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Providing Patient Progress Information and Clinical Support Tools to Therapists: Effects on Patients at Risk for Treatment Failure

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Doctor of Philosophy

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ABSTRACT

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Patient-focused research systems have been developed to monitor and inform therapists of patients' treatment progress in psychotherapy as a method to enhance patient outcome. The current study examined the effects of providing treatment progress information and problem-solving tools to both patients and therapists during the course of psychotherapy. Three hundred seventy patients at a hospital-based outpatient psychotherapy clinic were randomly assigned to one of two treatment groups: treatment-as-usual, or an experimental condition based on the use of patient/therapist feedback and clinical decision-support tools. Patients in the feedback condition were significantly more improved at termination than the patients in the treatment as usual condition. These findings are consistent with past research on these approaches although the effect size was smaller in this study. Treatment effects were not a consequence of different amounts of psychotherapy received by experimental and control clients. Not all therapists were aided by the feedback intervention.

Keywords: treatment outcomes, treatment failure, client deterioration, therapist client feedback, clinical support tools, psychotherapy, evidence-based practice, psychotherapy quality assurance

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Providing Patient Progress Information and Clinical Support Tools to Therapists: Effects on Patients at Risk for Treatment Failure

Psychotherapy helps most clients and its beneficial effects have been well documented (Lambert & Ogles, 2004; Roth & Fonagy, 2005). Concern has focused in recent research, however, on the minority of clients (5-10%) who deteriorate in treatment (Hansen, Lambert, & Forman, 2003; Lambert & Ogles, 2004; Mohr, 1995). Recent efforts to enhance positive improvement in these individuals have focused on identifying patients at risk for treatment failure (not-on-track; NOT) and providing this predictive information to clinicians and occasionally directly to clients. In addition, when patients are predicted to have a negative outcome, clinical decision-making tools (Clinical Support Tools: CST) have been provided within the course of treatment with the intent of further interrupting the course of deterioration and changing it toward a positive outcome with these predicted treatment failures (Harmon et al., 2007; Slade et al.,2008; Whipple et al., 2003). The effects of these quality assurance interventions appear to be substantial in reducing deterioration rates in patients predicted to be treatment failures.

Recently, Shimokawa, Lambert, and Smart (2010) analyzed the primary series of studies based on the Outcome Questionnaire-45(OQ-45) quality assurance system using meta-analytic and mega-analytic review techniques. These analyses confirmed that progress feedback with alert signals has a statistically significant and clinically significant effect on outcome and that these effects are even greater when clinicians are provided with clinical support tools for problem-solving with the not-on-track cases. Among other findings this meta/mega-analysis found that deterioration rates could be reduced from the baseline of 20% in NOT cases to 13%

when therapist were alerted to patient progress status and that the CST intervention brought deterioration rates to about 5.5%.

A possible limitation to these findings is that of the six meta-analyzed studies from the Shimokawa, et al. (2010) review all but one was conducted in a university counseling center. Counseling center clients typically have a limited range of complaints with relatively low symptom severity (Lambert, et al. 2004). Many of these clients do not meet formal diagnostic criteria, are young, and experiencing their first episode of illness. Their level of distress, including intra- and interpersonal problems characteristic of the individuation process, does not leave them so severely disturbed that they cannot succeed in school. On average clients in this university setting had initial scores on the mental health assessment at the 90th percentile of the nonpatient norms (T-score = 63). In contrast, there are many clinics that treat more disturbed individuals all of who meet criteria for a disorder, have severe and long-standing symptoms, a specific and often comorbid diagnosis, complicated psychopharmacology, and may undergo psychotherapy that is more diagnostically programmed. In such treatment settings patients' initial scores are closer to the 96^{th} percentile (T = 68). Such individuals are more disturbed on average, meet criteria for a specific disorder and often several disorders, have complicated psychopharmacology, and may undergo psychotherapy that is diagnostically programmed. Since only one study (Hawkins, et al. 2004) in this line of research considered such patients, more information is needed to understand how well feedback functions in such settings. This is particularly important because Hawkins et al. did not examine the use of the clinical support tool intervention with their sample.

Hawkins, et al. (2004) showed improved outcome for those in a therapist only progress feedback group and a therapist/patient feedback group compared with treatment as usual (TAU).

Hawkins et al. studied all clients who received treatment rather than just NOT cases. In addition, the effects of feedback on session attendance was examined in the studies reviewed by Shimokawa et al. (2010), with the general finding that progress feedback lengthens treatment for NOT cases while shortening it for cases that are not predicted to be treatment failures. Hawkins, et al. did not find such a relationship, so the effects of progress feedback could not be attributed to lengthened participation in psychotherapy. The primary purpose of this study was to investigate the effects of OQ-45 progress feedback interventions on NOT patient outcome in a psychiatric setting, using the OQ-45 alert system, and the Clinical Support Tool intervention. It thereby served the purposes of extension and replication of earlier work.

Method

Participants

Patients. A total of 472 adult patients seeking outpatient psychotherapy services at a hospital-based outpatient clinic were invited to participate in the present study as part of the clinic's intake procedures. Eight patients declined to participate and did not give informed consent after the procedures were presented to them (approved by the Human Subjects Institutional Review Boards of Brigham Young University, and Utah Valley Hospital). Patients who were younger than 18, or those who were exclusively receiving medication or forms of treatment other than individual psychotherapy were also excluded from the invitation to participate in the research.

Of the 464 patients initially consenting to participate, 94 (20%) were excluded from the data analyses. To be included in the analysis, a patient was required to have received at least two sessions of treatment, and completed the outcome measure for a minimum of two sessions representing the first and any subsequent session. The mean age of the 370 participants included

in the final sample was 36.10 years (*SD* = 13.32). This included 241 (64.24%) female participants and 129 (34.86%) male participants. Additionally, 343 (92.7%) were Caucasian, 7 (1.89%) were African American, 9 (2.44%) were Hispanic/Latino, 7 (1.89%) were Asian American, and 6 (1.62%) were Pacific Islander or other. There were 217 (58.6%) married and 153 (41.4%) single participants. Two hundred seventeen (58.6%) of individuals were employed whereas 108 (29.2%) were unemployed, and 45 (12.2%) did not report their employment status.

