

Therapeutic Effects of Providing MMPI-2 Test Feedback to College Students Awaiting Therapy

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This study investigated the benefits of sharing Minnesota Multiphasic Personality Inventory–2 (MMPI-2) test results verbally with clients. Ss were randomly selected from a college counseling center's waiting list: 32 received test feedback according to a collaborative model developed by Finn (1990) and 29 received only examiner attention. Groups did not differ on age, sex, days between examiner contact, and initial levels of distress and self-esteem. Compared with the controls, clients who completed the MMPI-2 and heard their test results reported a significant decline in symptomatic distress and a significant increase in self-esteem, and felt more hopeful about their problems, both immediately following the feedback session and at a 2-week follow-up. Also, clients' subjective impressions of the feedback session were overwhelmingly positive. Although the study failed to identify specific client variables or elements of the feedback session that were related to these changes, the findings indicate that psychological assessment can be used as a therapeutic intervention.

Providing test feedback to clients was once generally discouraged as a potentially harmful practice (e.g., Klopfer, 1954; Klopfer & Kelley, 1946—both quoted in Tallent, 1988, pp. 47–48). Recently, however, many respected clinicians have urged assessors to discuss test results with clients or give them a written report of test findings (e.g., Berg, 1984, 1985; Butcher, 1990; Finn, 1990; Fischer, 1972, 1979, 1986; Williams, 1986). This change in attitude is partly due to the recognition of clients' legal rights to access professional records (Brodsky, 1972) and to the inclusion of test feedback in lists of ethical behaviors of psychologists (American Psychological Association [APA], 1990; Pope, 1992). In addition, it is believed that sharing psychological test results with clients builds rapport between client and therapist, increases client cooperation throughout the assessment process, and leaves clients with positive feelings about psychological testing and mental health professionals in general (e.g., Dorr, 1981; Finn & Butcher, 1991; Fischer, 1986; Lewak, Marks, & Nelson, 1990; Mosak & Gushust, 1972).

A separate but related claim is that assessment feedback is

itself therapeutic for clients. Lewak and his colleagues (1990) believed that the sharing of the test results can improve clients' mental health when clients are encouraged to actively participate in their MMPI or MMPI-2 feedback sessions. Many clinicians have also reported that following a feedback session clients describe a sense of relief that someone has finally understood their problems (Berg, 1985; Craddick, 1975; Dana, 1982; Dana & Leech, 1974; Fischer, 1986). Drawing on clinical experience, Finn and Butcher (1991) have summarized client benefits following a feedback session as including (a) an increase in self-esteem, (b) reduced feelings of isolation, (c) increased feelings of hope, (d) decreased symptomatology, (e) greater self-awareness and understanding, and (f) increased motivation to seek mental health services or more actively participate in on-going therapy.

Unfortunately, there has been no direct evidence supporting the claims of benefits from personality test feedback. Almost all research studies on test feedback have examined the effects of providing false personality feedback or Barnum statements to research subjects. (For a detailed review of false personality feedback studies, see Furnham & Schofield, 1987; Snyder, Shenkel, & Lowery, 1977.) After reviewing the numerous feedback studies, Furnham and Schofield (1987) questioned the relevance of the false feedback studies to actual clinical phenomena. In addition, Dana (1982) raised a number of ethical concerns about the numerous studies using college students as subjects in false feedback studies, because they may be future consumers of psychological services.

In contrast, only a handful of studies have investigated the effects of honest personality feedback, which is more typically the practice in the clinical situation. Comer (1965) hypothesized that college students who received MMPI test feedback before beginning 7 weeks of individual psychotherapy would show more change in therapy than would those students who did not receive test feedback. On the basis of the client's change

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scores on three MMPI supplemental scales, Comer found no significant differences between groups, but the clients' acceptance of the MMPI test results was overwhelmingly positive, and in a follow-up questionnaire they reported that the written feedback provided them with a good basis for discussion in therapy and helped them establish a relationship with their therapist.

Although Comer's (1965) results were inconclusive, his research provided the first empirical test of personality test feedback as a therapeutic aid to brief time-limited psychotherapy. His failure to demonstrate an effect of MMPI feedback may have been due to several limitations in this study: a small sample, measuring therapeutic change with scales that are not sensitive to change, the format of the test feedback, and the use of the MMPI as the therapeutic intervention as well as the instrument measuring change—thus confounding Comer's conclusions.

In summary, the therapeutic impact of sharing information with clients about their psychological test results is largely impressionistic and anecdotal, and there are no controlled studies demonstrating that clients benefit from test feedback. Four basic questions guided the research: Does telling clients their test results benefit them? If so, what are the benefits of test feedback and how long do they persist? If benefits occur, which aspect of the feedback session was responsible for these changes? And last, if test feedback is beneficial, which clients benefit most?

This study investigated the therapeutic impact of providing feedback from the Minnesota Multiphasic Personality Inventory-2 (MMPI-2) to college students currently waiting for mental health services. The MMPI-2 was chosen for a number of reasons: First, the MMPI is the most widely used and researched objective test of personality (Lubin, Larsen, Matazzzo, & Seever, 1985; Piotrowski & Keller, 1989), and it provides a great deal of information concerning an individual's personality style, defenses, and awareness of psychological issues. Second, the ease of administration and automated scoring of the MMPI-2 (through the National Computer Systems) made it an ideal instrument to use. Third, a number of clinicians and researchers have claimed that their respective clients have benefited from hearing MMPI-2 test results (e.g., Finn & Butcher, 1991; Lewak, Marks, & Nelson, 1990).

