The Treatment Utility of the MMPI-2 In Treatment Planning

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Abstract
This study examined the treatment utility of the Minnesota Multiphasic Personality Inventory-2 (MMPI-2) as an aid in treatment planning. Treatment utility in the context of treatment planning refers to the degree to which pretreatment assessment is shown to contribute to beneficial therapeutic outcome (Hayes et al., 1987). In the present study, archival data were examined for 56 clients in an outpatient university training clinic. Matched pairs were identified in which one of the clients received the MMPI-2 during the early portion of therapy, and the other client did not receive the measure at any time. Upon comparing treatment outcomes for the two groups, there were no significant differences in symptom reduction between clients who did and did not complete pretreatment assessment with the MMPI-2. This result is consistent with a general lack of evidence for the treatment utility of the MMPI in previous research. Future research might best consider whether client or situational variables moderate any treatment utility of MMPI-2 data.

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THE TREATMENT UTILITY
OF THE MMPI-2
IN TREATMENT PLANNING

A THESIS
SUBMITTED TO THE FACULTY
OF
SCHOOL OF PROFESSIONAL PSYCHOLOGY
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APPROVED.

[Signature]
James E. Lane, Ph.D.
ABSTRACT

This study examined the treatment utility of the Minnesota Multiphasic Personality Inventory-2 (MMPI-2) as an aid in treatment planning. Treatment utility in the context of treatment planning refers to the degree to which pretreatment assessment is shown to contribute to beneficial therapeutic outcome (Hayes et al., 1987). In the present study, archival data were examined for 56 clients in an outpatient university training clinic. Matched pairs were identified in which one of the clients received the MMPI-2 during the early portion of therapy, and the other client did not receive the measure at any time. Upon comparing treatment outcomes for the two groups, there were no significant differences in symptom reduction between clients who did and did not complete pretreatment assessment with the MMPI-2. This result is consistent with a general lack of evidence for the treatment utility of the MMPI in previous research. Future research might best consider whether client or situational variables moderate any treatment utility of MMPI-2 data.
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INTRODUCTION

Psychological assessment is the distinguishing service provided by clinical psychologists, separating members of the discipline from members of related fields such as social work, counseling psychology, or even psychiatry. Assessment is considered a core competency of clinical psychologists. Practitioners use assessment instruments for varied purposes. Meehl (1959) delineated three broad functions of clinical assessment: 1) formal diagnosis (the attachment of categorical labels); 2) prognosis; and 3) personality assessment, including phenotypic and genotypic descriptions of personality. Within the area of prognosis, specific uses include prediction of response to therapy, prediction of clinically-relevant behaviors, and treatment planning. A final clinical application of assessment is the evaluation of treatment outcomes through the test-retest method.

The present focus is on the usage of assessment instruments for treatment planning. Psychological treatment planning has received increasing attention in recent years. Makover (1992) defined treatment planning as “an organized conceptual effort to design a program outlining in advance the specific steps by which the therapist will help the patient recover from his or her presenting dysfunctional state” (p. 338). The apparent benefits of assessment as an aid in the treatment planning process are numerous: Empirical assessment can contribute to accurate diagnosis, identify client characteristics and needs, suggest appropriate treatment modality, and evaluate a client’s readiness for therapy. Butcher (1990) emphasized the role of assessment in providing feedback to the client: “Psychological test results provide a valuable framework from which clients can
obtain information about themselves” (p. 5). Pretreatment assessment has also been
demonstrated to contribute to a positive working alliance between therapist and client
(Ackerman, Hilsenroth, Baity, & Blagys, 2000; Hilsenroth, Peters, & Ackerman, 2004).
Researchers have suggested that with the increasing diversity and specificity of
empirically supported treatments (ESTs), the need for guidance by assessment
instruments is more critical than ever (Nelson-Gray, 2003; Hayes, Nelson, & Jarrett,
1987).

Challenges to Psychological Assessment

Based on the evidence in favor of empirical assessment as an aid in treatment
planning, authors in the past decade predicted that comprehensive pretreatment
assessment would take on an even greater role (Moreland, Fowler, & Honaker, 1994;
Strupp, 1990). However, the predicted trend has failed to materialize (Ben-Porath, 1997).
Several factors appear to be responsible for psychologists’ decreasing usage of
comprehensive assessment methods. The most frequently cited factor is the current
managed-care system. As Acklin (1996) bluntly stated, “the climate for traditional
personality assessment in the United States has changed for the worse.” Psychological
assessment is often viewed as a candidate for elimination in the interest of cost-
containment (Ben-Porath, 1997).