Without the benefit of structured diagnostic interviews, the most common diagnoses were Axis I, with mood (64%) and anxiety (30%) disorders occurring most frequently. Five percent of participants were given a primary diagnosis of substance abuse. Because the reliability of these diagnoses is unknown, they are provided for descriptive purposes only. One hundred sixty nine individuals (45.68%) met criteria for two or more diagnoses. Approximately 51 (13.87%) of the patients had previously received psychotherapy services, but 272 (73.78%) of the participants were taking psychotropic medications when they entered treatment. We were unable to monitor patients who were prescribed new medications or a change in medications during treatment.

Therapists. Four licensed psychologists and two licensed social workers provided treatments in the study. Three of the participating therapists described their treatment orientation as primarily cognitive behavioral, while the remaining three therapists employed a variety of treatment orientations including cognitive behavioral, interpersonal, and humanistic. The treatment approaches practiced in the current study appear similar to those of psychologists surveyed by the Division of Psychotherapy of the American Psychological Association (Norcross, Hedges, & Castle, 2002). Because we were interested in reflecting the context of psychotherapeutic practice in typical clinical settings, which is consistent with effectiveness

rather than efficacy methodology, adherence checks were not performed to ensure treatment integrity. Therapists were not required to conform their treatment to specific treatment protocols nor obtain any clinical supervision.

The average age of the therapists was 55.33 years (*SD* = 8.69, range 43-65), and the mean years of experience was 16.17 years post licensure (*SD* = 8.8, range = 6-31). Patients were assigned to therapists using therapist availability, clinical factors (e.g., a female therapist in this study was often assigned female patients who had experienced sexual trauma), and managed care factors (e.g., insurance panels) as assignment criteria. To control for potential effects of therapist assignment, patients in this study were randomly assigned to experimental conditions using a randomized block design, with therapists serving as the blocking variable. This approach appeared to be effective as each therapist was represented equally across the two treatment conditions. The total number of patients treated by each therapist ranged from 21 to 62.

Instruments

Outcome Questionnaire-45. Patient progress and treatment outcome in this study were tracked using the Outcome Questionnaire (OQ-45), a 45-item self-report measure developed specifically for the purpose of tracking and assessing patient outcomes in a therapeutic setting. The OQ-45 is scored using a 5-point scale (0 = never, 1 = rarely, 2 = sometimes, 3 = frequently, 4 = almost always), which yields a possible range of scores from 0 to 180. High scores on the OQ-45 indicate greater levels of symptom and/or poorer functioning. In addition to the total score, the OQ-45 has three subscales that measure quality of interpersonal relations, social role functioning, and symptom distress. Evidence supporting the factor structure of the OQ-45 has been reported by Bludworth et al., 2010; de Jong et al., 2007; and Lo Coco et al., 2008.

The OQ-45 is a well-established instrument that has been validated across the country and across a broad range of non-client and client populations. Lambert et al. (2004) reported an internal consistency reliability (Cronbach's alpha) for the OQ-45 of .93 and a 3-week test–retest reliability value of .84 for the OQ-45 total score. Concurrent validity of the OQ-45 total score has been examined by correlating it with the Symptom Checklist-90 (SCL-90; Derogatis, 1977), Beck Depression Inventory (BDI; Beck, Steer, & Garbin, 1988), Zung Depression Scale (Zung, 1965), and the State-Trait Anxiety Inventory (STAI; Spielberger, 1983). All of the concurrent validity figures with the OQ-45 and these instruments were significant at the .01 level with a range of *r*'s from .50 to .85 (Lambert et al., 2004). Most important, the OQ-45 has been shown to be sensitive to the effects of interventions on patient functioning while remaining stable in untreated individuals (Vermeersch et al., 2004; Vermeersch, Lambert, & Burlingame, 2000).

Assessment for Signal Clients-40 (ASC). The ASC-40 consists of a 40 item self-report scale that inquiries into patient functioning using a five-point Likert scale with anchors ranging from strongly agree to strongly disagree. It has four subscales: Therapeutic Alliance, Social Support, Motivation for Therapy, and Life Events. These subscales are associated with specifically tailored interventions from the literature aimed at enhancing positive psychotherapy outcomes. According to Kimball (2010), the alpha coefficient for each subscale is: Therapeutic Alliance (.87); Social Support (.88); Motivation for therapy (.81); and Life Events (.81).

The Alliance items of the ASC measure the therapeutic bond, shared goals, and agreement on therapeutic tasks as well as alliance rupture. The concept of alliance rupture is especially pertinent to the current study by virtue of the fact that such ruptures may help explain negative client change due to the therapist. Items focusing more specifically on ruptures rather

than just positive alliance merited inclusion. Such items are aimed at detecting breaches in the therapist-client relationship that may explain why and how clients went off-track.

Another important aspect of psychological disturbance and recovery, social support, has likewise been studied for decades (Cohen, Underwood & Gottlieb, 2000). There is wide variation in the quantity and quality of an individual's experience within interpersonal relationships. When clients perceive that they are cared for, esteemed, and members of networks, certain aspects of mental and physical health are bolstered and protected (Cobb, 1976; Monroe, Imhoff, Wise, & Harris, 1983). Furthermore, higher levels of perceived social support are associated with coping with negative life events and consequently better health outcomes (Nezlek & Allen, 2006; Sarason, Sarason, & Gurung, 2001).