Method

Subjects

Participants were 61 outpatient clients from the University of Texas' Counseling and Mental Health Center who were recruited over a 16-month period during those times when the Counseling Center was unable to offer immediate services to all clients.¹ Because of an error in completing one of the measures following the MMPI-2 feedback session, one experimental client's scores were dropped from all the analyses. Of the remaining 60 clients, 32 were randomly assigned to the experimental group and received MMPI-2 test feedback, and 28 were assigned to the attention-only control group. In addition, one client in the experimental condition did not return the mailed follow-up questionnaires, resulting in an overall return rate of 98%.

The final subject count was 24 women and 8 men in the MMPI-2 assessment group and 18 women and 10 men in the attention-only control group. The groups were not significantly different in age ($M = 23.3$, $SD = 5.5$) or sex composition, nor was the overall percentage of

women (70%) significantly different from the base rate of women among clients receiving services at the University of Texas at Austin Counseling and Mental Health Center in 1990–1991 (65%).

There were 11 months when requests for services exceeded available counselors, during which most clients were referred to the Center's waiting list. Intake workers randomly selected participants for the study from clients who did not require immediate services at the time of their initial screening and approached them about participating in the study. This excluded clients who were assessed at intake as suicidal, psychotic, or in danger of causing harm to themselves or others.

Clients in the experimental condition received the following verbal and written information from the intake workers. While they were on the Center's waiting list, free psychological testing would be available through their participation in an assessment research project. If they chose to participate, they would complete several standardized tests, including the MMPI-2, after which they would receive verbal test feedback about their MMPI-2 results from an advanced clinical psychology graduate student (Tonsager). At the end of their participation, their future therapists would receive a written MMPI-2 test report.

Clients in the control group received the following information. While they were waiting for psychotherapy, they were invited to participate in an assessment research project being conducted by an advanced clinical psychology graduate student. They would have the opportunity to meet on two separate occasions with the examiner and would be asked to complete several standard questionnaires. Their participation would be very helpful to future students waiting for psychological services at the counseling center.

Both groups of clients were assured that their decision of whether or not to participate in the study would in no way influence their receiving services at the Counseling Center. They were also told that if they chose to participate, they were free to withdraw from the study at any time without penalty. If clients were interested in participating, their names were then given to the examiner, who contacted them within 4 days. Once contacted, all clients agreed to participate.

Design and Procedure

To test whether clients benefited from hearing their MMPI-2 test results, a 2 (Group) $\times$ 3 (Time) repeated-measures design was used. As noted in Figure 1, the major distinction between these two conditions is that experimental clients completed the MMPI-2 and received verbal MMPI-2 test feedback, whereas control clients completed only the outcome measures and received examiner attention.

Experimental condition: Clients receiving MMPI-2 feedback. At Time 1, the examiner conducted a 30-min interview, focusing on the clients' presenting problems, and explained the use and purposes of psychological testing and the MMPI-2. The examiner solicited questions for the assessment from each client (e.g., what did he or she want to get out of the assessment?). In addition, clients were reminded that they would receive only verbal feedback of their MMPI-2 test results and that a written report of these findings would be sent to the university counseling center to be used by their future therapists. Following the interview, each client completed the MMPI-2 and the other independent and dependent measures used in the study.

At Time 2, two weeks later, the examiner met individually with the clients to discuss their MMPI-2 test findings. Feedback sessions were conducted according to an approach developed by Finn (1990) that stresses a collaborative model of assessment such as described by Fischer (1986). The feedback process used is also similar to the method discussed by Butcher (1990). First, the examiner gave each client a brief description of the history of the MMPI-2 (e.g., how it was devel-

¹ Participants in the study will be referred to as *clients* instead of as *subjects* to emphasize the clinical setting of the study.

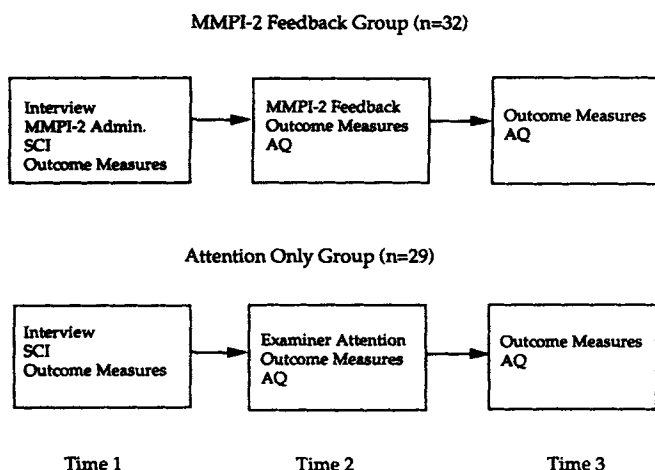


Figure 1. Design: Group (2) $\times$ Time (3) (SCI = Self-Consciousness Inventory; AQ = Assessment Questionnaire; Outcome Measures = Symptom Checklist-90-Revised and Self-Esteem Questionnaire).

oped and is used in a variety of settings). The client's questions for the assessment were reviewed, and if he or she had new questions, they were added to the list to be addressed by the examiner. Then, each client was shown his or her MMPI-2 profile, and the examiner explained the meaning of significant scale elevations and configurations of the basic scales and content scales. The clients were encouraged to actively participate throughout the feedback session by giving their reactions or feelings to each test finding and helping the examiner to determine which results were valid. Last, the results were summarized, and any remaining questions were addressed.² After the feedback session, clients completed the dependent measures. At Time 3, approximately 2 weeks following the feedback session, each client was mailed the dependent measures used in the study, a letter thanking them for their participation, and a stamped return envelope. Clients were also encouraged to write any additional comments or observations about the MMPI-2 feedback session.