Eisman et al. (2000) discussed several challenges faced by psychologists who
wish to use assessment techniques. A prevailing view among managed care organizations
(MCOs) is that psychological assessment is unnecessary for proper diagnosis and
treatment. MCOs have relied instead on diagnostic interviews to serve such purposes.
Furthermore, psychologists have experienced difficulty receiving preauthorization for
assessment services and reimbursement following assessment. Clinical decisions about which instruments to use are often made by individuals who are not psychologists or do not have expertise in the area of assessment.

Based on the recent threats to the practice of psychological assessment, researchers have identified research regarding the validation of testing and assessment procedures as a critical priority for the field (Meyer, 2006). As part of a work group commissioned by the American Psychological Association, Meyer et al. (2001) summarized evidence from over 125 meta-analyses, concluding that psychological test validity is strong and compelling. However, psychologists have generally been unsuccessful in communicating the efficacy of assessment procedures to individuals outside of the field (Butcher, 1997).

Treatment Utility

The “era of accountability” dictated by the current managed care environment necessitates that psychologists demonstrate not only the statistical reliability and validity of assessment measures, but also the practical utility of such techniques. Investigation of the practical benefits of assessment will allow psychologists to build a science of assessment (Hunsley, 2002), and to provide evidence regarding the costs and benefits of psychological assessment, as called for by Yates and Taub (2003). The need to demonstrate the practical advantages of assessment has long been recognized. Meehl (1959) proposed four levels of validity for the clinical application of assessment data. The first level concerns the accuracy of the statements which can be reliably derived from a test. The second level considers the extent to which a test provides accurate data which cannot be easily obtained through more cost-efficient methods. The third level is related
to timeliness: how much earlier does a test enable us to derive conclusions, as compared to nonpsychometric information-gathering methods? Finally, and most importantly, to what extent does the timely information provided by the test help us in treating the patient? Meehl stated that this last form of test validity is "ultimately the practically significant one by which the contribution of our techniques must be judged" (p. 107). He noted that no empirical evidence of the time demonstrated such validity. However, Meehl believed it to be "well within the capacity of available research methods and clinical facilities to determine what, if any, is the pragmatic advantage of a personality assessment being known in advance by the therapist" (p. 116).

Twenty eight years following Meehl’s (1959) seminal paper, Hayes, Nelson, and Jarrett (1987) renewed the call for research investigating the effects of assessment on treatment outcome. The authors proposed the phrase treatment utility to refer to "the degree to which assessment is shown to contribute to beneficial treatment outcome" (p. 963). They acknowledged that such research continued to be rare, but hypothesized that the field of clinical psychology was "intellectually ready to tackle the treatment utility of assessment" (p. 965).

Treatment utility relates closely to incremental validity. Research on the incremental validity of a test evaluates whether the addition of data obtained by the test to other information leads to an increase in validity (Garb, 2003). In the context of treatment planning, psychologists wishing to use a certain test should be able to demonstrate that the addition of that test to other forms of data collected at the beginning of treatment (such as diagnostic interviews or brief symptom measures) results in some improvement. Such improvement may be observed as increased diagnostic accuracy, increased
predictive ability, or improved treatment outcome. It is this latter criterion that is associated with treatment utility. Specifically, treatment utility may be considered a specific subtype of incremental validity, in which an assessment procedure is demonstrated to contribute to beneficial treatment outcome beyond that achieved when the procedure is not used, with other conditions held constant.

Treatment utility may be evaluated through several research designs. Three general methodologies have been identified (Hayes, Nelson, & Jarrett, 1987; Nelson-Gray, 2003). In a manipulated assessment design, subjects are divided randomly into two or more groups, and either the collection or the availability of assessment data is varied between the groups. A second experimental methodology is manipulated use of assessment information, in which the same assessment information is available for all subjects, but the researcher manipulates how the information is used between groups. In a third experimental methodology, obtained differences, subjects are divided into groups nonrandomly on the basis of assessment differences. All subjects receive the same treatment, and treatment utility is demonstrated if outcome differs between the two groups.

Given the numerous articles that have been written to emphasize the importance of treatment utility research, and the well-defined methodologies available to conduct it, it is somewhat surprising that studies demonstrating the treatment utility of assessment continue to be rare. Nelson-Gray (2003) concluded a recent review of treatment utility research with the assertion that, for most assessment procedures and devices, the question of treatment utility has not been answered. Finn and Tonsager (1997) lamented that “we must conclude, as have others, that empirical evidence for the treatment utility of
assessment is weaker than any of us might want" (p. 375). They noted that even comprehensive reviews have “revealed no replicated studies in which pretreatment assessment... yielded significantly better outcomes than treatments conducted without the benefit of psychological assessment” (p. 375). The lack of positive findings for treatment utility may simply reflect a lack of research in the area. Meyer (2003) noted that “almost no research has tried to determine whether clinical personality assessment helps the clients who receive an evaluation” (p. 2).