As the study by Harmon et al. (2007) demonstrates, psychotherapy clients display lower levels of social support than controls. Furthermore, NOT clients display lower levels of social support from friends and significant others compared to their on-track (OT) counterparts in therapy. This finding is consistent with other research which suggests that improvements in social support mediate how improvements in the working alliance relate to symptom reduction over the course of therapy (Mallinckrodt, 1996). Although most psychotherapy clients are not ~~"in~~terpersonally bereft", enhancing social support for clients may serve to enhance existing relationships or at least improved coping within those relationships (see Bankoff, 1994; Thoits, 1986). Considering the measurement of social support, it is noted that various sources of support are important to consider while the type of support (emotional vs. material) was also incorporated into the ASC. The CST manual (Lambert et al., 2007) suggests interventions based not just on finding and renewing sources of support but also on using social support for assistance in coping.

Resistance to treatment and a lack of motivation for involvement in therapy has long been an obstacle for therapists and their clients to overcome. Arising from the literature regarding addictions and substance abuse, a strategy known as motivational interviewing has become influential in assessing and addressing a client's motivation to make progress in therapy (Hettema, Steele, & Miller, 2005; Miller & Rollnick, 1991). Although the authors of this technique espouse a transtheoretical model of motivation, incorporating stages of change through which a client passes while progressing in therapy, others have noted how motivational interviewing may fit within the self-determination theory model (Markland, Ryan, Tobin, & Rollnick, 2005). ASC items focus on lower sources of motivation such as amotivation or extrinsic motivation as problematic. Negative aspects of motivation were also incorporated into the ASC as precontemplation or contemplation items. The motivation model for the ASC focuses on inadequate or a lack of motivation, including negative reactions to the therapy process.

The literature regarding life events is often connected with the construct of social support, with social support showing evidence of buffering the deleterious effects of life events (Zuroff & Blatt, 2002). Clients may also respond differently to life events because of protective factors such as resilience (Hjemdal, Friborg, Stiles, Rosenvinge, & Martinussen, 2006). The connection of life events to impeded progress in psychotherapy has also been studied (Pilkonis, Imber, & Rubinsky, 1984). One study focused on life events which were less severe and found an association with recurrence of depression, particularly for those clients who received medication as an adjunct to treatment versus clients who were not medicated (Monroe et al., 2006). The assessment of negative life events may also serve in the current study to alert therapists to possible issues to address in therapy. Items included in the measure represent an attempt at capturing general events (e.g., "I lost a person I was close to" which may imply losing a loved

one to death or a concluded romantic relationship). Suggested interventions therefore focus on a therapist gaining more information regarding the possible life events and assisting with coping.

The ASC does not sum to a total score, but provides a subscale score for each domain, along with a cut-off score signaling an overall problem in an area. In addition, a cut-off score is provided for each item indicating that less than 20% of clients answered at this level or lower. The rationale for providing individual item feedback is that it enhances clinician problem-solving.

Clinical Significance and Reliable Change

Using formulas developed by Jacobson and Truax (1991), clinical and normative data for the OQ-45 were analyzed by Lambert, Morton, et al. (2004) to provide cutoff scores for the Reliable Change Index (RCI) and normal functioning. Patients who change in a positive or negative direction by at least 14 points are regarded as having made ~~"r~~eliable 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 (1991) 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 marking 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 patient's score falls at, or below 63, it is concluded that this patient's functioning is similar to a non-patient's level of functioning at that point in time. Passing this cutoff (from dysfunctional to functional) is the second criterion posited by Jacobson and Truax (1991) as an indicator of clinically significant change. Patients who show reliable change and pass the cutoff are considered recovered, while those who only show reliable change are considered improved. Support for the validity of the OQ-45's reliable change and clinical significance cutoff scores

have been reported by Lunnen and Ogles (1998) and Beckstead, Hatch, Lambert, Eggett, & Goates (2003).

Therapist Feedback Interventions

The design of the study called for random assignment of patients to either treatment-as-usual or the feedback condition. The feedback condition was contained within a software program—OQ-Analyst (OQ®–Analyst [www.oqmeasures.com]. Salt Lake City, UT: OQ Measures). It consisted of two progress reports. The first provided session-by-session OQ-45 progress feedback along with alerts to clinicians each time a patient took the measure. Possible alert status indicated that: The patient had returned to a state of normal functioning and termination could be considered (white signal); the treatment was progressing as expected, but there was a need for more treatment (green signal); there was concern about the patient's progress (yellow signal); or that a positive treatment outcome was in doubt, and a serious concern was raised about the final outcome unless changes were made (red signal). These later two messages are provided when the algorithms identified the patient as off-track and these individuals are regarded as alarm-signal patients (information on prediction of treatment failure are provided elsewhere; Finch, Lambert, & Schillje, 2001) who were subsequently asked to take the ASC. A separate client progress report was generated by the OQ-Analyst for the patient at each session. In usual circumstance these reports are immediately available to clinicians on their computer. In the clinic where this study was undertaken clinicians did not have access to personal computers. Patients took the measure in hard copy form and research assistants entered the information into the OQ-Analyst and then generated reports. It became obvious as the study unfolded that therapists were not meeting on a weekly basis with their clients. In fact, as the results will show, therapy was occurring closer to once or twice a month. It was beyond the

scope of this study to insist on weekly sessions. Just what effect such delays in feedback and widely spaced sessions would have on treatment response were unknown. Since an underlying assumption of effective feedback is that it is immediate it was assumed that such a procedure would undermine feedback effects. Slade, et al. (2008) found delayed feedback delivery up to one week did not reduce treatment effects, although it slowed them. But the delays that were studied by Slade et al. were not nearly as long (typically a week) and the therapy itself was scheduled on a weekly basis.

An ASC report generated by the OQ-Analyst provided the clinician with feedback from the ASC, including which subscales were problematic and which items indicated a potential problem. The OQ-Analyst also contains a link for revealing a decision tree for organizing problem-solving and a list of possible interventions that the clinician can consider. The OQ-Analyst intervention has undergone peer review and listed as an evidence-based practice (NREPP, 2009). Clinicians were provided with the CST intervention manual (Lambert et al., 2007) which provided guidelines for using the ASC, decision tree, and interventions list to prompt therapist action. It is important to underscore that the CST served merely as an indication for techniques or interventions that could potentially improve client functioning; clinicians were not required to change their treatment orientation, nor to undergo further clinical training.