Control condition: Clients not receiving test feedback. At Time 1, clients in the control group met individually with the examiner for a 30-min interview to discuss their current concerns. The examiner informed each client that psychological testing should be viewed as a form of communication; although they would not be receiving feedback about their own results, their participation would be very valuable in helping future students who waited for mental health services. Following the interview, clients were asked to complete the independent and dependent measures used in the study. Two weeks later, at Time 2, the control group met with the examiner for 30 min to discuss their current concerns or reactions to the study. Afterward, they completed the dependent measures. At Time 3, two weeks later, these clients were mailed the dependent measures, a stamped return envelope, and a letter thanking them for their participation.

There were no statistically significant differences between the assessment and control groups in the number of days between referral and the initial interview ($M = 6.2$), between interview and feedback/attention sessions ($M = 15.7$), or between feedback/attention and completion of the follow-up ($M = 12.2$).

Measures

Minnesota Multiphasic Personality Inventory-2 (MMPI-2). At Time 1, clients in the experimental condition completed the MMPI-2,

a 567-item restandardized version of the MMPI. Clients' MMPI-2 profiles were scored and plotted using the National Computer Scoring system. The MMPI-2 interpretations and written reports were based on material found in a number of primary sources for MMPI-2 interpretation (cf. Butcher, 1990; Butcher, Graham, Williams, & Ben-Porath, 1990; Graham, 1990) and were closely supervised by Stephen E. Finn. To determine whether the MMPI-2 profiles of clients in the experimental group were valid, the following raw score exclusion criteria were used: $? > 30$, or $L > 10$, or $F > 21$, or $K > 26$. There were no invalid MMPI-2 profiles in the sample.

The MMPI-2 profiles of the 32 clients in the feedback group indicated that they were experiencing significant psychopathology. As shown in Table 1, a majority of the MMPI-2 profiles were characterized by clinically significant scale elevations. For example, 91% of the sample had MMPI-2 profiles with one or more clinical scales above 65T (the generally accepted point of clinical significance), and 75% had two or more scales above 65T. We also classified the MMPI-2 profiles by the type of pathology they indicated, according to the scheme developed by Lachar (1974). Eleven profiles (34%) were considered to reflect primarily "neurotic" pathology, ten (31%) "psychotic," seven (22%) "characterological," and four (13%) "indeterminate."

Self-Esteem Questionnaire. At Times 1, 2, and 3, clients' current levels of self-esteem were assessed by the Cheek and Buss (1981) Self-Esteem Questionnaire, a six-item scale that has been found to correlate .88 with the well-known questionnaire by Rosenberg (1965). Clients were asked to rate on a 5-point scale how characteristic each item was of themselves, ranging from *not at all characteristic of me* (1) to *very characteristic of me* (5). Clients' scores on the Self-Esteem Questionnaire were converted separately by sex to linear T scores based on means and standard deviations for a normal college sample (A. Buss, personal communication, 1991).

Symptom Check List-90-Revised. At all three measurement points, clients' current levels of symptomatic psychological distress were measured by the Symptom Check List-90-Revised (SCL-90-R), which consists of 90 items that reflect psychopathology in terms of three global indexes of distress and nine primary symptom dimensions (Derogatis, 1983). Items are answered on a five-point scale ranging from *not at all* (0) to *extremely* (4) in terms of the extent to which clients were distressed by that problem during the past 7 days. The three global indexes are (a) the global severity index (GSI), which combines information on a number of symptoms and intensity of distress, (b) the positive symptom total, which reflects only the number of symptoms, and (c) the positive symptom distress index, which is a pure intensity measure that has been adjusted for the number of symptoms present. The SCL-90-R has been proven in a variety of clinical and medical settings to be very sensitive to change, and its GSI score has been recommended as a useful psychotherapy change measure (Derogatis, 1983; Waskow & Parloff, 1975).

The decision of which norms to use in scoring the SCL-90-R is a complex one, given that Derogatis (1983) did not provide a set of norms for college-aged students. In a large scale study ($N = 1,928$) conducted at a college counseling center, an unusually high percentage (65.1% men and 62.0% women) of the college-age students would have been classified as seriously disturbed if their SCL-90-R scores had been based on the available adult psychiatric norms (Johnson, Ellison, & Heikkinen, 1989). In addition, Johnson and his colleagues found women to consistently obtain raw scores on the majority of the SCL-90-R scales that were higher than those of the men. Because of the significant sex differences in the SCL-90-R test results, Derogatis (1983) recommended that separate sex norms be used to interpret the scores. Given the lack of norms for a college-age sample and the desire

² A manual describing the method of giving test feedback is available on request from Stephen E. Finn.

