

Improving the Effects of Psychotherapy: The Use of Early Identification of Treatment Failure and Problem-Solving Strategies in Routine Practice

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Client-focused research systems have been developed to monitor and provide feedback information about clients' progress in psychotherapy as a method of enhancing outcome for those who are predicted to be treatment failures. In the current study, the authors examined whether feedback regarding client progress and the use of clinical support tools (CSTs) affected client outcome and number of sessions attended. Results showed that clients in the feedback plus CST group stayed in therapy longer and had superior outcomes. Nearly twice as many clients in the feedback plus CST group achieved clinically significant or reliable change, and fewer were classified as deteriorated by the time treatment ended.

Attempts to provide quality assurance for clients receiving psychotherapy are a worldwide phenomenon. In a special section of the *Journal of Consulting and Clinical Psychology*, quality assurance research programs in the United States (Beutler, 2001; Lambert, Hansen, & Finch, 2001; Lueger et al., 2001), Great Britain (Barkham et al., 2001), and Germany (Kordy, Hannover, & Richard, 2001) were described. A common feature among each of these systems is an emphasis on patient-focused research. This methodology endeavors to improve psychotherapy outcome by monitoring client progress and providing this information to clinicians to guide ongoing treatment. Patient-focused research, therefore, is an extension of quality assurance and represents one effort to bridge the gap between efficacy and effectiveness research and clinical practice (Lambert, 2001).

One of the aforementioned systems has evaluated the effects of providing therapists with feedback about client improvement through the use of progress graphs and warnings for clients who were failing to demonstrate expected treatment responses (Lambert, Whipple, et al., 2001; Lambert, Whipple, Vermeersch, et al., 2002). The research issue of interest in these studies was whether feedback on client progress improves outcome and attendance. The simple hypotheses tested were as follows: (a) Clients predicted to

have a poor treatment response and whose therapist received feedback will show better outcome than similar clients whose therapist did not receive feedback, and (b) clients whose therapists received feedback will show better attendance (i.e., attendance representative of cost-effective psychotherapy) than similar clients whose therapist did not receive feedback.

When data from both studies were combined, results indicated that clients fared better when feedback was provided. Feedback to therapists improved outcome and increased attendance for clients who were identified early as non-responders to treatment. Improved outcome appeared to result from the effects of keeping failing clients in treatment longer. For clients who were identified as making adequate treatment progress, feedback decreased the number of treatment sessions without affecting final outcome. These findings suggest that outcome is improved and treatment resources are more efficiently allocated when feedback on client progress is provided to therapists. The implications of this research may have an enormous impact on mental health care providers, clinicians, and clients after their application in routine clinical practice (Brown, Burlingame, Lambert, Jones, & Vaccaro, 2001).

However, the positive findings in these studies were moderated by the fact that the majority of clients predicted to have a poor outcome and whose therapist received feedback did not attain a satisfactory outcome at termination, even though their improvement surpassed that of clients whose therapist did not receive feedback. This suggests that a strengthened feedback manipulation is necessary if a better psychotherapy outcome is desired for clients predicted to have a poor treatment response. Over the last 25 years, comparable methods have been used in medical research and practice to manage interventions related to drug dosage, diagnosis, preventive care, and client outcomes. These interventions are often used in a stepwise approach that assists physicians in decision making and provides recommendations to improve the quality of client health care (Hunt, Haynes, Hanna, & Smith, 1998).

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The current study sought to improve outcome further for clients predicted to have a poor psychotherapy response through the provision of clinical support tools (CSTs) in addition to feedback on client progress. The CSTs were proposed as an empirically based problem-solving strategy and arranged hierarchically in a decision tree designed to systematically direct therapists' attention to certain factors known to be important in psychotherapy outcome. These factors, which may or may not be of particular concern with a specific client, were obtained from research within the psychotherapy literature.

Empirical support for the importance of the therapeutic relationship in outcome spans four decades and more than 100 published research articles. It is often acknowledged as the primary curative factor in successful psychotherapy. Of specific interest is the correlation between outcome and early ratings of the therapeutic relationship. Numerous studies have demonstrated that client ratings of the therapeutic relationship between the third and fifth sessions are significantly related and possibly the best predictors of treatment outcome (Orlinsky, Grawe, & Parks, 1994). These data suggest that when a client shows a negative treatment response therapists need to be particularly alert to the client's level of comfort and satisfaction with the therapeutic relationship (Hill, Nutt-Williams, Heaton, Thompson, & Rhoads, 1996).

Poor treatment response may also reflect the possibility that a client has entered psychotherapy in a less-than-favorable stage of readiness to change (Prochaska, DiClemente, & Norcross, 1992). Prochaska and Prochaska (1999) suggested that by matching therapeutic techniques with a client's readiness to change final outcomes could be improved. Similarly, and in specific relation to participants in this study, Drum and Baron (1998) found that final outcome could be predicted and enhanced by assessing a client's readiness to change and matching it with appropriate therapeutic interventions.

Clients predicted to have a poor outcome may not have adequate social support networks to initiate or maintain gains acquired in therapy. The adequacy of social support is directly related to a client's reported severity of symptoms and can mediate stressful life events and the development of psychological symptoms (Monroe, Imhoff, Wise, & Harris, 1983). This information is consistent with findings that report that 40% of the variance in therapy outcome is due to extratherapeutic factors (Lambert, 1992). For clients with inadequate social support, therapists may need to identify the resources that they already have in their current life and attempt to activate or modify them to achieve a better treatment outcome (Bankoff & Howard, 1992).