Individual clients may display problems on only one or multiple or even all of the CST domains. Accordingly, each domain and each ASC item has an associated cut score that suggests the need for therapist attention and general suggestions for interventions to be considered by the therapist through the use of a decision tree (see Appendix A). The decision tree is a part of the manual of suggested interventions and conceptual considerations for

therapists to address in therapy. The feedback gives therapists an opportunity to discuss it with clients as well as to intervene by addressing the areas and items of interest in order to improve the treatment response of a client who is not-on-track in therapy.

Procedures

Like other studies within this program of research, this study prized ecological validity and accepted the realities and routines of ordinary clinical practice. The primary purpose was to examine the effects of the patient progress feedback and CST interventions on patients progress through the use of the OQ-Analyst reports. The ability to generalize the study's results to similar clinical settings may be an advantage of the design as therapists did not undergo extensive training, were not advocates of the methods used, and were not reimbursed for use of the feedback. Therapists were encouraged to view reports and to use the information in any way that seemed helpful to their clients.

Adult patients who applied for treatment and came to their first appointment were invited to participate in the research study by each of their respective therapists. Each patient was explained the benefit of participation; the chance that their therapists could possibly direct their course of treatment in a more efficient manner due to the availability of progress feedback and CST's. All patients participating in the project signed an informed consent form. Clients were assigned to therapists according to naturalistic allocation practices followed by the clinic. After completion of the intake forms and initial OQ-45, patients were randomly assigned by the research staff to either one of the two treatment conditions (within each therapist's case load): TAU, no feedback provided or feedback (fb) (experimental condition) with feedback provided to therapists, and the CST used for NOT cases. Typically patients were administered the OQ-45 (Lambert, et al. 2004) prior to each session by reception personnel who were not informed of the

treatment condition of the patients. The status of a patient's progress was used to determine if the ASC should be administered. Patients in the feedback group who were identified at any point during the course of treatment as failing to progress as expected (single or multiple yellow/red color-coded messages); was administered the additional questionnaire (ASC) the first time they signaled. Feedback was provided to therapists according to the treatment condition assignment of each patient before each subsequent session by way of paper versions of the clinician feedback reports inserted into patient hardcopy files. Therapists whose clients were in the experimental condition were instructed to present the progress information to their patients during each treatment session.

Results

Of the 370 patients who entered treatment 163 were On-Track (OT; meaning that they never signaled as Not-On-Track during the course of therapy. These individuals improved over the course of therapy with both TAU patients and those in the progress feedback group showing similar amounts of improvement. As expected there were no statistically significant effects for patients in the experimental condition. Since the purpose of the experimental intervention was to improve treatment outcomes for NOT participants ($N = 207$) an initial OQ-45 score and at least one subsequent OQ-45 was required to predict final mental health status and classify individuals as on- or off-track. Only patients with at least two therapy sessions were included in the data analyses.

Pre-Treatment Scores

A 6 x 2 ANOVA was performed on clients' initial score on the Outcome Questionnaire (OQ). The fixed factors used in the analysis were therapist (6 levels) and treatment (TAU vs. therapist feedback). A fixed factor model was chosen due to the small sample size of therapists.

Results indicated that there were no main effects or interactions. This indicates that there were no statistically significant differences between therapists or treatment groups on pre-treatment scores and that any differences obtained in post-treatment scores would reflect differences obtained through the actual treatment conditions.

Main Data Analyses

Despite non-significant pre-treatment differences, data were analyzed using a 6 (Therapist) x 2 (Treatment) ANCOVA with the pre-treatment scores on the OQ as the covariate to ensure equivalence at the pre-test. The dependent variable was change between pre and post treatment scores on the OQ. Results of the 6 x 2 ANCOVA indicated that participants in the therapist feedback condition (M_{adj} = 8.74, *SD* = 16.41,) showed significantly greater improvement than NOT clients in the TAU condition (M_{adj} = 4.08, *SD* = 16.41), $F(1, 194) = 4.17$, $p = .04$, $\eta^2 = .02$. There were no main effects for therapist and no interactions between variables. The pre-treatment and post-treatment means and standard deviations and post-test comparison effect sizes are displayed in Table 1. These results are displayed graphically in Figure 1. These data indicate that patients in the feedback group improved twice as much as those who received treatment-as-usual from the same therapists. Although these results reached statistical significance, the effect size for this difference was quite small according to Cohen's standard, raising questions about the clinical significance of the findings.

Table 1

Means, Standard Deviations, and Effect Sizes for Pre and Post Outcomes by Treatment Group

	Treatment as Usual (n = 98)			Therapist Feedback (n = 109)		
	Pre	Post	Change	Pre	Post	Change
M	87.86	83.75	-4.11	89.74	81.62	-8.12
SD	16.11	18.48	16.17	13.94	17.99	16.41
d						.12

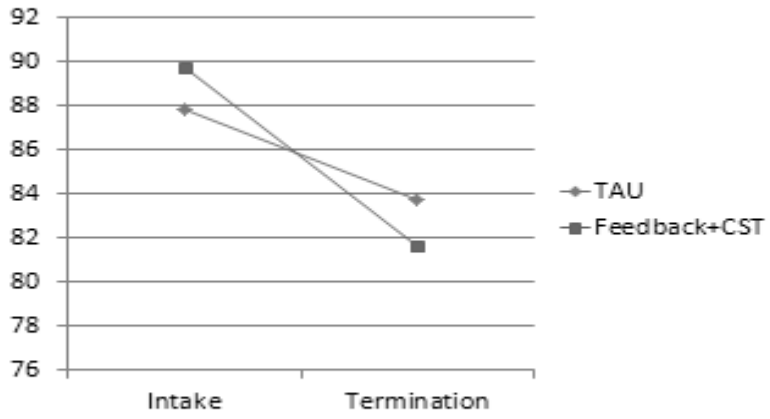

Figure 1. The effects of feedback and Clinical Support Tool use compared to treatment-as-usual on patient outcome.