Table 1
Number of Scales Elevated Within a Minnesota Multiphasic Personality Inventory-2 Profile (N = 32)

Number of scales	Cumulative percentage of profiles with scale elevations			
	<i>T</i> > 65		<i>T</i> > 70	
	%	<i>n</i>	%	<i>n</i>
0	9	3	28	9
1 or more	91	29	72	23
2 or more	75	24	50	16
3 or more	56	18	25	8
4 or more	41	13	16	5
5 or more	28	9	12	4
6 or more	12	4	6	2
7 or more	6	2	—	—

to combine data from both sexes for later analyses, the decision was made to convert the clients' raw GSI scores, separately by sex, to linear *T* scores based on the sample's mean and standard deviation at Time 1.

Private and public self-consciousness. Given the assertion by Finn and Butcher (1991) that receiving test feedback increases clients' self-awareness, we decided to evaluate clients' private self-consciousness: the disposition, habit, or tendency to focus attention on the private, internal aspects of the self (Buss, 1980, 1986). Because individuals with high scores for this trait repeatedly examine their feelings and motives, we thought they might benefit the most from an MMPI-2 feedback session. To measure this trait, we used the Self-Consciousness Inventory (Fenigstein, Scheier, & Buss, 1975), a 23-item self-report questionnaire that has three underlying factors: private self-consciousness, public self-consciousness, and social anxiety. Given the focus of the present study, only the 17 items related to self-consciousness were used. Measurements of public self-consciousness were made for discriminant validity (i.e., we did not expect them to be related to reported benefits from test feedback). Clients in both groups completed the Self-Consciousness Inventory at Time 1. The groups did not significantly differ on their scores for either private ($M = 37.3$) or public ($M = 25.4$) self-consciousness.

Assessment Questionnaire. Because there are no available scales for measuring clients' subjective impressions of a test feedback session, a 30-item self-report Assessment Questionnaire (AQ) was developed for this study. The construction of the AQ was based on the investigators' review of the literature, clinical experience, and the solicited written comments by a subset of the sample. In writing the 30 face-valid test items, a theoretical-rational approach was used, a method strongly supported by Jackson (1971) and Burisch (1984). The goal was to develop items reflecting whether the clients felt (a) more hopeful about their problems or situation, (b) understood by the test findings, (c) less isolated, (d) respected and liked by the examiner, (e) as if they had gained information about themselves, (f) satisfied with the testing experience, and (g) more motivated to seek mental health services. Each item was rated on a 5-point scale, ranging from whether clients *strongly disagreed* (1) to *strongly agreed* (5) with the statement. Thus, clients' total scores on the AQ reflect the extent to which they found the assessment experience to be a positive one. Sample items are presented in Table 2.

Although clients in the control condition did not participate in an MMPI-2 assessment, they did complete other measures and met with the examiner on several occasions. Thus, a subset of items from the AQ were given to clients in the control condition to complete at Time 2 and Time 3. This subset excluded items from Content Areas 2 (feeling un-

derstood as a result of the MMPI-2 feedback) and 5 (learning new information about themselves from the assessment experience).

Table 2 also shows alpha consistency coefficients computed on clients' responses to that AQ at Time 2. As shown in the table, Subscales 3, 6, and 7 had poor internal consistency reliability among clients in the feedback condition. Thus, it was decided not to use these subscales separately in further analyses. The total AQ score (computed for the experimental group only) showed adequate reliability for use in both between-subject and within-subject analyses (Helmstadter, 1964). In general, clients in the feedback condition who rated the assessment experience positively at Time 2 also did so at Time 3 (test-retest $r = .81$, $p < .001$).

Results

Effects of MMPI-2 Assessment on Symptomatology and Self-Esteem

The first question of the study was whether completing an MMPI-2 and receiving feedback about test results produced any significant changes in clients' functioning. The two major hypotheses were that clients receiving MMPI-2 feedback, as compared with the attention-only controls, would report (a) significant decrease in symptomatic distress and (b) significant increase in self-esteem. Given the fact that GSI and Self-Esteem correlated moderately ($N = 60$: Time 1: $r = -.36$; Time 2: $r = -.23$; and Time 3: $r = -.44$), two repeated-measures univariate analyses of variance (ANOVAs) were conducted: a 2 (Group) $\times$ 3 (Time) with GSI and Self-Esteem scores as the dependent variables in the respective analyses.

Symptomatology. For GSI scores from the SCL-90-R, the ANOVA revealed a significant Group $\times$ Time interaction, $F(2,54) = 6.44$, $p < .01$, and a significant main effect for Time, $F(2,54) = 17.17$, $p < .001$. As shown in Figure 2, clients who completed an MMPI-2 and heard their MMPI-2 test results showed a significant drop in their self-reported levels of symptomatic distress compared with clients receiving attention only. This drop was sizable, approaching an effect size of 1. Given the robust omnibus *F* value, *t* tests were conducted to pinpoint when the two groups significantly differed in terms of their level of distress. Although there were no significant differences between the two groups at the time of the initial interview, Time 1: $t(58) = -1.29$, *ns*, or following their respective feedback or attention-only session, Time 2: $t(56) = .57$, *ns*, the feedback group reported significantly less symptomatic distress than did the attention group at the 2-week follow-up, Time 3: $t(57) = 2.98$, $p < .01$. There was no significant decrease in the attention-only group's GSI scores across time.

