et al. 2002; Blanchard,

McGrath, et al. 2003; Wygant, Anderson, et al. 2011). However some studies suggest that assessment in forensic setting should be done as multimodels (Larrabee, 2003a; Larrabee, 2003b; Larrabee 2003c). in the last category, the studies have examined the accuracy, sensitivity and properties of this test. Some studies (Butcher, Arbisib, et al. 2003; Butcher, Gass, et al. 2009] criticized MMPI and questioned its usefulness. However Ben-porath, Greve, et al. (2009) reacted to their criticism and gave response to it. There are some other studies which stated that some scales should be used with caution(Butcher, Arbisib, et al. 2003). But most studies confirmed the psychometric properties of this instrument (Bury & Bagby, 2002; Steffan, & Morgan, 2008; Moyer, Burkhardt, et al. 2002; Williams, Butcher, et al. 2009; Kucharski, & Thomas, 2007; Kucharski, Johnsen, et al. 2004; Flitter, Elhai, et al. 2003; Greiffenstein, 2010; Ben-Porath, Greve, et al. 2009; McNulty, Forbey, et al. 2003; Arbisi and Butcher, 2004; Weiss, Bell, et al. 2010; Schroeder, Baade, et al. 2012). Finally we can conclude that years of research on this inventory, proves that in spite of the limitations of it, can be useful for application in forensic settings and increase of objectivity.

4- REFERENCES

- Arbisi, P., and Butcher, J. (2004). Psychometric Perspectives on Detection of Malingering of Pain: Use of the Minnesota Multiphasic Personality Inventory-2. *Clinical Journal of Pain*, vol. 20, #6, pages 383-391.
- Bacchiochi, J. R., and Bagby, M.(2006). Development and Validation of the Malingering Discriminant Function Index for the MMPI-2. *Journal of Personality Assessment*, Vol. 87, No. 1, pages 51-61.
- Bagby, M., Nicholson, R., Bacchiochi, J., Ryder, A., & Bury.A. (2002).Predictive capacity of the MMPI-2 and PAI validity scales and indexes to detect coached and uncoached feigning. *Journal of Personality Assessment*, pages 69-86.
- Ben-Porath, Y. S., Greve, K. W., Bianchini, K. J., & Kaufmann, P. M. (2009). The MMPI-2 Symptom Validity Scale (FBS) Is an Empirically Validated Measure of Overreporting in Personal Injury Litigants and Claimants: Reply to Butcher et al. *Psychological Injury & Law.* vol. 1, #5.
- Blanchard, D., McGrath, R., Pogge, D., & Khadivi, A.(2003). Comparison of the PAI and MMPI-2 as predictors of faking bad. *Journal of Personality Assessment*, 80(2), pages 197-205.
- Bury, A., & Bagby, M.(2002). Detection of feigned uncoached and coached posttraumatic stress disorder with the MMPI-2 in a sample of workplace accident victims. *Psychological Assessment*, 14(4), pages 472-484.
- Butcher, J. N., Arbisib, P. A., Atlisa, M. M., and John, L. (2003). Construct validity of the Lees-Haley Fake Bad Scale:Does this scale measure somatic malingering and feigned emotional distress?, *Clinical Neuropsychology*, 18 (2003), 473-485.
- Butcher, J. N., & Gass, C., S., Cumella, E., Kally, Z. & Williams, C.L., (2009). Potential for Bias in MMPI-2 Assessments Using the Fake Bad Scale (FBS). *Psychological Injury & Law. February*, 2009, vol. 1, #3.
- Dearth,C., Berry, D., Vickery, C., Vagnini, V., Baser, R., Orey, S., & Cragar, D.(2005). Detection of feigned head injury symptoms on the MMPI-2 in head injured patients and community controls. *Archives of Clinical Neuropsychology*, vol. 20, #1, pages 95-110.
- Elhai, J., Naifeh, J., Zucker, I., Gold, S., Deitsch, S., & Frueh, C. (2004). Discriminating malingered from genuine civilian posttraumatic stress disorder: A validation of three MMPI-2 infrequency scales (F, Fp, and Fptsd). *Assessment*, vol. 11, #2, page 139-144.
- Elhai, J., Ruggiero,K., Frueh, C., Beckham, J., Gold, P., & Feldman, M. (2002). Infrequency-Posttraumatic Stress Disorder Scale (Fptsd) for the MMPI-2: Development and Initial Validation With Veterans Presenting With Combat-Related PTSD. *Journal of Personality Assessment*, vol. 79, #3, pages 531-549.
- Flitter, J., Elhai, J., & Gold, S. N.(2003). MMPI-2 F scale elevations in adult victims of child sexual abuse. *Journal* of *Traumatic Stress*, vol. 16, #3, pages 269-274.
- Gassen, M. D., Pietz, C. A., Spray, B. J., & Denney, R. L. (2007). Accuracy of Megargee's Criminal Offender Infrequency (FC) Scale in detecting malingering among forensic examinees. *Criminal Justice & Behavior*, vol. 34, #4, pages 493-504.
- Greiffenstein, F., Baker, J., Axelrod, B., Peck, E., and Gervais, R. (2004). Fake Bad Scale and MMPI-2 F-Family in Detection of Implausible Psychological Trauma Claims. *Clinical Neuropsychologist*, vol. 18, #4, pages 573-590.
- Greiffenstein, M. F. (2010). The MMPI-2 Symptom Validity Scale (FBS) not influenced by medical impairment: A large sleep center investigation. *Assessment*, 17(2), pages 269-277.
- Greve, K., Bianchini, J., Brennan, A., and Heinly, M. Sensitivity and Specificity of the MMPI-2 Validity Scales and Indicatorsto Malingered Neurocognitive Dysfunction in Traumatic Brain Injury. *Clinical Neuropsychologist*, in press.