Analysis of Clinical Significance

To further determine the impact of feedback on outcome, final outcomes were categorized according to the number of patients that responded to treatment (i.e., met either reliable or clinically significant change criteria) and those that did not respond to treatment (deteriorated or no change) based on the Jacobson and Truax (1991) criteria as described in the methods section. This type of analysis is intended to examine the outcome for each individual patient and determine if it is clinically meaningful. The frequencies and proportions of patients identified as potential treatment failures and meeting the outcome category criteria are presented in Table 2.

Overall the comparison between the proportion of patients responding to treatment in the feedback condition versus TAU did not reach statistical significance, $z = 1.28$, $p = .10$. Nevertheless the proportion of NOT patients responding to treatment in the TAU compared to the feedback intervention was 23% (23/98) and 34% (27/109), respectively. Therapists using progress feedback and clinical support tools were able to cut deterioration rates in half compared to the rates they achieved when they delivered treatment in the absence of feedback and problem-solving tools.

These results indicate that the majority of individuals who entered treatment and deviated from a positive course of recovery did not return to a normal state of functioning by the time they left treatment. Nevertheless, deterioration rates were cut in half and an additional 10% of patients improved or recovered when therapists received feedback.

Table 2

Percentage of Not-on-Track Patients Meeting Reliable or Clinically Significant, Reliable, No Change, or Deteriorated Criteria on the OQ-45 at Final Outcome

Outcome Classification	Treatment as Usual (n = 98)	Patient/Therapist Feedback + CST (n = 109)
	n (%)	n (%)
Deteriorated[a]	12 (12.24)	7 (6.42)
No Change[b]	63 (64.29)	65 (59.63)
Reliable Change[c]	17 (17.34)	25 (22.94)
Clinically Significant Change[d]	6 (6.1)	12 (11)

Note. [a] Worsened by at least 14 points on the OQ-45 from pre- to post-treatment
[b] Improved less than 14 points and worsened by less than 14 points on the OQ-45
[c] Improved by at least 14 points on the OQ-45 but did not pass the cutoff between dysfunctional and functional populations
[d] Improved by at least 14 points on the OQ-45 and passed the cutoff between dysfunctional and functional populations

Therapist-by-Therapist Outcomes

To further examine outcomes in this study each therapist's patient outcomes were examined and compared. These results are presented in Table 3. Organizing outcome in this way substantially reduces the number of patients seen by each therapist within each treatment makes testing of statistical significance more difficult as the number of patients seen in each condition is reduced (range per condition from 11-26), making the outcome differences within

therapists less reliable than the overall group mean change. In Table 3 the therapists are ordered by the *difference* in pre to post effect size change found in their treatment as usual clients and their feedback clients. Thus the size of treatment effects could be compared between the experimental condition, and treatment-as-usual, offered by each therapist. This allowed an examination of possible differences between therapists in their ability to use feedback.

This analysis shows that all therapists produced larger effects in their clients when they received formal feedback compared to when they had none. Half the therapists (therapists 1, 2, 3) were able to make good use of feedback, with feedback-assisted therapy averaging an effect size of .34 greater than their treatment as usual clients. The effects found for these three therapists sharply contrasts with changes in patients seen by the other three therapists. Therapists 4, 5, 6 did not improve the outcomes of their clients when they received feedback. As a group they averaged only an effect size difference of .05 (.07, .05, .02). Thus, the overall effects for the feedback condition were diminished by half the therapists' clients having no measured benefit compared to their treatment-as-usual clients. It was not clear from the data what distinguished therapists who found a way to use the feedback information and those who did not. The group of six therapists' clients appeared to have approximately equal outcomes in treatment-as-usual (with the possible exception of therapist 6 whose clients' outcomes were poorest in TAU and in the feedback condition). These results raise questions about therapist motivation to use the feedback information, the need for more training in order to use feedback, differences in therapist resourcefulness (ability to use feedback), and the like.

Table 3

Means, Standard Deviations, and Effect Sizes from Pre to Post Therapy Based on Individual Therapist Performance

Therapist #1

	Treatment as Usual (n = 21)			Therapist Feedback (n = 26)			All Participants (n = 47)		
	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change
M	85.81	73.05	12.76	93.30	75.42	17.88	89.96	74.36	15.60
SD	11.63	17.81	11.54	16.73	12.17	15.27	14.99	14.83	13.83
d			.85		**.37**	1.22			1.04

Therapist #2

	Treatment as Usual (n = 11)			Therapist Feedback (n = 13)			All Participants (n = 24)		
	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change
M	80.72	68.45	12.27	81.31	60.92	20.39	81.04	64.38	16.66
SD	16.44	14.64	18.42	21.32	14.20	13.10	18.84	14.60	15.94
D			.79		**.36**	1.13			.98

Therapist #3

	Treatment as Usual (n = 18)			Therapist Feedback (n = 19)			All Participants (n = 37)		
	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change
M	83.50	70.11	13.39	89.84	74.68	15.16	86.76	72.46	14.30
SD	21.49	18.90	18.91	14.68	15.55	12.92	18.33	17.18	15.91
D			.66		**.32**	.98			.80

Table 3 (continued)

Therapist #4

	Treatment as Usual (n = 15)			Therapist Feedback (n = 15)			All Participants (n = 30)		
	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change
M	87.33	73.40	13.93	91.13	79.87	11.26	89.23	76.63	12.60
SD	16.99	22.11	18.09	11.57	16.86	16.29	14.41	19.60	16.97
D			.71		**.07**	.78			.73

Therapist #5

	Treatment as Usual (n = 20)			Therapist Feedback (n = 18)			All Participants (n = 38)		
	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change
M	82.60	70.45	12.15	89.00	74.67	14.33	85.63	72.45	13.18
SD	17.48	16.20	18.03	18.35	18.70	13.20	17.95	17.32	15.75
D			.72		**.05**	.77			.75

Therapist #6

	Treatment as Usual (n = 14)			Therapist Feedback (n = 20)			All Participants (n = 34)		
	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change
M	88.00	78.43	9.57	84.50	76.15	8.35	85.94	77.09	8.85
SD	14.81	17.11	15.66	10.33	15.86	14.93	12.28	16.17	15.01
D			.60		**.02**	.62			.62

Note: Bolded effect sizes are the difference between change (effect size) from pre- to post- in treatment as usual and pre- to post- change when feedback was given.