Self-esteem. A similar result was obtained for self-esteem. The repeated-measures ANOVA revealed a significant effect for Group $\times$ Time, $F(2,56) = 9.02$, $p < .001$. As illustrated in Figure 3, the two groups of clients did not significantly differ in self-esteem at the time of the initial interview, Time 1: $t(58) = -1.3$, *ns*. However, clients who completed the MMPI-2 and received their test results reported significantly higher levels of self-esteem immediately following the feedback, as compared with clients who received only attention from the examiner, Time 2: $t(58) = -3.16$, $p < .01$, and at the 2-week follow-up, Time 3: $t(57) = -3.93$, $p < .001$. At follow-up, the MMPI-2 feedback group was within the normal range of self-esteem for

Table 2
The Assessment Questionnaire (AQ) Subscales

No.	Subscale Name	No. of items	Sample item	Internal consistency ^a	
				F ^b (n = 26)	F and A (n = 54)
1	Hope	5	I feel better able to tackle my problems.	.77	.83
2	Understood	5	I really recognized myself in what the examiner said.	.68	— ^c
3	Isolation	4	After the feedback session, I felt less lonely.	.44	.58
4	Examiner Relationship	5	I felt that the examiner really liked me.	.61	.78
5	Information	4	The feedback session gave me a lot of things to think about.	.67	— ^c
6	Satisfaction	4	I would recommend that a friend go through this testing experience.	.48	.78
7	Motivation	3	I am now more aware of what I want to get out of therapy.	.38	.50
AQ sum score		30		.87	—

Note. F = feedback group; A = attention-only group. ^a Cronbach's coefficient alpha computed at Time 2. ^b Six experimental subjects were not given the AQ. ^c Control clients did not complete items on AQ Subscales 2 and 5.

nonclient college students ($M = 50$, $SD = 10$). In contrast, the attention-only group reported a progressive, although not significant, decline in self-esteem across time.

Hope. Finn and Butcher (1991) stated that after a test feedback session clients often feel more hopeful about their problems. Although baseline ratings of hope were not collected at Time 1, the Hope subscale of the AQ provides an indirect method of testing Finn and Butcher's assertion. The Hope subscale is one that showed reliability that was good enough to permit between-group comparisons. Experimental and control clients' ratings of hopefulness were compared at Time 2 and Time 3. As shown in Table 3, directly after their MMPI-2 feedback session, clients in the experimental condition showed more hope about their problems than did clients in the attention-only group, and this persisted over the 2-week follow-up. Although these group differences cannot be tied directly to the MMPI-2 feedback session, because of the absence of ratings at Time 1, a finding of no difference between the groups would have directly challenged Finn and Butcher's (1991) assertion.

Feelings about the examiner. Another reliable subscale of the AQ allows a test of a competing hypothesis: that clients in the experimental group improved relative to the control group because they felt more attended to or liked by the examiner. We examined clients' ratings of the examiner on Subscale 4 of the AQ, Examiner Relationship, which assessed whether a client felt accepted, liked, and respected by the examiner. As shown in Table 3, there was no significant difference in clients' responses between the two conditions. Both groups of clients felt very well liked and attended to by the examiner, and these feelings persisted over the 2-week follow-up. Thus, the benefits experienced by clients in the MMPI-2 feedback condition do not appear to be simply a function of feeling liked, accepted, or cared for by the examiner.

Predictors of Change in the Experimental Group: Feedback Variables

Given the demonstrated benefits of the MMPI-2 assessment, we investigated what aspects of the MMPI-2 test administra-

Table 3
Comparison of Feedback (F) and Attention-Only (A) Groups' Means and Standard Deviations on Two Assessment Questionnaire (AQ) Subscales

AQ scale name	Time 2					Time 3				
	F (n = 26)		A (n = 28)		t	F (n = 25)		A (n = 28)		t
	M	SD	M	SD		M	SD	M	SD	
Hope	4.1	.60	3.6	.82	2.33*	4.2	.66	3.6	.59	3.01**
Examiner Relationship	4.7	.27	4.6	.45	1.81	4.7	.33	4.4	.55	1.84

* $p < .05$. ** $p < .01$.

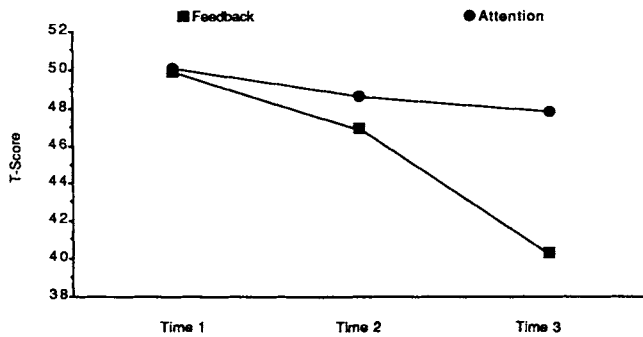


Figure 2. Mean Global Symptom Index (GSI) score between Groups $\times$ Time (Feedback: $n = 32$; Attention: $n = 28$).

tion and verbal feedback may be responsible for the reported significant changes in the experimental group.

Time between testing and follow-up. We first questioned whether there was a relationship between the amount of time between testing (Time 1) and postfeedback follow-up (Time 3) and the reported changes in symptomatic distress and self-esteem. To test this possibility, we created change scores on the GSI and Self-Esteem Questionnaire by subtracting the clients' scores at Time 1 from their scores at Time 3. Correlations of change scores with the number of days elapsed between Time 1 and Time 3 showed no support for the suggestion that the length of time was related to the overall drop in symptomatology, $r(31) = -.04$, *ns*, or increase in self-esteem, $r(31) = -.12$, *ns*.