Finally, reevaluating diagnostic formulations (e.g., Eells, 1997) and referring for medication (e.g., Trivedi & Kleiber, 2001) are suggested as other possible treatment interventions that therapists may use to improve treatment outcome with nonresponding clients.

Therefore, the CSTs used in the current study were composed of resources intended to assist therapists in assessing the quality of the therapeutic relationship, client motivation to change and its match to treatment tactics, the client's social support network, accuracy of the diagnostic formulation, and the appropriateness of a referral for medication.

The current study tested the effect of CSTs (as an additional component of feedback) that therapists might use when informed about a client's poor progress. Like other quality assurance studies,

the patient-focused methodology used in this study attempted to understand and enhance client outcome in the context of routine clinical practice. This method has implications for the design and interpretation of the results, because random assignment was not made to the experimental group for which therapists used the CSTs. Thus, the study included both experimental and quasi-experimental conditions. Two questions were addressed: (a) Do clients whose therapists receive feedback about client progress and use of CSTs improve more than those in feedback and no-feedback conditions? (b) Does feedback and the use of CSTs increase client attendance rates more than in the feedback and no-feedback conditions?

Method

Participants

Participants were 981 clients of a possible 1,339 treated in a university counseling center. All clients who sought treatment at the counseling center were informed that their responses to questionnaires might be used for programmatic research and evaluation of services. The final sample excluded 358 participants because they either never completed an outcome measure or did not return for a second session. These figures are consistent with routine practice across settings that show that a median of 1 session is attended (Garfield, 1994) and with clinical trials that exclude even larger numbers of participants (Westen & Morrison, 2001). The final sample ranged in age from 18 to 54 years ($M = 22.88$ years, $SD = 3.54$ years). Of this sample, 66% were female; 86% were Caucasian, 4.8% Hispanic, 2.1% Pacific Islander/Asian, 0.6% African American, and 6.5% other or mixed ethnicity. Approximately half ($n = 499$) were randomly assigned to the experimental (feedback) group, and the remaining ($n = 482$) were randomly assigned to the control (no-feedback) group. Statistical tests revealed no significant differences between the experimental and control groups on any of the demographic variables. Clients were all referred or self-referred for personal concerns rather than career or academic counseling. The treating clinician routinely diagnoses clients in the counseling center, and no attempt was made to have clients undergo research-based diagnostic evaluations. Overall 74.6% of clients were diagnosed, whereas 25.4% had their diagnosis deferred at intake and never had a formal diagnosis recorded in the database. Those receiving a formal clinical diagnosis had a mood disorder (29.2%), adjustment disorder (12.4%), anxiety disorder (10.1%), or eating disorder (7.0%). Thirty-five percent of clients had a V code diagnosis, whereas the rest of the participants (6.3%) received a variety of other disorder classifications.

Clients were assigned to therapists through routine intake procedures without regard to their assignment to either control or experimental group designation. Therapists were 48 counseling center staff consisting of 27 doctoral level psychologists and 21 doctoral students in training, including interns. Three additional therapists refused participation in this study; the rest gave informed consent, as did clients, who signed a consent form. Therapists had a variety of treatment orientations; most subscribed to an integration of two or more theoretical systems. The most common orientations were cognitive-behavioral (50%), psychodynamic-interpersonal (20%), humanistic-existential (20%), behavioral (2%), or other (8%). Therapists were either salaried employees of the university or students in training and did not receive a direct fee for the services provided. Because it was assumed that each therapist would see an equal number of clients in the control and experimental conditions, no steps were taken to alleviate potential therapist assignment effects. This assumption was tested through the use of the Wilcoxon signed ranks test, which indicated that each therapist saw an equivalent number of clients in the experimental and control conditions ($n = 48$, $z = 1.28$, $p > .05$).

Measures

Psychological dysfunction was assessed using the Outcome Questionnaire-45 (OQ-45; Lambert, Hansen, et al., 1996), which provided both the measure of weekly change on which the feedback to therapists was based and the criterion measure for classification of clients into outcome groups (improvers, no-changers, and deteriorators). The OQ-45 was designed to measure client progress in therapy by repeated administration during the course of treatment and at termination. The OQ-45 provides a total score, based on all 45 items with each item scored, as well as three subscale scores: Subjective Discomfort (intrapsychic functioning, e.g., "I feel blue"), Interpersonal Relationships (e.g., "I feel lonely"), and Social Role Performance (e.g., "I feel stressed at work/school"). Each item is rated on a 5-point Likert scale; high scores indicate more disturbance. Only the OQ-45 total score, which provides a global assessment of client functioning, was used in the current study.

The OQ-45 has been reported to have adequate reliability and validity across a number of settings and clinical and normative populations. Research has indicated that the OQ-45 is a psychometrically sound instrument, with test-retest reliability ($r = .84$; Lambert, Burlingame, et al., 1996) and excellent internal consistency (Cronbach's $\alpha = .93$; Lambert, Hansen, et al., 1996). In the current sample ($n = 981$), Cronbach's alpha was $.92$. The OQ-45 has also been demonstrated to have strong concurrent validity coefficients ranging from $.55$ to $.88$ (all significant at $p < .01$) on the Symptom Checklist-90—Revised, Beck Depression Inventory, Zung Depression Scale, Taylor Manifest Anxiety Scale, State-Trait Anxiety Inventory, Inventory of Interpersonal Problems, and the Social Adjustment Scale. Furthermore, the OQ-45 has been shown to be sensitive to change in clients over short time periods while remaining stable in untreated individuals (Vermeersch, Lambert, & Burlingame, 2000). Repeated testing of persons has been found to have little effect on OQ-45 test scores (Durham et al., 2002).