Effects of Feedback on Amount of Psychotherapy

A 6 (Therapist) x 2 (Treatment) ANOVA was performed on the mean number of therapy sessions. Overall, patients who were considered treatment completers (had 5 or more sessions; $n = 210$) received a mean of 9.38 sessions, (the average range across therapists was between 8.00 & 10.15 sessions; for individual clients the number of sessions ranged from 5 to 26). Results indicated that for NOT clients, there was no significant difference between TAU and feedback conditions, $p = .12$. There were no significant differences in mean number of sessions between therapists, $p = .67$. There was no interaction between therapists and treatment condition. These results indicate that for NOT clients, there were no experimental group differences in the amount of psychotherapy sessions received and therefore that the effects of feedback were obtained without lengthening the course of psychotherapy and the positive results obtained therefore are not attributed to a larger dose of treatment. On average all treated patients combined (On-Track & NOT) received 6.63 ($SD = 4.43$) sessions of treatment.

Given that the practice in the clinic was to space treatment, a similar 6 (Therapist) x 2 (Treatment) ANOVA was conducted for time between beginning of treatment and end of treatment as measured in weeks. Results indicated that there was no significant difference between the TAU and feedback conditions. The therapist effect was significant, $F(5, 195) = 2.39$, $p = .04$, $\eta^2 = .04$ and Tukey's post-hoc comparisons revealed that there was only one significant difference between two of the therapists. One saw patients on average about 15 weeks, ($M = 14.76$, $SD = 13.78$, $p = 02$) while the other had patients that averaged significantly more weeks from the beginning to end of treatment ($M = 24.27$, $SD = 16.45$, $p = 03$). These results suggest that therapists at the extreme ends of treatment intensity dimension (sessions per week) saw their clients for an equivalent number of sessions but at a different rate per week.

Discussion

Past research has shown that a significant percent of patients undergoing routine care either do not respond to treatment or have a negative outcome (Hansen, et al. 2003). Shimokawa et al. (2010) have reported that methods that rely on progress feedback (with alarm-signals) and the use of Clinical Support Tools by clinicians reduces failures rates and increases positive outcomes. A majority of studies (five of six) were conducted in the same university-based counseling center, suggesting the need for replication in settings with more disturbed clientele. The current study was undertaken to examine the effects of providing patient progress feedback with alarm-signals and problem-solving interventions (CST) compared to TAU provided by the same therapists treating patients whose progress went off track during treatment. Do patients whose therapists get feedback have better outcomes that those same therapists' patients when they do not?

On average, patients at this hospital-based outpatient clinic started treatment at the 97.1 percentile of the normal population on the OQ-45 (Lambert et al., 2004). As a group (n = 370) these same patients left treatment at the 93.3 percentile. The average change on the OQ-45 was 10 points. These general results did not appear to be as substantial as those reported by Hawkins, et al. (2004) conducted in the same treatment setting. In that study, patients started treatment at the same level of disturbance, but left at about the 86th percentile. Patient change was closer to 27 OQ-45 points, on average.

Results suggested that for patients who were predicted to be treatment failures (207/370, 56%), the patients whose therapists received progress feedback with signal-alarms and the CST intervention had a statistically significant better outcome than similar patients who were seen by the same group of six therapists. The effect size between the treatment as usual (no feedback)

patients and those whose therapists received feedback was $d = .12$, a small effect. Although statistically significant, this effect size is much smaller than that reported by Shimokawa, et al. (2010). In their meta/mega-analysis, progress feedback with the CST intervention compared to TAU was a $d = .70$. Even in comparison to the prior study conducted by Hawkins, et al. (2004) in the same hospital-based clinic the effect size for progress feedback to patients and therapists (without the CST intervention) produced an effect size of .30.

It appears that while the effects of feedback in the current study were reliable, replicating the findings of Hawkins et al. (2004) as well as the other five studies in this series, the feedback interventions had less impact than the earlier research. For example, Hawkins found the average TAU patient ($N = 64$) moved from a pre-test score of 83.72 to a post-test score of 69.33 (a score that is near the cut-off of 64/63, indicating normal functioning). In the Hawkins et al. study when patients and therapists received progress feedback they moved from an average intake score of 84.71 to a termination score within the range of normal functioning ($M = 62.49$). In the current study both TAU cases and those in the feedback group were far from entering the ranks of normal functioning at the end of treatment. It should be noted that the overall modest outcomes in the current study compared to Hawkins et al. study occurred in the context of a much smaller treatment dosage in the current study (6-7 sessions) compared with patients in the Hawkins study who received approximately 12 sessions on average. This reflects a change in clinic practice patterns to providing near monthly sessions rather than the more typical weekly sessions in the Hawkins study.

Analysis of session utilization data found that progress feedback with Clinical Support Tools enhanced outcome without increasing the number of sessions needed for this benefit. In general, therapists treated patients for about the same number of sessions as their peers, and

about the same number of sessions whether they received feedback or not. At the same time at least two of the therapists had statistically significantly different patterns of spreading therapy out over time, raising questions about the impact of such practices on patient outcome and on the value of feedback when treatment is highly diluted. All therapists averaged two or more weeks between sessions, with the typical practice hovering around three weeks between sessions.