Feelings about the assessment. We also predicted that clients who experienced the MMPI-2 assessment as more positive, as indicated by their higher ratings on the AQ, would show a greater reduction in symptomatology and a greater increase in self-esteem. A client's AQ sum score following the feedback session was positively correlated with the self-esteem change scores from testing to feedback, $r(25) = .46$, $p < .01$. Also, at the follow-up, the AQ sum score was found to be positively correlated with the overall drop in symptomatology, $r(25) = .36$, $p < .05$, and increase in self-esteem: testing to follow-up, $r(25) = .37$, $p < .05$; feedback to follow-up, $r(25) = .41$, $p < .05$.

Predictors of Change in the Experimental Group: Client Variables

A final question was whether certain types of clients were more likely to benefit from an MMPI-2 assessment than were others.

Self-consciousness. We had predicted that clients high in private self-consciousness were more likely to benefit from an assessment than persons low in private self-consciousness and that public self-consciousness would be unrelated to client change scores. Despite the fact that private and public self-consciousness were modestly correlated in our sample, $r(29) = .24$, private self-consciousness was found to be strongly related to a change in symptomatic distress from Time 2 to 3, feedback to follow-up; $r(29) = .54$, $p < .001$, whereas public self-consciousness showed no significant relationship to change in symptomatic distress, $r(29) = .14$, *ns*. In contrast, there was no significant relationship between the clients' increase in self-es-

teem and their scores on either the Private or Public Self-Consciousness scales. Thus, it appears that the more clients reported a tendency to reflect on themselves and their inner worlds prior to participating in the assessment, the greater the decrease in their symptomatic distress following the MMPI-2 feedback session. Perhaps these clients may have increased the most in their self-awareness following the feedback sessions—a factor Finn and Butcher (1991) related to positive change.

Severity and type of psychopathology. We also considered whether the severity and type of psychological disturbance was related to the significant changes in symptomatic distress and self-esteem. The two questions being investigated were (a) Are the clients who are most distressed the most likely to report the greater therapeutic benefits and resulting changes? (b) Are clients diagnosed with a particular type of psychological disturbance most likely to benefit from the MMPI-2 feedback session?

To assess the clients' levels of psychopathology, a supplemental scale from the MMPI-2 was used: the College Maladjustment (*Mt*) scale developed by Kleinmuntz (1961). The *Mt* scale has been found to measure severe psychopathology in college students (Wilderman, 1984); thus, it is an ideal instrument for assessing the current level of maladjustment in the sample. In addition, the *Mt* scale correlates highly with the average elevation of the MMPI-2 profile. Although the *Mt* scale was correlated positively with the clients' GSI scores and negatively with Self-Esteem scores at Time 1, $r(32) = .58$, $p < .01$; $r(32) = -.53$, $p < .01$, respectively, there was no significant relationship between *Mt* scores and change scores in self-esteem or symptomatology at either Time 2 or Time 3.

It also seemed possible that clients with particular types of problems might experience the MMPI-2 assessment as more or less beneficial. In investigating this question, we used Lachar's (1974) classification system for MMPI profiles, described here earlier. Two one-way ANOVAs were conducted, with the clients' MMPI-2 Lachar code classification as the independent variable and their overall GSI and Self-Esteem change as the respective dependent variables. There were no significant findings for these analyses, GSI: $F(3,27) = 2.07$; Self-Esteem: $F(3,27) = 2.80$, *ns*. However, we are aware of the small number of clients in one of the Lachar classifications (Indeterminate) as well as the very wide standard deviations that this group

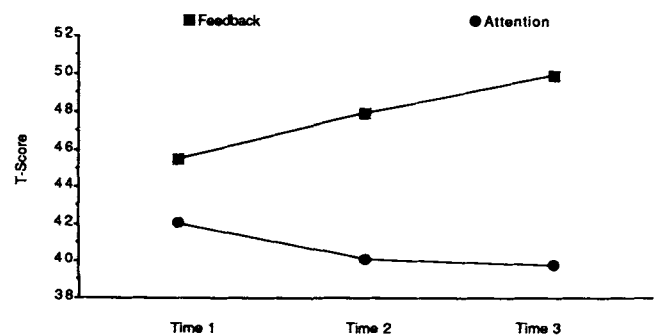


Figure 3. Mean Self-Esteem score between Groups $\times$ Time (Feedback: $n = 32$; Attention: $n = 28$).

showed on Self-Esteem and GSI scores relative to the other three groups.

Attitudes toward mental health professionals. Last, we considered whether clients who were more trusting and positive toward mental health professionals were more likely to benefit from the MMPI-2 assessment. For this purpose, we relied on the Negative Treatment Indicators scale (TRT) of the MMPI-2. This is one of the new MMPI-2 content scales, and it measures a client's tendency to distrust and feel negatively about mental health professionals (Butcher et al., 1990). We predicted that clients with high scores on the TRT scale might report less significant changes following the MMPI-2 feedback session as compared with clients with lower TRT scores. Contrary to our predictions, no significant relationships were observed between clients' TRT scores and subsequent change in either symptomatic distress or self-esteem.

Percentage of Variance in Change Predicted

The more positively clients in the experimental group rated the assessment experience, the more likely they were to show a drop in symptomatic distress and an increase in self-esteem. The higher these clients scored on the Private Self-Consciousness scale, indicating a tendency to be reflective and inner directed, the greater their decrease in symptomatology over the course of the study. To better quantify our success in predicting change, two multiple regressions were conducted on clients' GSI and Self-Esteem change scores (Time 1 to Time 3), respectively, with AQSum scores at Time 2 and Private Self-Consciousness scores at Time 1 entered as predictors. With these two variables, we were able to account for 17% of the variance ($R = .41$) in GSI change scores and 21% ($R = .46$) in Self-Esteem change scores ($df = 2, 22$ in both regressions, both F s not significant).