Using formulas developed by Jacobson and Truax (1991), Lambert, Hansen, et al. (1996) analyzed clinical and normative data for the OQ-45 to provide cutoff scores for the Reliable Change Index and clinically significant change. Clients who change in a positive or negative direction by at least 14 points are regarded as having made reliable change. This degree of change exceeds measurement error based on the reliability of the OQ-45 and is one of two criteria posited by Jacobson and Truax as indicative of clinically meaningful change. The second criterion requires movement from a score typical of a dysfunctional population to a score typical of a functional population (Kendall, Marrs-Garcia, Nath, & Sheldrick, 1999). The cutoff on the OQ-45 for demarcating the point at which a person's score is more likely to come from the dysfunctional population than a functional population has been estimated to be 64. When a client's score falls at or below 63, it is concluded that their functioning is more similar to nonclients than clients at that point in time. Passing this cutoff (from dysfunctional to functional) is the second criterion posited by Jacobson et al. as an indicator of clinically significant change. Clients who show reliable change and pass the cutoff are considered recovered, whereas those who show only reliable change are considered improved. Support for the validity of the OQ-45's reliable change and clinical significance cutoff scores has been reported by Lunnen and Ogles (1998) and Beckstead et al. (2001).

CSTs

Three instruments were chosen for their psychometric properties and ease of use and were included as CSTs to measure whether a client was experiencing an average or below-average therapeutic relationship, motivation to change, or social support network. The therapeutic relationship and social support network were determined to be below average if the client scored 1 standard deviation below the reported mean for these two measures. Below-average motivation to change was evidenced by a client's

scoring in the precontemplation or contemplation stage of readiness to change.

The Revised Helping Alliance Questionnaire (HAQ-II) is a brief self-report instrument that measures the alliance between client and therapist (Luborsky et al., 1996). The HAQ-II consists of 19 items that tap various aspects of the therapeutic alliance (Luborsky, 1976). Internal consistency for the HAQ-II has been reported to be high (Cronbach's $\alpha = .90$) and was found to be $.84$ in the current sample ($n = 43$). Likewise, test-retest reliability has been found to be high for the HAQ-II over three sessions. From Session 2 to 5, Luborsky reported a correlation of $.78$. Concurrent validity estimates are also adequate. Client self-reports on the HAQ-II and the California Psychotherapy Alliance Scales (CALPAS) ranged between $r = .59$ to $r = .71$ (all significant at $p < .001$), depending on the session assessed.

The Stages of Change Scale (SCS) is a measure of a client's readiness to change as based on the four-stage model developed by McConaughy, Prochaska, and Velicer (1983). Eight items, scored on a 5-point Likert scale, measure each stage. For ease of scoring and interpretation, the stage with the highest overall score was used to determine the client's readiness to change. Internal consistency estimates for the SCS have been reported to be sufficient, with Cronbach's α ranging from $.79$ to $.84$ (McConaughy et al., 1983). In the current sample ($n = 43$), the alpha coefficient was $.83$.

The Multidimensional Scale of Perceived Social Support (MSPSS) is a 12-item inventory designed to measure three sources of perceived social support: family, friends, and significant other (Zimet, Dahlem, Zimet, & Farley, 1988). The MSPSS is psychometrically sound with internal reliability coefficients (Cronbach's α) of $.87$, $.85$, $.91$, and $.88$ for the Family, Friends, and Significant Other subscales and total scale, respectively. In the current sample ($n = 44$) the alpha coefficient was $.91$ for the total score. Test-retest estimates were between $r = .72$ and $r = .85$ for each of the subscales and total scale (Zimet et al., 1988).

Design and Procedure

Participating therapists were informed that the purpose of the study was to test the effects of feedback and that they would receive feedback only on approximately half of their client load. Each therapist was given an orientation to the study and a color-coded chart of the feedback, which included the messages appropriate for all four color codes:

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|------------------|--|
| White feedback: | “The client is functioning in the normal range. Consider termination.” |
| Green feedback: | “The rate of change the client is making is in the adequate range. No change in the treatment plan is recommended.” |
| Yellow feedback: | “The rate of change the client is making is less than adequate. Recommendations: Consider altering the treatment plan by intensifying treatment, shifting intervention strategies, and monitoring progress especially carefully. This client may end up with no significant benefit from therapy.” |
| Red feedback: | “The client is not making the expected level of progress. Chances are that he or she may drop out of treatment prematurely or have a negative treatment outcome. Steps should be taken to carefully review this case and decide on a new course of action.” |

For simplicity of communication in the clinical setting, those clients receiving a red or yellow message were referred to as *signal* clients. This

is a term that has precedence in other research aimed at improving the quality of client care (Kordy et al., 2001). In this report four acronyms are used to identify the four treatment conditions that were examined. Clients not progressing as expected were further categorized into two groups depending on whether their therapist received feedback. Clients whose therapist received feedback are referred to as the not-on-track feedback group (NOT-Fb); clients whose therapist did not receive feedback are referred to as the not-on-track no-feedback group (NOT-NFb) clients whose therapist received only green- or white-coded messages (i.e., who progressed as expected) are referred to as the on-track feedback group (OT-Fb); clients who were on track but whose therapist was not informed are referred to as the on-track no-feedback group (OT-NFb).

For the feedback (experimental) groups, once a client took the OQ-45 and completed a session of treatment, decision rules were used to generate feedback. The decision rules were based on a client's intake score (initial level of disturbance), number of treatment sessions completed, and amount of change noted at the most recent session compared with the initial score. For a full description of the development and implementation of the decision rules, refer to Lambert, Whipple, Bishop, et al. (2002). The exact cutoff scores for determining how much change and by which session of therapy, and taking into account the initial OQ-45 score, were based on expert judgments and information on dose-response analysis, survival analysis, and hierarchical linear modeling (Lambert, Hansen, & Finch, 2001). These cutoff scores were established by Lambert, Whipple, Bishop, et al. (2002) independently and before the current study.