We speculate that two major factors could account for the smaller treatment effects found in the current study. The first has been alluded to already; low density of treatment sessions. This may not only led to smaller treatment effects across conditions, but also to the delays this placed on the timeliness and relevance of the feedback information that was provided. Although alarm signals were provided within a week sometimes weeks went by before this information could be used by the therapist to address the difficulties experienced by patients.

Smaller effects may also be related to the specific therapists who delivered treatment in this setting. Examining outcome on a therapist-by-therapist basis it was obvious that half the therapists were able to use the feedback information to substantially benefit clients (compared to their clients' outcome in TAU cases) while the other three therapists were not. In contrasting outcome between the top three and bottom three therapists the differences in their patients' outcome were substantial (with an effect size difference ranging from near zero to .35). The small number of therapists increases the chance that the inability to use or profit from feedback by a single therapist can skew the results. Some evidence was found that this was the case in the current study.

Such a wide discrepancy between therapists suggests the importance of monitoring treatment effects during the course of research (and practice) in order to encourage therapists to effectively use the information. Such a procedure was not used in the present study (nor in past

studies) but may be especially important if therapists are not motivated to use the feedback to improve patient functioning. It also raises issues about the sufficiency of training procedures. Would better training decrease variability in outcomes by provider? Would feedback to therapists about their relative inability to make use of feedback help motivate them to understand what more successful providers do with feedback?

Other factors could have contributed to the smaller effect of feedback found in the current study. Both the Hawkins, et al. (2004) study and the current study were conducted in the same setting which is dominated by more seriously disturbed clients. Although Hawkins, et al., did not employ the CST intervention, its effect size across all patients was two-thirds that usually found in other progress feedback studies (approximately .43; Shimokawa, et al., 2010). The current study findings combined with the Hawkins study suggest the possibility that the interventions do not work as well with more disturbed patients. Related to this interpretation is the fact that about 50% of these patients were on medication during treatment while in the five studies of university counseling center clients less than 20 percent were on medication. The use of medication may improve outcomes independently from feedback, making the effects of feedback harder to discover.

The current study found evidence that progress feedback with warning alarms and problem-solving aids for off-track cases improved outcomes for patients who were off-track. This finding is consistent with past research in this area (Shimokawa, et al. 2010). In the current study these results were less impressive and clinically meaningful than in the past work. Nevertheless, the proportion of patients who left treatment deteriorated was cut in half according to individualized clinical significance change criteria and this was the central goal of this intervention.

Speculation about the possible reasons for the smaller effects were offered. Given the replication presented here, the next line of research in this area may be wise to concentrate on training therapists to use the feedback as provided through the OQ-Analyst in order to diminish therapist variability. In addition, monitoring the degree to which therapists are succeeding with feedback during the course of a study and using this information to help therapists improve their ability to problem-solve with patients may strengthen the feedback intervention.

References

Bankoff, E. A., & Howard, K. I. (1992). The social network of the psychotherapy patient and effective psychotherapeutic process. *Journal of Psychotherapy Integration, 2*, 273-294.

Beck, A. T., Steer, R. A., & Garbin, M. G. (1988). Psychometric properties of the Beck Depression Inventory: Twenty-five years later. *Clinical Psychology Review*, *8*, 77-100.

Beckstead, D. J., Hatch, A. L., Lambert, M. J., Eggett, D. L., Goates, M. K., & Vermeersch, D. A. (2003). Clinical significance of the Outcome Questionnaire (OQ 45.2). *The Behavior Analyst Today, 4*(1), 79-90.

Bludworth, J. L., Tracey, T. J. G., & Glidden-Tracey, C. (2010). The bi-level structure of the Outcome Questionnaire-45. *Psychological Assessment, 22*(2), 350-355.

Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine, 38*, 300-314.

Cohen, S., Underwood, L. G., & Gottlieb, B. H. (2000). *Social support measurement, and intervention*. Oxford: Oxford University Press.

de Jong, K., Nugter, M. A., Polak, M. G., Wagenborg, J. E. A., Spinhoven, P., & Heiser, W. J. (2007). The Outcome Questionnaire (OQ-45) in a Dutch population: A cross-cultural validation. *Clinical Psychology and Psychotherapy*, *14,* 288-301.

Derogatis, L. R. (1977). *The SCL-90 manual: Scoring, administration and procedures for the SCL-90*. Baltimore: Johns-Hopkins University School of Medicine, Clinical Psychometrics Unit.

Finch, A. E., Lambert, M. J., & Schaalje, B. G. (2001). Psychotherapy quality control: The statistical generation of expected recovery curves for integration into an early warning system. *Clinical Psychology and Psychotherapy*, *8,* 231-242.

Hansen, N. B., Lambert, M. J., & Forman, E. M. (2003). The psychotherapy dose-effect in naturalistic settings revisited: Response to Gray. *Clinical Psychology: Science and Practice, 10,* 507-508.

Harmon, C., Lambert, M. J., Slade, K., & Smart, D. W. (2007). Enhancing outcome for potential treatment failures: Therapist/client feedback and Clinical Support Tools. *Psychotherapy Research, 17*, 379-392.

Hawkins, E. J., Lambert, M. J., Vermeersch, D. A., Slade, K. L., & Tuttle, K. C. (2004). The therapeutic effects of providing patient progress information to therapists and patients. *Psychotherapy Research, 14*(3), 308-327.

Hettema, J., Steele, J., & Miller, W. R. (2005). Motivational interviewing. *Annual Review of Clinical Psychology, 1,* 91-111.

Hjemdal, O., Friborg, O., Stiles, T. C., Rosenvinge, J. H., & Martinussen, M. (2006). Resilience predicting psychiatric symptoms: A prospective study of protective factors and their role in adjustment to stressful life events. *Clinical Psychology and Psychotherapy, 13*, 194–201.

Jacobson, N. S., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology, 59*, 12–19.