Discussion

This study provides support for the therapeutic impact of sharing MMPI-2 test results verbally with college-age clients. Clients who completed an MMPI-2 and later heard their MMPI-2 test results reported a significant increase in their self-esteem immediately following the feedback session, an increase that continued to grow over the 2-week follow-up period. In addition, after hearing their MMPI-2 test results, clients showed a significant decrease in their symptomatic distress, and distress continued to decline during the subsequent 2-week period. Last, compared with clients receiving attention only from the examiner, clients who completed the MMPI-2 and received a feedback session showed more hopefulness about their problems immediately following the feedback session, and this persisted at the final follow-up.

Experimental clients' subjective impressions of the assessment and the MMPI-2 feedback session were overwhelmingly positive as measured by the Assessment Questionnaire (AQ). This and the aforementioned outcome results strongly refute the assertion of many traditional assessors that hearing about test results will necessarily be a frightening and upsetting experience for clients. The possibility remains, however, that some methods of test feedback could be upsetting and even damag-

ing to clients. The particular method of feedback used in the current study, with its emphasis on soliciting clients' participation in the assessment and collaboratively discussing test results, appears to have been well received by clients. On a similar note, it appears that clients in the attention-only control group also experienced the research experience as positive. This fact may help explain the exceptionally high return rate (98%) of the follow-up questionnaires from the combined group of clients.

Although the present study clearly documents changes in the clients' self-esteem and symptomatic distress following their MMPI-2 feedback session, it provides only partial evidence as to why these changes occurred. There was a moderate relationship between how positively clients felt about the assessment experience and how much they improved on symptomatology and self-esteem after the feedback session. Also, clients who rated themselves at the inception of the study as more reflective and thoughtful about their inner experience were more likely to benefit from a feedback session, perhaps because of a greater increase in self-awareness following the test feedback. Apart from these variables, however, no significant predictor relationships emerged: Improvement was unrelated to the clients' initial level of distress on the MMPI-2; the type of pathology the MMPI-2 revealed; their prior attitudes toward mental health professionals and mental health services; and the length of time between testing, feedback, and follow-up. Overall, less than a quarter of the variance could be predicted for either change in symptomatology or change in self-esteem among clients receiving test feedback.

The current study is limited, of course, in its ability to identify specific therapeutic elements about test feedback, because a highly standardized feedback approach was used by one examiner for all clients. Further research needs to focus not only on replicating the current results but also on identifying those aspects of the current feedback method that have specific therapeutic value. Identifying such elements might allow for an even more powerful feedback method or for a more efficient method that minimizes nonessential components.

In the absence of this research, we are left with theory to help explain the question one of our colleagues put to us: Why does telling people bad things about themselves (e.g., that they are depressed, angry, thought disordered, or obsessional) make them feel better? Two quite different areas of psychology speak directly to this. In social psychology, Swann's self-verification theory asserts that individuals seek feedback from others that fits their own conceptions of themselves, even if such feedback is negative (McNulty & Swann, 1991; Swann, 1983; Swann, Stein-Seroussi, & Geisler, 1992). Swann and his colleagues postulate that although most individuals desire to be praised and feel valued by others, they also want others to see them as they see themselves, and this desire for self-verification will often override the desire for positive self-enhancing feedback (Swann, Hixon, Stein-Seroussi, & Gilbert, 1990; Swann, Wenzlaff, Krull, & Pelham, 1992).

We believe that our feedback procedure combines aspects of both self-verification and self-enhancement. In giving MMPI-2 results to clients, we often confirmed aspects of clients' self-schemata that had not been previously verified by others. The power of this seemed reflected in clients' written and verbal comments after the feedback session. One client wrote, "It is

relieving to know that most of the criticism and positive aspects of myself were reflected on the test. It tells me that most of how I view myself is legitimate and not fabrications." This same theme is echoed in another client's comments: "[The MMPI-2 results] put words to my feelings. It confirmed my feelings about the aspects of my personality that we discussed. . . I am feeling relieved."

In addition to verifying clients' self-conceptions, however, we offered them self-enhancing feedback. This aspect of the feedback was reflected in some direct praise (e.g., we started interpretive sessions by saying something positive to clients, even if only that they had been cooperative and truthful and that this had been greatly appreciated). At times during feedback sessions, we offered positive interpretations by "reframing" clients' existing self-concepts in light of test results (e.g., a client who had seen herself as "lazy" because she was having trouble getting up in the morning was told that this was actually a manifestation of her "depression"). Last, and we think most important, a self-enhancing environment was maintained with clients while discussing their problems. As one client commented, "I expected such judgment, and I received such compassion. . . It makes me think that I am worthy of such compassion from myself also."

Self-verification theory would clearly predict that a procedure combining self-verifying and self-enhancing feedback would be highly desired by clients and that it would increase feelings of well-being. However, Swann and his colleagues have been at a loss to say how one might combine both of these aspects for clients with negative self-views, because positive feedback is often nonverifying. We believe that by creating a positive emotional tone, while verbally offering self-confirming (and often negative) feedback, that our procedure successfully solves this quandary.