Feedback to therapists consisted of a progress graph that included all the client's scores up to that point in time and 1/4-in. colored stick-on dots (red, yellow, white, green) that were used to visually catch the therapist's attention and immediately convey the status of client progress. Clients completed their first OQ-45 during the intake procedure and subsequent OQ-45s before each treatment session. Each time an OQ-45 was administered, an updated graph and a colored dot were given to the therapist and placed in the client's chart.

When the decision rules identified a client as NOT (red or yellow warning), therapists had the option of using the CST, which included a decision tree (see Appendix), CST measures, a list of possible interventions, and a tracking form (this latter form is available from Michael J. Lambert on request). If a therapist asked the client to complete one of the CST measures, it was scored by a research assistant and returned to the therapist with a brief message about the results before the client's next therapy session. For example, if a NOT-Fb client was given the clinical support measures and scored below average on the helping alliance CST measure, the therapist then examined the list of suggestions for strengthening the relationship (e.g., discuss the clients ratings of the relationship, explore relationship ruptures). If the client's alliance rating was not below average, the therapist would proceed to evaluation of client motivation and so forth. It should be noted that the procedures used in the current study resulted in a client group that was NOT whose therapists received feedback and then used their clinical judgment to decide whether they wanted to use the clinical tools with a particular client. Clients who made up this group were selected by their therapist.

To further influence therapists' decisions and actions as recipients of feedback, a tracking form was given to therapists as soon as a client was identified as NOT. This survey form was seen as part of the experimental manipulation because it listed actions that might be taken by therapists and, therefore, could affect the way therapists treated clients who were not showing adequate progress (e.g., Did you discuss the OQ-45 feedback with the client? Did you consult about the case with other professionals? Did you alter the treatment plan?). No tracking form was given to therapists whose clients were OT or in the control group (NOT-NFb). The tracking forms were collected from therapists approximately 2 weeks after they received it. No methods were used to independently monitor therapists' actual use of the CSTs or decision tree.

Although the nature of the feedback was a function of the number of sessions completed, the current level of client distress in relation to distress at intake, and the assumed likelihood that the client would fail to recover, no attempts were made to manage clinicians' actions in relation to the feedback or use of the CSTs. Therapists used the clinical tools if they deemed it necessary. Furthermore, therapists were free to use their judgment to terminate treatment when it seemed appropriate. In this treatment setting, there was some pressure to be efficient but no urgency about efficiency or contingencies rewarding efficiency (as can be seen in managed care). Treatment was often suspended at the end of the school year because of the necessity for many of the students to return home during the summer months. Most decisions to terminate treatment were client initiated or jointly agreed on. This study was purposely designed to impose as little as possible on the manner in which therapists practiced therapy and to reflect the effect of using feedback and CSTs in routine practice. In this regard, experimental control was deemphasized to maximize ecological validity.

The participants in the experimental (Fb) and control groups (NFb) were divided into groups based on random assignment. These groups were later subdivided depending on client response to treatment (OT or NOT). Those who were in the NOT-Fb received either a yellow or red warning at some time during treatment. Those who were in the NOT-NFb qualified for a warning, but, because of their status as controls no warning was given. OT-Fb clients qualified for white or green feedback during treatment without ever receiving a yellow or red warning. OT-NFb clients qualified for a green or white message, but it was withheld because of their status as control clients. Because the current study was designed to determine whether the use of CSTs in addition to feedback improved the outcome status of those clients who were predicted to have a poor outcome (NOT clients), an additional group was created by examining cases from the NOT-Fb condition if the therapist used the CSTs. This subgroup is referred to as NOT-Fb+CST. The NOT-Fb condition started with 147 clients. After 59 clients were removed to form the NOT-Fb+CST group, 88 clients remained in the NOT-Fb condition, whereas the NOT-NFb group totaled 131.

Analysis

The effects of feedback on outcome were evaluated in two ways. First, using residual gain scores, comparisons between the NOT treatment conditions (NOT-Fb+CST, NOT-Fb, and NOT-NFb) were conducted using analysis of covariance (ANCOVA). Second, ANCOVAs were also used to assess client improvement after the provision of feedback. To analyze differences in session length between the treatment conditions and OT/NOT status groups, analyses of variance (ANOVAs) were conducted. Because treatment length was indeterminate and the client frequently initiated termination, the final outcome status of clients was determined on the basis of the last available OQ-45 in the client's file. This procedure probably underestimates the total amount of change, given that OQ-45 data were not collected after the final session of treatment; however, it ensures much greater data collection than pretest-posttest methods.

Results

Pretreatment

The mean pretreatment OQ-45 total scores for the Fb (experimental) groups and the NFb (control) groups were 71.23 ($SD = 23.03$) and 70.50 ($SD = 22.33$), respectively. This difference was not statistically significant, $t(979) = 0.503, p > .05$. The NOT groups (NOT-Fb+CST, NOT-Fb, and NOT-NFb) had higher OQ-45 scores at intake than their OT (OT-Fb and OT-NFb) counterparts ($M = 78.64, SD = 20.94$ and $M = 67.80, SD = 22.62$, respectively). This difference reached statistical sig-

nificance, $t(979) = 6.903, p < .05$, and suggests, as expected, that the NOT clients were more disturbed as a group at the beginning of treatment than OT clients (i.e., those who show poor treatment response tend to be more disturbed at intake). Whereas 57.8% of the OT clients began treatment in the dysfunctional range, 74.5% of the NOT participants began in this same range. Pretreatment scores in the OT groups ranged from 11 to 140, whereas those in the NOT groups ranged from 18 to 130. No OQ-45 pretreatment differences were noted between the NOT participants in the treatment and control conditions (NOT-Fb+CST: $M = 83.15, SD = 20.51$; NOT-Fb: $M = 77.81, SD = 21.65$; NOT-NFb: $M = 77.16, SD = 20.51$), $F(2, 275) = 1.777, p > .05$. This was also true for the participants representing the OT treatment and control conditions (OT-Fb: $M = 67.59, SD = 22.77$; OT-NFb: $M = 68.01, SD = 22.50$), $t(701) = .512, p > .05$. Therefore, randomization procedures appeared to be effective at creating comparison groups that were reasonably equivalent at pretreatment before the experimental manipulations.