Treatment Utility and the MMPI-2

This study will examine the treatment utility of the restandardized Minnesota Multiphasic Personality Inventory (MMPI-2; Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989). The original MMPI was published in 1943 (Hathaway & McKinley, 1943) as a self-report measure designed to increase diagnostic accuracy. Since that time it has become the most widely-researched measure in the history of clinical psychology. The MMPI-2, published in 1989, continues to generate research interest. It is also the most widely used personality inventory in clinical practice (Lima et al., 2005). Obtained codetypes on the MMPI-2 have been demonstrated to correlate highly with codetypes on the original MMPI (Arbisi, Ben-Porath, & McNulty, 2003; Greene, Gwin, & Staal, 1997). Therefore, for the purpose of this paper, no distinction will be made between data based on the original MMPI and those based on the MMPI-2.

The MMPI is frequently used in treatment planning. The topic has been treated in numerous book chapters, articles, and volumes (e.g., Butcher, 1990; Greene & Clopton, 2004; Klump & Butcher, 1997; Perry, Miller, & Klump, 2006). Among objective personality instruments, the MMPI is especially well-suited for use in treatment planning.
One reason is that the MMPI is rooted in differential diagnosis; it is commonly accepted that accurate diagnosis is essential to effective treatment. Furthermore, the extensive body of research data regarding MMPI codetypes has been summarized in several “cookbooks” (e.g., Friedman, Lewak, Nichols, & Webb, 2001), which facilitate the rapid generation of meaningful hypotheses about clients. Finally, the MMPI-2 includes a Negative Treatment Indicators (TRT) scale, which can inform the therapist regarding clients’ motivation and willingness to engage in therapy.

Perry, Miller, and Klump (2006) identified several benefits of using the MMPI-2 in treatment planning. Benefits to the therapist include the breadth of information that can be gathered (and interpreted) in relatively little time, guidance in choosing the best treatment modality for an individual, and the opportunity to observe client reactions to MMPI feedback. Perry and colleagues suggested that the MMPI-2 can serve as a useful resource for psychologists to use in communicating with insurance companies and to justify treatment decisions. Suggested benefits to the client included the identification of problem areas of which the client is not completely aware, and the development of therapeutic alliance during assessment.

A tremendous body of research supports the use of the MMPI in treatment planning and evaluation. Rouse, Sullivan, and Taylor (1997) compiled a bibliography of over 1000 studies in which the MMPI demonstrated utility in the context of various treatment modalities, including cognitive-behavioral and psychodynamic, and in the treatment of various conditions. However, most of the studies cited provide only indirect evidence for the treatment utility of the MMPI. For example, the MMPI has evidenced ability to predict treatment outcome by distinguishing among differentially-responding
groups (Belding, Iguchi, Morral, & Husband, 1998; Chisholm, Crowther, & Ben-Porath, 1997). Further studies have demonstrated that access to MMPI data increased the accuracy of clinical decisions and diagnosis (Blais, Hilsenroth, Castlebury, Fowler, & Baity, 2001; Schwartz & Wiedel, 1981; Trull, Useda, Costa, & McCrae, 1995). Although such studies demonstrate the usefulness of the MMPI in treatment planning, they do not provide evidence that treatment outcome itself was improved through use of the MMPI.

As with evidence for the treatment utility of psychological assessment in general, there is little empirical evidence demonstrating significantly better outcomes in psychotherapy for patients whose treatment was guided by the MMPI. Perry, Miller, & Klump (2006) concluded a recent chapter on treatment planning with the MMPI-2 by noting that “of particular benefit would be large-scale, randomized, controlled studies in which treatment outcomes could be objectively compared for patients whose courses of therapy was guided by MMPI-2 test results and for those whose courses of therapy were not influenced by such test findings” (p. 164).

Therapeutic Assessment

The few studies that have provided direct treatment utility evidence for the MMPI have incorporated Finn’s (1996) model of therapeutic assessment (TA). In TA, assessment is seen as a short-term intervention with the potential to effect therapeutic change. Clients are engaged as collaborators in the assessment process and are provided with extensive feedback following assessment. Finn and Tonsager (1997) contrasted the TA model with the traditional “information-gathering model,” in which clinicians use assessment techniques primarily to gather data. The data is interpreted and recommendations are provided based on the clinician’s unilateral decisions deduced from
the assessment results. The information-gathering model includes an emphasis on standardized administration, in order to allow for nomothetic interpretations. The TA model, in contrast, considers subjective feelings on the part of the examiner when meeting with the individual being tested. As a result, interpretations in the TA model reflect an idiographic as well as a nomothetic perspective.