We hypothesize, however, an additional therapeutic element to our feedback procedure, one that goes slightly beyond self-verification theory as currently stated by Swann and his colleagues. We suspect that clients in our study benefited not only from having their existing self-schemata verified but also from being exposed to additional ways of thinking about themselves that were new but not in conflict with their existing self-definitions. For example, a client with a 4-3 MMPI-2 code type may have already known that she has difficulties sustaining long-term relationships and often feels cheated by partners. In our MMPI-2 feedback session we would have verified such a self-schema but also have offered an additional concept—that such difficulties are common among people with similar MMPI-2 scores because they have severe conflicts about exposing their dependency needs. We would then have explained the dilemma of 4-3 clients in greater detail (i.e., that they very much wish to be taken care of by others but have great difficulty asking for what they want in relationships) and have gone on to make predictions about which situations might most exacerbate such conflicts and have asked the client to confirm or disconfirm our predictions.

We have observed that when such interventions are successful (i.e., that our hypotheses are both accepted and confirmed with additional data by clients), that clients are greatly relieved. We believe this is because clients have adopted a higher order self-definition that organizes disparate self-perceptions and

leads to predictions about how behavior needs to change for problems to decrease (e.g., for the client with the 4-3 profile, becoming more comfortable with asking for things directly may help decrease feelings of being cheated in relationships). We further believe that this "naming" and "explaining" of clients' experiences is one of the major therapeutic elements in giving test feedback, in that it helps to organize a personal identity. Again, a client comment seems illustrative:

I feel this testing experience is positive. It is making me more aware of who I am—confirming things I know, mostly, but I also have a few new things to keep in mind and consider. . . It seems clearer who I am.

This aspect of our observations seems to fit best with several psychoanalytic theories, for example, that of Self Psychology, as put forth by Heinz Kohut and his followers (Kohut, 1977, 1984; Wolf, 1988). Self Psychology would probably see our test feedback sessions as an intense experience of "positive, accurate mirroring"—a normal developmental experience of which self psychologists would assert most people seeking mental health services have had little. Self psychologists might predict that our feedback procedure actually helps stabilize and strengthen clients' "self-structures," and that after a feedback session, clients should feel less anxious and less worried about "disintegrating" (i.e., having their self-schemata dissolve in the face of stress or conflicting information).

This theory also resembles that of psychoanalyst Harry Stack Sullivan (1953a, 1953b), who stressed the drive of all persons to maintain their "self-system"—those thoughts and conceptions that define one's identity and protect one's self-esteem. Sullivan felt that the self-system was most likely to change through an experience of "closeness" and "good will" between therapist and client, in which the therapist "spreads a larger context before" the client, "whereupon, in spite of anxiety . . . the self-system can be modified" (Sullivan, 1953b, p. 302).

In conclusion, the present study provides support for the assertion that test feedback itself is therapeutic to clients. Further research is needed to replicate the current findings, to investigate further which aspects of the current assessment were beneficial and to correct some of the limitations in this study's design. In this latter area, future research should separate the administration of the MMPI-2 and the giving of test feedback. In the current study, clients in the control group were not administered the MMPI-2 because of the shortage of staff and what we view as an ethical necessity: to give feedback to every client who participates in testing. We were willing to make this concession in the design, although it necessarily confounds test feedback with the administration of the MMPI-2, because we thought it unlikely that completing an MMPI-2 would be in itself of therapeutic value. If this were the case, it seems very likely that it would have been noticed by now in the many therapy-outcome and other clinical studies in which the MMPI has been used. However, in future research, this deserves to be tested explicitly. It is possible, for example, that completing the MMPI-2 in the context of waiting for psychotherapy is especially helpful to clients—it may make them feel that they are contributing to their treatment and thus lead to more hope and less distress about their situation. We are at present undertaking a study that separates the administration of the MMPI-2 and the giving of test feedback.

Considering psychological assessment to be a therapeutic intervention is a major paradigm shift in how assessment is typically viewed. Historically, psychological assessment, particularly the MMPI, has been used primarily for diagnosis and treatment planning by clinicians or for evaluating the success of an intervention after it has occurred. The current study would suggest that these uses of assessment can still be valuable but that the impact of assessment does not stop there. As the inscription over the oracle at Delphi instructed, it is important to "know thyself." This study suggests just how valuable and beneficial such knowledge can be.

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Search Opens for Editor of New APA Journal

The Publications and Communications Board has opened nominations for the editorship of a new journal, *Journal of Experimental Psychology: Applied*, for the years 1995-2000. Candidates must be members of APA and should be prepared to start receiving manuscripts early in 1994 to prepare for issues published in 1995. Please note that the P&C Board encourages more participation by members of underrepresented groups in the publication process and would particularly welcome such nominees. To nominate candidates, prepare a statement of one page or less in support of each candidate. Submit nominations to

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The *Journal of Experimental Psychology: Applied* will publish original empirical investigations in experimental psychology that bridge practically oriented problems and psychological theory. The journal also will publish research aimed at developing and testing of models of cognitive processing or behavior in applied situations, including laboratory and field settings. Review articles will be considered for publication if they contribute significantly to important topics within applied experimental psychology.

Areas of interest include applications of perception, attention, decision making, reasoning, information processing, learning, and performance. Settings may be industrial (such as human-computer interface design), academic (such as intelligent computer-aided instruction), or consumer oriented (such as applications of text comprehension theory to the development or evaluation of product instructions).

First review of nominations will begin December 15, 1992.