Over the course of therapy, clients seen at the counseling center ($n = 981$) during this study improved, with an average change of -12.52 OQ-45 points, $t(980) = 20.020, p < .05, d = .55$. Those who began therapy in the functional range ($n = 368$) had an average change of -4.12 points ($SD = 17.15$). Considering only clients who began treatment in the dysfunctional range ($n = 613, 62.5%$; i.e., those who started counseling with an OQ score of 64 or greater), the improvement was even larger ($M = 17.56, SD = 19.24$), $t(612) = 22.600, p < .05, d = .98$. Of these "dysfunctional" clients, 36.9% were classified as having achieved clinically significant change by the end of therapy, whereas an additional 17.3% achieved only reliable change. After receiving an average of 6.20 ($SD = 5.29$) sessions of treatment, 44.4% of clients scored within the functional range (i.e., at or below an OQ-45 total score of 63). Treatment effects of this magnitude are typical if not higher than those reported in other college counseling centers. For example, Drum and Baron (1998) reported the preliminary results of a national study of counseling centers (Research Consortium of Counseling Services in Higher Education) that examined outcomes across 35 centers using the OQ-45. They found similar pretreatment and posttreatment scores with a smaller dosage of therapy ($M = 3.52$ sessions). Descriptive statistics for OQ-45 scores and attendance data are presented in Table 1.

The Effect of Feedback on Outcome

If the CSTs were to be considered effective, the NOT-Fb+CST group would have greater pre-post change in OQ-45 scores (in the direction of improvement) than the NOT-Fb and NOT-NFb groups. Results from an ANCOVA with the pretreatment OQ-45 score as a covariate showed that a significant difference existed between the NOT groups, $F(2, 274) = 8.394, p < .05$. Least significant difference post hoc comparisons indicated that the NOT-Fb+CST group improved significantly more than the NOT-Fb group (mean difference = 6.60, $SD = 3.78, p < .05$), and the NOT-Fb group improved significantly more than the NOT-NFb group (mean difference = 5.19, $SD = 3.77, p < .05$). The mean difference in pre-post change between the NOT-Fb+CST and NOT-NFb was 11.79 ($SD = 2.92, p < .05$). No differences in improvement were found between the OT-Fb and OT-NFb groups, $F(1, 700) = 1.610, p > .05$. The effect size was .70 for the

NOT-Fb+CST group versus the NOT-NFb group and .28 for the NOT-Fb group versus the NOT-NFb group, which are medium effect sizes according to Lipsey's (1990) criteria.

Client improvement between NOT groups after the time at which feedback was given was also analyzed using ANCOVAs. The mean OQ-45 score of clients when their therapists were given feedback was 92.32 ($SD = 17.00$) in the NOT-Fb+CST group 87.66 ($SD = 15.00$) in the NOT-Fb group, and 87.91 ($SD = 14.50$) in the NOT-NFb group. This difference was not statistically significant, $F(2, 275) = 2.053, p > .05$. At termination the NOT-Fb+CST group averaged 67.75 ($SD = 23.61$), the NOT-Fb group 71.3 ($SD = 23.23$), and the NOT-NFb group 76.11 ($SD = 20.26$). Point of feedback to post-treatment differences between the three groups reached statistical significance, $F(2, 275) = 9.074, p < .05$. Least significant difference post hoc comparisons revealed that the NOT-Fb+CST group improved significantly more than the NOT-Fb group (mean difference = 8.21, $SD = 3.23, p < .05$), but the NOT-Fb group did not improve significantly more than the NOT-NFb group (mean difference = 4.57, $SD = 2.64, p > .05$). These changes are presented in Figure 1, which illustrates that the NOT-NFb clients, on average, worsened to the point at which their therapists could have been warned about their poor progress and then showed some improvement. The NOT-Fb clients showed a similar worsening to the point of feedback followed by more noticeable improvement. Likewise, the NOT-Fb+CST clients worsened to the point of feedback but improved even more at posttreatment.

Analysis of Clinical Significance

To further explore the clinical importance of outcome in the NOT groups, clients were categorized with regard to the clinical significance of their change. These data are presented in Table 2. The differences in the frequency with which clients were assigned to outcome classification categories reached statistical significance when tested with the chi-square statistic. It appears that 8.5% of those in the NOT-Fb+CST group deteriorated, 42.4% showed no change, and 49.2% improved or recovered compared with 13.6%, 53.4%, and 33.0% in the NOT-Fb group, respectively, and 19.1%, 55.7%, and 25.2% in the NOT-NFb group, respectively. If there is, in fact, a causal relationship between the use of feedback and CSTs on final therapy outcomes, these results suggest that the effects are powerful enough to change the levels at which clients are classified as having met the rigorous definition of clinically meaningful change.