- Harp, J. P., Jasinski, L. J., et al. (2011). Detection of malingered ADHD using the MMPI-2-RF. *Psychological Injury and Law*, 4(1), pages 32-43.
- Heinze, M.(2003). Developing sensitivity to distortion: Utility of psychological tests in differentiating malingering and psychopathology in criminal defendants. *Journal of Forensic Psychiatry & Psychology*, vol. 14, #1, pages 151-177.
- Jones, A., and Ingram, M. V. (2011). A comparison of selected MMPI-2 and MMPI-2-RF validity scales in assessing effort on cognitive tests in a military sample. *The Clinical Neuropsychologist*, 25(7), pages1207-1227.
- Kucharski, L. T., & Thomas, D. S.(2007). Differentiation of mentally ill criminal defendants from malingerers on the MMPI-2 and PAI. *American Journal of Forensic Psychology*, vol. 25, #3, pages 21-42.
- Kucharski, T., Johnsen, D., & Procell, S. (2004). Utility of the MMPI-2 infrequency psychopathology F(p) and the revised infrequency psychopathology scales in the detection of malingering. *American Journal of Forensic Psychology*, vol 22, #1, pages 33-40.
- Lally, S. (2003). What Tests Are Acceptable for Use in Forensic Evaluations? A Survey of Experts. Professional Psychology, *Research & Practice*, vol. 34, #5, pages 491-498.
- Larrabee, G.(2003). Detection of Malingering Using Atypical Performance Patterns on Standard Neuropsychological Tests. *Clinical Neuropsychologist*, vol. 17, #3, pages 410-425.
- Larrabee, G.(2003). Detection of Symptom Exaggeration with the MMPI-2 in Litigants with Malingered Neurocognitive Dysfunction. *Clinical Neuropsychologist*, vol. 17, #1, pages 54-68.
- Larrabee, G. (2003). Exaggerated MMPI-2 symptom report in personal injury litigants with malingered neurocognitive deficit. *Archives of Clinical Neuropsychology*, vol. 18, #6, pages 673-686.
- Lees-Haley, P., Iverson, G., Lange, R., Fox, D., & Allen, L. (2002). Malingering in forensic neuropsychology: Daubert and the MMPI-2. *Journal of Forensic Neuropsychology*, 3, pages 167-203.
- McNulty, J., Forbey, J., Graham, J., Ben-Porath, Y., Black, M., Anderson, S., & Burlew, K. (2003). MMPI-2 validity scale characteristics in a correctional sample. *Assessment*, vol. 10, #3, pages 288-298.
- Miller, H. (2004). Examining the Use of the M-FAST With Criminal Defendants Incompetent to Stand Trial. International Journal of Offender Therapy & Comparative Criminology, vol. 48, #3, pages 268-280.
- Moyer, D., Burkhardt, B., & Gordon, R. (2002). Faking PTSD from a motor vehicle accident on the MMPI-2. *American Journal of Forensic Psychology*, pages 81-89.
- Nelson, N. W., Parsons, T. D., Grote, C. L., Smith, C. A., & Sisung, J.,R.(2006) .MMPI-2 Fake Bad Scale: Concordance And Specificity Of True And Estimated Scores. *Journal of Clinical and Experimental Neuropsychology*, vol. 28, #1, pages 1-12.
- Nelson, N., Sweet, J., & Demakis, G. (2006).Meta-Analysis of the MMPI-2 Fake Bad Scale: Utility in Forensic Practice. *Clinical Neuropsychologist*, vol. 20, #1, pages 39-58.
- Nelson, N., Sweet, J., & Heilbronner, R. (2007). Examination of the new MMPI-2 Response Bias Scale (Gervais): Relationship with MMPI-2 validity scales. *Journal of Clinical and Experimental Neuropsychology*, Vol 29(1), pages 67-72.
- Nelson, N. W., Hoelzle, J. B., Sweet, J. J., Arbisi, P. A., & Demakis, G. J. (2010).Updated Meta-Analysis of the MMPI-2 Symptom Validity Scale (Fbs): Verified Utility in Forensic Practice. *Clinical Neuropsychologist*, vol. 24, pages 201-724.
- Pope, K. S., Butcher, J. N., & Seelen, J. (2006). MMPI/MMPI-2/MMPI-A in court assessment: a practical guide for expert witnesses and attorneys (3rd ed.). Washington, D.C.: American Psychological Association.
- Rogers, R., Gillard, N. D., et al.(2011). Effectiveness of the MMPI-2-RF validity scales for feigned mental disorders and cognitive impairment: A known-groups study. *Journal of Psychopathology and Behavioral Assessment*, 33(3), pages 355-367.
- Rogers, R., Sewell, K., Martin, M., & Vitacco, M. (2003).Detection of feigned mental disorders: A meta-analysis of the MMPI-2 & malingering. Assessment, 10(2), pages 160-177.
- Ross, S. R., Millis, S. R., Krukowski, R. A., Putnam, S. H., and Adams, K. M.(2004). Detecting Incomplete Effort on the MMPI-2: An Examination of the Fake-Bad Scale in Mild Head Injury. *Journal of Clinical & Experimental Neuropsychology*, vol. 26, #1
- Schroeder, R. W., Baade, L. E., et al. (2012). Validation of MMPI-2-RF Validity Scales in criterion group neuropsychological samples. *The Clinical Neuropsychologist*, 26(1), pages 129-146.
- Sellbom, M., and Bagby, R. M. (2010). Detection of overreported psychopathology with the MMPI-2 RF form validity scales. *Psychological Assessment*, 22(4), pages 757-767.
- Sellbom, M., Wygant, D., et al. (2012). Utility of the MMPI-2-rf in detecting non-credible somatic complaints. *Psychiatry Research*, 197(3):295-301