Finn & Tonsager (1992) administered the MMPI-2 and provided feedback using the TA model to 32 students in a college counseling center, while providing only examiner attention to a control group of 29 students. Compared to the control group, students who completed the MMPI-2 and heard their test results reported a significant decline in symptom distress and an increase in self-esteem at follow-up. Newman and Greenway (1997) conducted a similar study, but administered the MMPI-2 to the control group as well as the experimental group. Half of the patients received test feedback before outcome measurement, while feedback was delayed for the control group. Consistent with previous results, patients who received feedback in the TA model reported less symptom distress and greater self-esteem than patients who had not yet received feedback.

Treatment Utility of MMPI-2 Data

In contrast to the promising results regarding the treatment utility of the MMPI when used in therapeutic assessment, little research supports the ability of MMPI data alone to produce improved outcomes. A thorough literature review revealed only one study demonstrating such results (Haase & Ivey, 1970, cited in Finn & Tonsager, 1997). Twenty-seven students at a university counseling center were randomly assigned to two groups. One group completed pretreatment assessment which included the original
MMPI; the other group did not. After both groups received a brief course of counseling, the students who had completed pretreatment assessment showed greater psychological adjustment based on self- and therapist ratings. The authors concluded that “pretesting may sensitize the client to counseling, which results in greater... client benefits than if no pretesting were performed” (cited in Finn & Tonsager, 1997, p. 377).

Lima and colleagues (2005) re-examined the issue of treatment utility using the MMPI-2. The authors hypothesized that patients whose course of therapy was guided by MMPI-2 results would experience greater symptom reduction than patients whose therapists did not have access to such data. In a manipulated assessment design, the MMPI-2 was administered to 134 patients in an outpatient community mental health clinic. Therapist access to the test results was manipulated through random assignment to either an access group or to a no-access group. Therapists in the access group interpreted and provided feedback to patients regarding MMPI-2 results. Therapists in the no-access group did not view MMPI-2 results. Patient outcomes were evaluated by illness severity ratings, improvement ratings, number of sessions attended, and premature termination. The authors reported null finding for three of four indices. On the fourth index, patients whose therapists had access to MMPI-2 data reported greater symptom severity at termination than patients in the no-access condition, contrary to the authors’ hypothesis.

Based on the above findings, Lima and colleagues (2005) suggested that the MMPI-2 may not provide incremental validity over the other assessment measures used by therapists in the clinic. The authors did not specify what other assessment measures were included in the battery and emphasized that the study did not attempt to examine whether the MMPI-2 was useful in lieu of the other measures. Lima et al. postulated
several possible explanations for their null findings. Therapists in the no-access group may have garnered information from other assessment measures that was similar to that provided by the MMPI-2. This hypothesis is difficult to evaluate given that the additional measures were not identified. The authors suggested, as a second possibility, that the MMPI-2 did not provide treatment-relevant information for therapists who had access to MMPI-2 profiles. Third, the authors stated that MMPI-2 results may have actually served as a distraction from more crucial information, such as diagnoses. Given MMPI's roots in differential diagnosis, this third hypothesis seems unlikely.

Finally, Lima and colleagues (2005) suggested that the impact of assessment information may be limited by the use of empirically supported treatments (ESTs). This final hypothesis is important to consider, given the current emphasis on ESTs within the field of clinical psychology. Further research is necessary to evaluate the possibility that the development of an EST for a given diagnosis lessens the impact of data provided by a personality assessment measure for patients with that diagnosis. However, it is important to note that the delivery of an EST, even when based on a treatment manual, requires the therapist to be flexible in adapting the treatment to individual patients (Haynes, Kaholokula, & Nelson, 1999; Kendall, Chu, Gifford, Hayes, & Nauta, 1998). Conceptually, there is no reason to believe that treatment based on ESTs would not benefit from comprehensive pre-treatment personality assessment.

Lima et al. (2005) noted that the reliability and generalizability of their findings should be established prior to drawing conclusions. A potential confound in the study involved the no-access group: Patients in the no-access group were offered the opportunity to receive feedback on their MMPI-2 results (from a clinician other than their
therapist). Ten of the 64 patients did receive feedback, thereby blurring the boundary between the access and no-access groups. Although the therapists did not see results, it is clear that a portion of the positive impact of MMPI-2 administration is the feedback that patients receive. This limitation may be addressed in future research into the treatment utility of the MMPI-2 by only administering the test to the experimental group, which would eliminate the ethical obligation to provide test feedback to the control group.

Present Study

The purpose of this study was to continue to evaluate the treatment utility of the MMPI-2. Specifically, do clients in a community outpatient clinic experience better therapy outcomes when their course of therapy is informed by the MMPI-2? Archival data were utilized to compare outcomes for clients who did and did not receive the MMPI-2 early in their course of therapy. Based on the many perceived benefits of the MMPI, as well as its demonstrated ability to improve diagnostic decisions and to distinguish between differentially-responding groups, it was hypothesized that clients who received the MMPI-2 early in their course of therapy would demonstrate greater symptom reduction than clients who did not receive it.