The Effects of Feedback on Amount of Psychotherapy

Differences in treatment length (see Table 1) between the feedback conditions and OT/NOT status groups were analyzed using ANOVA. Although the rates of attendance were not significantly different between the Fb (experimental) and NFb (control) conditions, $F(1,977) = 1.137, p > .05$, there was a significant difference in the number of sessions attended between clients for both the OT versus all three of the NOT groups (regardless of receiving the Fb or NFb manipulation). Clients in the NOT groups received on average 4.12 ($SD = 9.80$) more sessions than OT clients, $F(1, 977) = 198.991, p < .05$. A significant interaction (Feedback/No Feedback \times OT/NOT) suggested that participants in the NOT-

Table 1
Means and Standard Deviations of Outcome Questionnaire–45 (OQ-45) Scores and Duration Data

Group	n	Pretreatment OQ-45		Posttreatment OQ-45		Total duration		Duration after feedback	
		M	SD	M	SD	M	SD	M	SD
Total Fb	499	71.23	23.03	58.15	22.25	5.47	4.86	5.82	5.76
Total NFb	482	70.50	22.33	58.56	23.38	5.46	4.88	4.50	4.83
Total NOT	278	78.64	20.94	72.81	22.14	8.66	5.67	5.20	5.38
Total OT	703	67.80	22.62	52.63	20.41	4.20	3.84	NA	
NOT-Fb+CST	59	83.15	20.51	67.75	23.61	12.02	6.73	8.86	6.78
NOT-Fb	88	77.81	21.65	71.30	23.23	7.44	4.66	3.84	3.92
NOT-NFb	131	77.16	20.51	76.11	20.26	7.96	5.21	4.50	4.83
OT-Fb	352	67.59	22.77	53.25	19.84	3.88	3.14	NA	
OT-NFb	351	68.01	22.50	52.01	20.98	4.53	4.41	NA	
Total	981								

Note. Fb = feedback; NFb = no feedback; NOT = not on track; OT = on track; NOT-Fb+CST = clients who were not on track and whose therapists received feedback and used the clinical support tools; NOT-Fb = clients who were not on track and whose therapists received feedback; NOT-NFb = clients who were not on track and whose therapists did not receive feedback; OT-Fb = clients who were on track and whose therapists received feedback; OT-NFb = clients who were on track and whose therapists did not receive feedback.

Fb+CST and NOT-Fb groups combined received more treatment than those in the NOT-NFb condition, whereas OT-Fb clients received fewer sessions than OT-NFb cases, $F(1, 977) = 9.855$, $p < .05$.

Another session-related analysis showed that all three of the NOT groups qualified for a warning at the third session (NOT-Fb+CST: $M = 3.25$, $SD = 1.85$; NOT-Fb: $M = 3.60$, $SD = 2.47$; NOT-NFb: $M = 3.46$, $SD = 2.03$). The difference between these means was not statistically significant, $F(2, 275) = 0.466$, $p > .05$. However, there was a significant difference in the number of sessions received after the warning feedback between the NOT groups, $F(2, 275) = 19.071$, $p < .05$. Least significant difference post hoc comparisons revealed that the NOT-Fb+CST group received significantly more sessions than the NOT-Fb group (mean difference = 4.92, $SD = 10.32$, $p < .05$) and the NOT-NFb

group (mean difference = 4.26, $SD = 10.93$, $p < .05$), but the NOT-Fb group did not receive more sessions than the NOT-NFb group (mean difference = .66, $SD = 10.31$, $p > .05$).

Therapist Effects on Outcome and Amount of Psychotherapy

Because no experimental control was exercised over which therapists used the CSTs at any time during the study, we analyzed the differences in outcome and attendance rates between therapists who used CSTs and those who did not. It was thought that these analyses would help to rule out therapist effects as an explanatory factor in the positive outcome and attendance results. To test for therapist effects, differences between therapists who used the CSTs ($n = 26$) with at least one client and those who never used

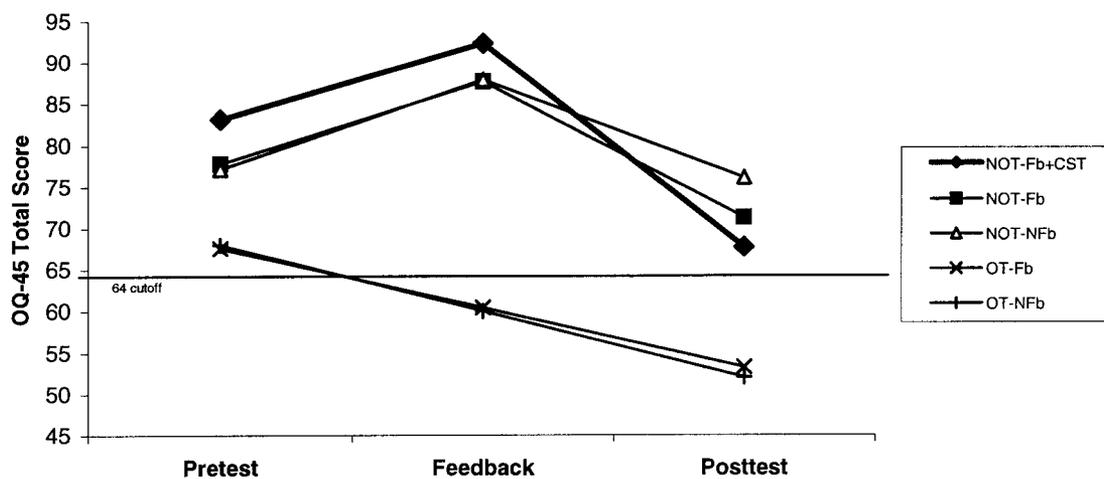


Figure 1. Change from pre- to posttesting of not-on-track (NOT) and on-track (OT) clients. Fb = feedback; CST = clinical support tools; NFb = no feedback; OQ-45 = Outcome Questionnaire–45.