Kendall, P. C., Marrs-Garcia, A., Nath, S. R., & Sheldrick, R. C. (1999). Normative comparisons for the evaluation of clinical significance. *Journal of Consulting and Clinical Psychology, 67*, 285-299.

Kimball, K. L. (2010). *Toward determining best items for identifying therapeutic problem areas.* Dissertation, Department of Psychology, Brigham Young University, Provo UT.

Lambert, M. J., Bailey, R., Kimball, K., Shimokawa, K., Harmon, S. C., & Slade, K. (2007). *Clinical Support Tool Manual-Brief Version-40*. Salt Lake City, OQMeasures.

Lambert, M. J., Morton, J. J., Hatfield, D., Harmon, C., Hamilton, S., Reid, R. C., … Burlingame, G. M. (2004). *Administration and Scoring Manual for the Outcome Questionnaire -45*. Orem, UT: American Professional Credentialing Services.

Lambert, M. J., & Ogles, B. M. (2004). The efficacy and effectiveness of psychotherapy. In M. J. Lambert (Ed.), *Bergin and Garfield's handbook of psychotherapy and behavior change* (5th ed., pp. 139-193). New York: Wiley.

Lo Coco, G., Chiappelli, M., Bensi, L., Gullo, S., Prestano, C. & Lambert, M. J. (2008). The factorial structure of the Outcome Questionnair-45: A study with an Italian sample. *Clinical Psychology and Psychotherapy*, *15*(6), 418-423.

Lunnen, K. M., & Ogles, B. M. (1998). A multiperspective, multivariable evaluation of reliable change. *Journal of Consulting and Clinical Psychology, 66*, 400-410.

Mallinckrodt, B. (1996). Change in working alliance, social support, and psychological symptoms in brief therapy. *Journal of Counseling Psychology, 43,* 448-455.

Markland, D., Ryan, R. M., Tobin, V. J., & Rollnick, S. (2005). Motivational interviewing and self-determination theory. *Journal of Social and Clinical Psychology, 24*(6), 811-831.

Miller, W. R., & Rollnick, S. (1991). *Motivational Interviewing: Preparing people to change addictive behavior*. New York: Guilford Press.

Monroe, S., Imhoff, D., Wise, B., & Harris, J. (1983). Prediction of psychological symptoms under high-risk psychosocial circumstances: Life events, social support, and symptom specificity. *Journal of Abnormal Psychology*, *92*(3), 338-350.

Mohr, D. C. (1995). Negative outcome in psychotherapy: A critical review. *Clinical Psychology: Science and Practice, 2*, 1–27.

NREPP. (2009). SAMHSA's National Review of Evidence-Based Practices. OQ-Analyst.

Norcross, J., Hedges, M., & Castle, P. (2002). Psychologists conducting psychotherapy in 2001: A study of the Division 29 membership. *Psychotherapy: Theory, Research, Practice, Training*, *39*(1), 97-102.

Nezlek, J. B., & Allen, M. R. (2006). Social support as a moderator of day-to-day relationships between daily negative events and daily psychological well-being. *European Journal of Personality, 20*, 53-68.

Pilkonis. P. A., Imber, S., & Rubinsky, P. (1984). Influence of life events on outcomes in psychotherapy. *Journal of Nervous and Mental Disorders, 172,* 468-474.

Roth, A., & Fonagy, P. (2005). *What works for whom? A critical review of psychotherapy research.* (2nd Ed.) New York: Guilford Press.

Sarason, B. R., Sarason, I. G., & Gurung, R. A. R. (2001). Close personal relationships and health outcomes: A key to the role of social support. In B. R. Sarason & S. Duck (Eds.) *Personal relationships: Implications for clinical and community psychology* (pp. 15-41). New York: Wiley.

Shimokawa, K., Lambert, M. J., & Smart, D. W. (2010). Enhancing treatment outcome of patients at risk of treatment failure: Meta-analytic and mega-analytic review of a psychotherapy quality assurance system. *Journal of Consulting and Clinical Psychology*, *78*(3), 298-311.

Slade, K., Lambert, M. J., Harmon, S. C., Smart, D. W., & Bailey, R. (2008). Improving psychotherapy outcome: The use of immediate electronic feedback and revised clinical support tools. *Clinical Psychology and Psychotherapy*, *15*, 287-303.

Spielberger, C. D. (1983). *Manual for the State Trait Anxiety Inventory STAI (Form Y)*. Palo Alto, CA: Consulting Psychologists Press.

Thoits, P. A. (1986). Social support as coping assistance. *Journal of Consulting and Clinical Psychology, 54,* 416-423.

Vermeersch, D. A., Lambert, M. J., & Burlingame, G. M. (2000). Outcome Questionnaire: Item sensitivity to change. *Journal of Personality Assessment, 74*, 242–261.

Vermeersch, D. A., Whipple, J. L., Lambert, M. J., Hawkins, E. J., Burchfield, C. M., & Okiishi, J. C. (2004). Outcome Questionnaire: Is it sensitive to changes in counseling center clients? *Journal of Counseling Psychology, 51*, 38– 49.

Whipple, J. L., Lambert, M. J., Vermeersch, D. A., Smart D. W., Neilsen, S. L., & Hawkins, E. J. (2003). Improving the effects of psychotherapy: The use of early identification of treatment and problem-solving strategies in routine practice. *Journal of Counseling Psychology, 50*(1), 59-68.

Zung, W. W. (1965). A self-rating depression scale. *Archives of General Psychiatry*, *12*, 63–70.

Zuroff, D. C., Blatt, S. J., Sotsky, S. M., Krupnick, J. L., Martin, D. J., Sanislow, C. A. III, & Simmons, S. (2000). Relation of therapeutic alliance and perfectionism to outcome in brief outpatient treatment of depression. *Journal of Counseling and Clinical Psychology*, *68,* 114-124.

Appendix A

Clinical Support Tools Decision Tree

Not-On-Track Feedback Cases