Although it is clear that many clinicians value the MMPI-2, research has not yet convincingly demonstrated the treatment utility of the measure as a guide in treatment planning. Further investigation is essential to building the science of assessment and to communicating the benefits of this long-used psychological test to other health professionals and to managed care companies.
METHOD

Participants

Subjects were 56 adult outpatient clients at the Pacific University Psychological Service Center (PSC), seen at the clinic from 2001 to 2007. Half of the participants completed the MMPI-2 early in their course of therapy, and the other half did not complete the MMPI-2 at any point during treatment. The total sample consisted of 34 females (60.7%) and 22 males (39.3%), with a mean age of 31.8 years (ranging from 20 to 65, SD = 9.14). Information regarding ethnicity was available for only 25 (44.6%) of clients. Of those clients, the majority (n = 18, 72%) self-identified as Caucasian. The remainder identified as African American (n = 2, 8%), Hispanic (n = 1, 4%), Asian American (n = 1, 4%), or of mixed ethnicity (n = 3, 12%). The predominantly Caucasian sample is consistent with the larger population of clients seen at the PSC, as well as general population demographics of the Portland area. The mean number of sessions received was 24.36 (SD = 18.4), ranging from 8 to 76. The mean number of sessions received prior to MMPI-2 administration, when present, was approximately 4 (M = 4.61, SD = 3.3).

Measures

MMPI-2

The MMPI-2 (Butcher et al., 1989) is a self-report measure of adult psychopathology, consisting of 567 true or false items. Test-retest reliability coefficients for the individual validity and clinical scales of the MMPI-2 range from .68 to .92 for a 2-
week interval, and test-retest reliability coefficients for the content scales range from .78 to .91 (summarized in Greene & Clopton, 2004). MMPI-2 profiles are generally interpreted beginning with the most elevated scale(s), which make up the codetype. Large bodies of research facilitate rapid description and generation of hypotheses regarding individuals who obtain common codetypes. Because only the presence or absence of MMPI-2 administration was relevant to the current study, MMPI-2 data itself was not utilized.

*Outcome Questionnaire 45.2 (OQ-45.2)*

The OQ-45.2 (Lambert et al., 1996) is a 45-item self-report measure of distress. Individuals rate the degree to which each item is true for them based on a 5-point likert-type scale. The OQ-45.2 is a broad measure designed to evaluate psychotherapy outcomes. The questionnaire is divided into three subscales: symptom distress, interpersonal relations, and social role. Internal consistency estimates for the subscales and total score range from .70 to .93, indicating good reliability (Hanson, 2005). The OQ-45.2 is routinely administered at the PSC at intake and at frequent intervals during the course of therapy. Only the first and last OQ-45.2 scores of each participant were used in the present analysis.

*Additional Forms*

The remainder of study variables were garnered from several forms used by the PSC. These included a contact log which documents the number and frequency of sessions, an intake report which presents basic client information and intake diagnoses, and a termination report which summarizes the therapeutic approach used for each client.
Therapists

Data was not collected regarding individual therapists included in the study. However, all therapists were clinicians at the PSC. Therapists at the PSC include doctoral students of clinical psychology in their first, second, and third years of practicum, as well as pre-doctoral interns. Each therapist receives approximately 3 hours of weekly supervision from a licensed clinical psychologist, in addition to monthly trainings and case conferences. All therapists had completed coursework on the MMPI-2. Therapists in the study applied treatment modalities including cognitive-behavioral, psychodynamic, gestalt, integrative, humanistic, existential, and interpersonal.

Procedure

Archival data were extracted from the closed files of former clients at the PSC, each of whom signed informed consent at intake authorizing the use of their treatment data for research. The files are maintained in locked cabinets within a secure storage room at the clinic. All data were collected by the primary investigator. A matched-pairs technique was used to select two equivalent groups. Files were examined sequentially (in alphabetical order by year) to identify files that met the inclusion criteria for the MMPI-2 group. Inclusion criteria are described below. Following the collection of data for each MMPI-2 subject, the first file which did not include an MMPI-2 administration and fit matching criteria for the previous file was recorded to complete the pair. Twenty eight pairs were collected.

Inclusion Criteria

Adult clients aged 18 and up were included in the study. Each of the clients must have completed at least 8 therapy sessions at the PSC, not including the intake interview.
Valid files included an OQ-45.2 score by the first session after intake, and another OQ-45.2 score within 4 sessions of termination. Clients in the MMPI-2 group must have completed the MMPI-2 within the first 8 sessions and at least 4 sessions before termination, or in the first one third of therapy if more than 8 sessions were received.