Table 2
Percentage of NOT-Fb+CST, NOT-Fb, and NOT-NFb Clients Meeting Criteria for Clinically Significant Change at Termination

Outcome classification	NOT-Fb+CST		NOT-Fb		NOT-NFb		χ^2
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	
Deteriorated ^a	5	8.5	12	13.6	25	19.1	11.78 ^c
No change	25	42.4	47	53.4	73	55.7	
Reliable or clinically significant change ^b	29	49.1	29	33.0	33	25.2	

Note. NOT-Fb+CST = clients who were not on track and whose therapists received feedback and used the clinical support tools; NOT-Fb = clients who were not on track and whose therapist was given feedback; NOT-NFb = clients who were not on track and whose therapist did not receive feedback.

^aWorsened by at least 14 points on Outcome Questionnaire-45 from pretreatment to posttreatment. ^bImproved by at least 14 points on Outcome Questionnaire-45 or improved and passed the cutoff between dysfunctional and functional populations. ^c $df = 4, N = 278, p < .05$.

the CSTs ($n = 23$) were compared on outcome and session data for clients in the control conditions (OT-NFb and NOT-NFb).

ANCOVA results indicated there were no differences in outcome between the therapists who did and did not use the CSTs (mean difference in client outcome = .853, $SD = 37.41$), $F(1, 481) = 0.251, p > .05$. Similarly, ANOVA results for the attendance data indicated no difference between therapists who did and did not use the CSTs (mean difference in total number of sessions attended = .349, $SD = 10.01$), $F(1, 481) = 0.583, p > .05$. These analyses suggest that the observed results in outcome and attendance data for the NOT-Fb+CST condition are probably not due to therapists who used the CSTs having superior outcomes and increased attendance rates across other cases (e.g., their general effectiveness).

Additional therapist analyses were performed to determine whether therapists' level of training (professional staff or supervised trainees) and use of the CSTs produced significant differences in outcome or attendance rates. However, there was no relationship between level of training and use of the CSTs, and no significant main effects or interactions were found in the outcome- or session-related analyses. Consequently, therapist training was dropped as a possible covariate and an independent variable from the reported ANCOVA and ANOVA models.

Discussion

We tested the effects of providing therapists with CSTs in addition to feedback when treating clients predicted to have a poor treatment outcome. The decision rules used in this study identified about 28.3% of clients as making inadequate progress, which is about 9.5% greater than found in previous studies (Lambert, Whipple, et al., 2001; Lambert, Whipple, Vermeersch, et al., 2002). This rate is consistent with the tolerance bands for identifying red/yellow cases (Finch, Lambert, & Schaalje, 2001); when one considers that about 6.2% of the clients ultimately were rated as deteriorated, this percentage is consistent with the number of clients identified as having a negative outcome in past reviews of psychotherapy research (Lambert & Bergin, 1994; Mohr, 1995). Nevertheless, the number of identified clients is small enough that intensive efforts to manage their progress would not be difficult in most clinical settings. However, counseling center clientele are at

the less severely disturbed end of the mental health continuum for clinical samples (Lambert, Hansen, et al., 1996). Other settings such as community mental health centers, are likely to identify a higher rate of clients who are predicted to fail based on the decision rules used in this study. The actual number of clients who would be identified for management will likely vary among settings.

We anticipated that the group of clients whose therapists received feedback on client progress, and used CSTs, and whose positive response to therapy was in doubt, would show greater improvement than similar clients whose therapists received feedback but did not use CSTs (Howard, Moras, Brill, Martinovich, & Lutz, 1996; Lambert, Whipple, et al., 2001; Lambert, Whipple, Vermeersch, et al., 2002). The results of the current study provide support for this hypothesis. The average outcome for clients who were NOT and whose therapist was alerted and used the CSTs (NOT-Fb+CST) was better than for NOT clients when only feedback on progress or no information on progress was provided (NOT-FB and NOT-NFb). These differences reached statistical significance, with feedback and the use of CSTs showing a medium effect according to Lipsey's (1990) criteria. In fact, the effect size was larger ($d = .7$ vs. $d = .2$, Cohen's $q = 4.57, p < .05$) than those typically reported in studies that compare different forms of psychotherapy (Lambert & Bergin, 1994; Wampold et al., 1997) and suggests the potential value of systems designed to provide client treatment response information with strategies for enhancing client outcome. In addition, fewer of the NOT-Fb+CST clients were rated as deteriorated at the end of therapy and more were rated as having achieved reliable or clinically significant improvement. These findings support the conclusion that when therapists receive information regarding their clients' progress and use CSTs with nonresponding clients, improvements in outcome are both statistically and clinically meaningful. This study suggests that feedback and CSTs should continue to be studied on a routine basis at this counseling center and that other treatment centers, including managed care, might benefit from experimental implementation of similar systems.