- Sellbom, M. Toomey, J.A., Wygant, D., Kucharski, L.T. & Duncan.S. (2010). Utility of the MMPI–2-RF (Restructured Form) validity scales in detecting malingering in a criminal forensic setting: A known groups design. *Psychological Assessment*, vol. 22, #11, pages 22-31.
- Steffan, J., Clopton, J., & Morgan, R. (2003).MMPI-2 scale to detect malingered depression (Md Scale)". Assessment, vol. 10, #4, pages 382-392.
- Steffan, J., & Morgan, R.(2008). Diagnostic accuracy of the MMPI-2 Malingering Discriminant Function Index in the detection of malingering among inmates. *Journal of Personality Assessment*, vol. 90, #4, pages 392-398.
- Steffan, J. S., Morgan, R. D., et al. (2010). A comparative analysis of MMPI-2 malingering detection models among inmates. Assessment. 17(2), pages 185-196.
- Tsushima, W. T., Geling, O., et al. (2011). Comparison of MMPI-2 validity scale scores of personal injury litigants and disability claimants. *The Clinical Neuropsychologist*, 25(8), pages 1403-1414
- Walters, G. D., Rogers, R., Berry, D. T. R., Miller, H. A., Duncan, S. A., McCusker, P. J., Payne, J W., Granacher p.(2008). Malingering as a categorical or dimensional construct: The latent structure of feigned psychopathology as measured by the SIRS and MMPI-2. *Psychological Assessment*, vol. 20, #3, pages 238-247
- Weiss, P., Bell, K., & Weiss, W. (2010). Use of the MMPI-2 Restructured Clinical (RC) scales in detecting criminal malingering. *Journal of Police and Criminal Psychology*, vol 25, #1, pages 49-55.
- Williams, C. L., & Butcher, J. N., Gass, C. S., & Cumella, E., & Kally, Z. (2009).Inaccuracies About the MMPI-2 Fake Bad Scale in the Reply by Ben-Porath, Greve, Bianchini, and Kaufman. *Psychological Injury & Law*, vol. 2, #2, pp. 182-197.
- Wygant, D. B., Anderson, J. L., et al.(2011). Association of the MMPI-2 restructured form (MMPI-2-RF) validity scales with structured malingering criteria. *Psychological Injury and Law*, 4(1), pages 13-23.
- Wygant, D. B., Ben-Porath, Y. S., Arbisi, P. A., Berry, D. T. R., Freeman, D. B., & Heilbronner, R. L. (2009). Examination of the MMPI-2 Restructured Form (MMPI-2-RF) Validity Scales in Civil Forensic Settings: Findings from Simulation and Known Group Samples. *Archives of Clinical Neuropsychology*, 27, pages 671-680.