Matching Criteria

Matching to the MMPI-2 sample was based on several criteria. First, the total number of sessions received was within 4 sessions. Second, the initial OQ-45.2 score must have been within 10 points. This criterion was expanded to facilitate the matching of extreme scores, so that matching to initial OQ-45.2 scores above 85 was within 15 points, and matching to initial scores above 100 was within 20 points. Finally, clients were loosely matched by treatment modality, such that clients who received strictly short-term therapy (e.g., cognitive behavioral) were not matched to clients who received exclusively long-term therapy (e.g., psychodynamic). Intake diagnoses were collected for inclusion in preliminary analyses, but were not considered in the matching process.
RESULTS

Preliminary Analyses

Before examining group differences on the outcome variable—change in OQ-45.2 score—preliminary analyses were conducted to evaluate the similarity of the two treatment groups. Independent t-tests revealed no significant difference between the two groups for initial OQ-45.2 score, $t(54) = -1.14, p = .891$, age, $t(54) = .71, p = .479$, or for total number of sessions received, $t(54) = .04, p = .966$. Chi-square procedures indicated no significant difference in the distribution of ethnicities between groups, $\chi^2(4, N = 25) = 8.77, p = .067$. However, group differences were noted for treatment modality received, $\chi^2(4, N = 56) = 20.28, p < .001$. Clients who completed the MMPI-2 were more likely to have received psychodynamic therapy than their counterparts, and were less likely to have received therapy from a Gestalt orientation. Group differences for treatment modality are summarized in Table 1.

Primary intake diagnoses fell into seven categories, as summarized in Table 2. Chi-square analysis revealed no significant difference between groups when considering all diagnoses, $\chi^2(6, N = 55) = 8.50, p = .204$. The diagnoses were further coded into a dichotomous variable to account for the influence of severity of diagnosis. Specifically, the following categories of diagnosis were considered to reflect “mild” or transitory severity: adjustment disorders, relational problems, and other v-code diagnoses. All other diagnoses were considered to reflect more significant clinical presentations. Based on this
Table 1.

*Treatment Modality Frequencies by Group*

<table>
<thead>
<tr>
<th>Treatment Modality</th>
<th>MMPI-2 Given?</th>
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<tbody>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Cognitive / Behavioral</td>
<td>10</td>
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<tr>
<td>Psychodynamic</td>
<td>16</td>
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<tr>
<td>Gestalt</td>
<td>0</td>
</tr>
<tr>
<td>Integrative</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>28</td>
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distinction, clients who completed the MMPI-2 were significantly more likely to have received significant clinical diagnoses at intake than were clients who did not complete the measure, $\chi^2(1, N = 55) = 5.73, p < .05$.

Main Analysis

An independent *t*-test was conducted to test the hypothesis that clients who received the MMPI-2 would experience more symptom relief than clients who did not complete the MMPI-2. Symptom relief was assessed by OQ-45.2 scores at intake and at the conclusion of therapy. Final scores were subtracted from initial scores to create a single variable reflecting OQ-45.2 change over the course of therapy. Equal variances
Table 2

Primary Intake Diagnosis Frequencies by Group

<table>
<thead>
<tr>
<th>Primary Diagnosis</th>
<th>MMPI-2 Given</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Significant</td>
<td></td>
</tr>
<tr>
<td>Dysthymic / Depressive</td>
<td>12</td>
</tr>
<tr>
<td>Anxiety</td>
<td>8</td>
</tr>
<tr>
<td>Bipolar</td>
<td>1</td>
</tr>
<tr>
<td>Other significant disorder</td>
<td>2</td>
</tr>
<tr>
<td>Mild</td>
<td></td>
</tr>
<tr>
<td>Adjustment disorder</td>
<td>1</td>
</tr>
<tr>
<td>Relational problem</td>
<td>2</td>
</tr>
<tr>
<td>V-codes (non-relational)</td>
<td>2</td>
</tr>
<tr>
<td>Totals</td>
<td>28</td>
</tr>
</tbody>
</table>

*aDiagnostic information was unavailable for one client.

were assumed when conducting the t-test (Levene’s $F = 1.47, p = .231$). Contrary to the hypothesized relationship, there was no significant difference in OQ-45.2 change for clients who received the MMPI-2 ($M = 16.00, SD = 21.61$) and those who did not ($M = 22.21, SD = 26.94$), $t(54) = .95, p = .345$. The magnitude of differences in the mean scores was negligible ($\eta^2 = .017$). The main analysis is summarized in Table 3.
Table 3