It should also be noted that the NOT-Fb+CST, NOT-Fb, and NOT-NFb clients averaged about 6 points of improvement per session after the point at which feedback was or could have been

given. Unfortunately, in this study, the NOT-Fb and NOT-NFb clients departed from treatment within a few sessions after they qualified for warning (red or yellow) feedback. In contrast, the NOT-Fb+CST clients stayed in therapy an additional 4.5 sessions longer than the previous groups on average. As a result, their improvement could be observed and recorded over more sessions. The failure to find attendance differences between the NOT-Fb and NOT-NFb groups is inconsistent with earlier studies in which a difference in the number of sessions after a warning between the NOT-Fb and NOT-NFb was found (Lambert, Whipple, Vermeersch, et al., 2002). However, the number of sessions received after the warning by the NOT-Fb+CST clients was even larger and more convincing than found in previous studies for NOT-Fb clients. The overall rate of attendance (12 sessions) for NOT-Fb+CST clients approached the number of sessions (13–18) required for 50% of clients to achieve clinically significant change in clinical trials research under optimal treatment conditions (Hansen, Lambert, & Forman, 2002). These results continue to be consistent with the dose–response literature, which shows that benefits from therapy are related to the number of treatment sessions a client attends (Anderson & Lambert, 2001; Howard, Kopta, Krause, & Orlinsky, 1986). Thus, the improved outcome observed in the NOT-Fb+CST condition may have come through an increase in the number of sessions these clients attended as opposed to therapists engaging in distinctly different therapeutic activities as a result of feedback and use of CSTs.

One of the more interesting findings in the current study was a replication of the efficient use of resources found in previous investigations. A significant interaction (Feedback/No Feedback \times OT/NOT) indicated that feedback and the use of CSTs in clinical practice resulted in more sessions for the NOT feedback clients (NOT-Fb+CST and NOT-Fb combined) than NOT-NFb clients and fewer sessions for OT-Fb clients than OT-NFb clients. This result is consistent with earlier research (Lambert, Whipple, et al., 2001; Lambert, Whipple, Vermeersch, et al., 2002), supports the use of feedback as a quality improvement and resource management system with counseling center clientele, and has implications for other clinics and managed-care organizations that are concerned with cost-effective services but use policies that limit treatment arbitrarily and regardless of client response to treatment. The results of this study and prior research suggest that client-focused outcome management may contain costs while increasing services for the more difficult cases.

Client-focused research has a number of inherent limitations in practice applications. The current research is limited to a single self-report measure of improvement and, therefore, only provides one view of the presumed impact of therapy on clients. It also depends on frequent, but brief, assessments measuring client status. Furthermore, decisions regarding the continued provision of treatment should never be made on the basis of questionnaire-based expected treatment–response curves alone. The decision rules used in this study, and the recovery curves on which they are based, can best be seen as one source of information, as fallible indicators of the more comprehensive assessments necessary to make individualized treatment decisions (Meyer, 1998; Strupp, 1996). Clinical trials and effectiveness studies can be, and usually are, much more comprehensive, thereby providing a more complex and perhaps accurate portrayal of change. However, if client-focused outcome research is to have any applicability, it must

remain simple and easy to implement in day-to-day clinical practice. It remains to be seen whether the use of feedback that relies on frequently observed but simple measures of outcome will, in fact, improve treatment when outcome is evaluated with more elaborate systems of client progress.

Several limitations specific to the current study should also be addressed. When the CSTs were presented to the counseling center as an additional component of feedback, some of the therapists were resistant to the idea of having their clients complete measures related to the decision tree and expressed concern that the CSTs would lead to an even greater amount of paperwork than they already had. They were not convinced that the costs of using CSTs were outweighed by any potential benefits. As a result, the counseling center research committee placed one condition on the current study: Utilization of the CSTs would be left up to individual therapists for each of their NOT clients. This condition had two important implications. First, this condition made random assignment between the NOT-Fb+CST and NOT-Fb groups impossible. Second, systematic and stepwise use of the CSTs could not be controlled because therapists could choose to start at any point on the decision tree, give all the measures at once, or move straight to a medication referral without assessing any of the previous areas.

Although therapists were constantly reminded that the CSTs were available for NOT clients through e-mails from the administration and presentations of cases in which the CSTs had assisted a therapist in the treatment of that client, therapists used the CSTs in only 59 (40.1%) of the possible 147 NOT clients in the Fb group. Implementation of the CSTs was further complicated because some therapists reported that their clients refused to complete them. We were not surprised by these reports, because clients tend to adopt their therapist's attitudes. However, this nonrandom selection of clients included in the NOT-Fb+CST condition by therapists and clients may have possibly influenced the outcome differences found in the current study, despite finding no differences in outcome or attendance between therapists who did and did not use the CSTs in the control condition. It may also be the best explanation for the inconsistencies found between the current study and previous research on attendance differences after the first warning message was given to therapists. Clients selected by therapists to participate in the NOT-Fb+CST condition may have received more sessions after the warning feedback and achieved a better outcome regardless of the decision by therapists to use the CSTs. Additional research is needed to address these issues.

Because this was our first attempt to use CSTs in clinical practice, we did not try to collect follow-up measures from the decision tree to determine whether below-average scores on the measures had improved at later sessions or at termination. Consequently, after a therapist used the CSTs there were no procedures in place to let the therapist know when to keep working on a current concern or to move on to another step in the decision tree if a client continued to be signaled as NOT. Application of such a detailed decision tree may be unrealistic in routine practice given that NOT clients are predicted to leave treatment shortly after being identified and therapists may have only a few sessions to use CSTs. The benefit of the current decision tree lies in its ability to quickly guide an assessment of possible treatment concerns and feed this information back to therapists, who can then modify treatment to improve client outcome.

Future research is necessary if we are to understand what components, if any, of the CSTs help therapists to solve poor treatment progress and achieve better outcome with their NOT clients. Replication of this study with populations from other outpatient clinics is an important first step. Random assignment to Fb and Fb+CST groups is also needed to be confident that client selection factors are not responsible for the differences found in the current study. Finally, clinical trials and process research are necessary for a better understanding of how therapists use information from feedback and the CSTs to improve outcome for their NOT clients. We encourage further research on these promising methods.

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Appendix
Clinical Support Decision Tree