*Independent t-test and Descriptive Statistics for OQ-45.2 Change*

<table>
<thead>
<tr>
<th>MMPI-2 Given</th>
<th>Yes</th>
<th>No</th>
<th>t</th>
<th>df</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>OQ-45.2 change</td>
<td>16.00</td>
<td>21.61</td>
<td>22.21</td>
<td>26.94</td>
<td>.95</td>
</tr>
</tbody>
</table>

Post Hoc Analyses

Several analyses were conducted in order to explore the potential effects of group differences in treatment modality and in intake diagnosis. Symptom reduction as measured by the OQ-45.2 did not vary significantly as a function of the treatment modality received by participants when explored by a one-way ANOVA, $F(4, 51) = .75$, $p = .566$. Modality accounted for a small portion of the variance in outcomes (partial eta squared = .055). A $t$-test indicated that clients with “mild” intake diagnoses (Adjustment Disorders and V-codes) scored significantly lower on the OQ-45.2 at intake ($M = 63.89$, $SD = 21.21$) than did clients who received more severe diagnoses ($M = 80.92$, $SD = 17.29$), $t(53) = -3.18$, $p < .01$. Clients with Mild and Significant diagnoses did not significantly differ in outcomes, $t(53) = -1.30$, $p = .200$; however, the trend was for clients with significant intake diagnoses to achieve greater reduction in OQ-45.2 scores ($M = 22.46$, $SD = 26.30$) than did clients with mild diagnoses at intake ($M = 13.39$, $SD = 19.40$).
The final analyses were conducted in an effort to identify variables that predicted positive outcome for clients who received the MMPI-2. Only data from the MMPI-2 group \((n = 28)\) was included in the analyses. For such clients, \(t\)-tests revealed no significant difference in outcome associated with gender, \(t(26) = .41, p = .683\), or severity of intake diagnosis, \(t(26) = -1.15, p = .261\). Furthermore, one-way ANOVAs indicated no significant differences based on treatment modality, \(F(3, 24) = 1.37, p = .277\), or intake diagnosis, \(F(6, 21) = .78, p = .592\).
DISCUSSION

The purpose of this study was to evaluate the treatment utility of the MMPI-2 as an aid in treatment planning within an outpatient training clinic. Matched pairs were selected from archival records at the Psychological Service Center. Each pair consisted of one client that had received the MMPI-2 early in the course of therapy and of a second client who did not receive the MMPI-2. Outcomes were evaluated by change on the OQ-45.2, which measures general psychological distress across several domains. Contrary to the study hypothesis, clients who received the MMPI-2 did not achieve better therapy outcomes than clients who did not receive it. No significant difference was noted between groups. This result is consistent with findings reported by Lima et al. (2005), who found that systematically controlling therapists’ access to their clients’ MMPI-2 results did not generally affect outcomes. This study, therefore, represents a step toward establishing the reliability and generalizability of such findings. However, the current results should be interpreted cautiously due to several inherent limitations of the study, which are discussed below.

The current null findings may be due to several factors. First, it may be that MMPI data did not add treatment-relevant information beyond that accessible through other assessment methods, including interviews and self-report measures. Second, as suggested by Lima and colleagues (2005), the data provided by comprehensive personality assessment may have less relevance within an EST paradigm. The majority of clients in the present study received empirically-supported therapies. Third, the therapists
in the study may have used MMPI inefficiently. This may have occurred due to failure to fully interpret MMPI data and incorporate it into treatment plans. Therapists may also have failed to enlist clients in the assessment process and provide meaningful feedback, thereby diminishing the therapeutic effects of assessment.

It is also possible that clients who received the MMPI achieved differential outcomes that were not measured by the OQ-45.2. Although the OQ-45.2 measures a broad range of symptoms and areas of function, it does not assess any area in depth. It may be that clients who received the MMPI achieved change in a level of functioning that is not well represented by the current outcome measure. Furthermore, the null findings may reflect positively on the treatment utility of the MMPI, in that clients in the MMPI group were more likely to have significant clinical diagnoses and may have been less likely to achieve equivalent outcomes if not for the therapists’ usage of MMPI data. However, this hypothesis is unlikely given that clients with significant diagnoses tended to achieve greater overall symptom reduction across both groups.

Limitations and Considerations

Several methodological limitations were present in the archival design of the current study. Because groups were not randomly assigned, it is impossible to know which factors contributed to some clients receiving the MMPI-2 while others did not. It is likely that therapist and supervisor factors played a large role in determining which clients received the measure. This notion is supported by the significant difference in treatment modalities between groups. Clients assigned to therapists of a psychodynamic orientation were much more likely to receive the MMPI-2. It is also possible that a systematic difference in the clients themselves affected the decision to administer the
MMPI. Indeed, clients in the MMPI group were more likely to have received
"significant" intake diagnoses than were clients who did not receive it. The decision by
therapists at the PSC to administer additional assessment instruments may reflect that a
case is perceived as challenging and unusual. It is probable that, despite controlling for
some variables, the two samples in the study were not equivalent. Any such systematic
difference in groups, if present, would weaken the conclusions that may be drawn from
these results. This limitation may be addressed in future research by utilizing a
manipulated assessment methodology in which the administration of the MMPI was
randomly varied between groups.

A related limitation is that assessment measures apart from the MMPI were not
controlled for. For example, some clients in the non-MMPI group may have received
alternate personality assessment measures. Such instances were likely rare because the
MMPI is the primary personality measure used at the PSC. However, due to this
limitation, the present study does not address incremental validity; only the treatment
utility of the MMPI independent of other measures is considered. The effects of other
measures may have obscured the benefit provided by the MMPI. This limitation may be
addressed in future studies by administering only the MMPI during the assessment phase
of treatment.

Therapists' usage of the MMPI was not measured or standardized in this study.
However, given that each therapist decided to administer the MMPI, which is not
routinely given at the clinic, it is likely that results were thoroughly examined and
incorporated into treatment plans. Feedback to clients about their MMPI results also was
not standardized, and may have differed largely from one therapist to another. Because it
is unknown if and how feedback was provided to each client, the therapeutic benefits of assessment may not be fully reflected in these results. Rather, only the treatment utility of MMPI data itself can be inferred.

A further consideration is the relatively small sample size (N = 56) reflected in these results. Due to the limited sample size, the study did not have sufficient power to detect small effects. However, it is unlikely that the hypothesized relationship would have been found even with a large sample size, as the trend for this sample was for clients who did not complete the MMPI to achieve more symptom reduction than clients who did complete the measure.

Finally, the sample in the present study was somewhat limited. The participants were largely homogenous regarding ethnicity. Although the proportion of Caucasian clients reflects the population in which the clinic is located, these findings may not generalize to populations of other ethnicities. Because the PSC is a subsidized training clinic, most clients are of lower- or middle-class socioeconomic status. It is necessary to replicate these findings with varied populations in order to improve their generalizability.

Conclusions and Future Directions

The current null findings are consistent with the results of Lima and colleagues (2005). However, it is clear that the treatment utility of the MMPI merits further evaluation. Given the value placed on the test by countless experienced practitioners, this continues to be an important area of study. At this time, the ability of the MMPI to predict positive treatment outcomes beyond those achieved without such assessment remains equivocal. The present findings bear replication and generalization in other settings.
If researchers continue to find that pre-treatment assessment with the MMPI does not enhance treatment outcomes, the next step is to identify circumstances in which the test does have utility. It may be that routine administration of the MMPI during treatment planning is unwarranted. Practitioners may achieve most success with the measure by using it selectively to answer specific questions. For example, the MMPI has been demonstrated to increase the accuracy of some diagnoses (Blais, Hilsenroth, Castlebury, Fowler, & Baity, 2001; Schwartz & Wiedel, 1981; Trull, Useda, Costa, & McCrae, 1995); therefore, use of the test as an aid in differential diagnosis appears to be empirically supported in some cases. A further use of the test may be to identify differentially-responding groups, with the end goal of selecting the best-fitting treatment modality for each individual.

The state of assessment science would benefit from research exploring the conditions under which the MMPI holds treatment utility. The test may be more meaningful for clients with certain diagnoses or of certain demographics. In the current study, no such variables were identified. However, such studies could be conducted by examining treatment outcomes for clients who did and did not receive the MMPI. Any variables that predicted beneficial outcome for the MMPI group but not for the other would be identified as areas of interest vis a vis the treatment utility of the MMPI. Similarly, studies may use multiple outcome assessment techniques to examine whether clients who receive the MMPI demonstrate positive outcome within a specific domain of functioning (e.g., interpersonal relationships, self-efficacy, etc.).

Given that the treatment utility of the MMPI has been most strongly demonstrated within a therapeutic assessment model (c.f. Finn, 1996), it is likely that practitioners
would achieve maximum benefit with the measure by incorporating such techniques. However, this distinction bears further examination. Of particular interest would be studies comparing outcomes of clients who receive the MMPI in a traditional information-gathering model and of clients receiving therapeutic assessment with the MMPI.

Although the present study has focused on the MMPI, the issues here raised may be applied to any psychological assessment measure or procedure. Similar methodologies may be applied to determine the effect of a given measure on treatment outcome. Consideration of the matter of treatment outcome as related to assessment is essential to building the science of psychological assessment. Furthermore, demonstration of the treatment utility of assessment techniques will allow psychologists to convincingly demonstrate the benefits of such practices to outside payers and to the general public.
REFERENCES


