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### Providing patient progress information and clinical support tools to therapists: Effects on patients at risk of treatment failure

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## Providing patient progress information and clinical support tools to therapists: Effects on patients at risk of treatment failure

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### Abstract

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 and seventy patients 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. Treatment effects were not a consequence of different amounts of psychotherapy received by experimental and control clients. These findings are consistent with past research on these approaches although the effect size was smaller in this study. 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

Psychotherapy helps most clients and its beneficial effects have been well documented (Lambert & Ogles, 2004; Roth & Fonagy, 2005). Several systems have been developed to enhance the effects of psychotherapy by providing progress feedback to clinicians and clients, thus enhancing the collaborative efforts of these treatment partners. Individual research studies (e.g., Newnham, Hooke, & Page, 2010; Reese, Norsworthy, & Rowlands, 2009) have shown the value of such methods. Reviews (Carlier et al., 2010), and meta-analytic studies (Knaup, Koesters, Schoefer, Becker, & Puschner, 2009), have also noted the positive impact of these feedback methods, although Carlier found positive results in only 54% of studies and Knaup obtained heterogeneous effect sizes, with only small effects favoring feedback.

Among feedback systems and methods Lambert and his group at Brigham Young University (BYU) have focused particular concern 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 of 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, Lambert, Slade, & Smart, 2007; Slade, Lambert, Harmon, Smart, & Bailey, 2008; Whipple et al., 2003). The CST intervention was developed because the first three studies in the series consistently found that NOT clients were helped by progress feedback but still left treatment in the clinical range (as a group). We therefore wanted to provide information to therapists through the CST about the quality of the therapeutic alliance, patient motivation, clients social supports, and untoward life events, and remind them about the possible need for medication referral. The effects of this enhanced

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quality assurance intervention 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 from the BYU group based on the Outcome Questionnaire-45 (OQ-45) quality assurance system using meta-analytic and mega-analytic review techniques. This review 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 the CST 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 therapists were alerted to patient progress status and that use of the CST intervention brought deterioration rates to about 5.5%.

A possible limitation to the Shimokawa et al. (2010) findings, and this program of research, is that of the six meta-analyzed studies all but one were 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 are 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 non-patient norms ( $T$ -score = 63). In contrast, there are many clinics that treat more disturbed individuals all of whom 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. Since only one study (Hawkins, Lambert, Vermeersch, Slade, & Tuttle, 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). Newnham et al. (2010) have shown that feedback can work with more disturbed cases, although they found that feedback was effective in reducing depressive symptoms for patients at risk of poor outcome, but not effective in improving

well-being. Berking, Orth, and Lutz (2006) have also shown progress feedback is effective with at-risk inpatients, lending support to the notion that the effects are not just present in mildly disturbed samples. In addition, the effects of feedback on session attendance were 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. The importance of this finding is that improved outcomes may be caused by mere lengthening of treatment with NOT cases rather than other causal factors.

The primary purpose of this study was to investigate the effects of progress feedback interventions on NOT patients' outcomes 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. Three hundred and forty-three respondents (92.7%) were Caucasian, seven (1.89%) were African American, nine (2.44%) were Hispanic/Latino, seven (1.89%) were Asian American, and six (1.62%) were Pacific Islander or other. There were 217 (58.6%) married and 153 (41.4%) single participants. Two hundred and seventeen (58.6%) individuals were employed whereas 108 (29.2%) were unemployed,

and 45 (12.2%) did not report their employment status.

Patients were diagnosed by their treating clinician, who did not employ formal, 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 here for descriptive purposes only. One hundred and sixty-nine individuals (45.68%) met criteria for two or more diagnoses. Fifty-one (13.87%) of the patients had previously received psychotherapy services, and 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 who had 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 make their treatment adhere to specific evidence-based treatment protocols or 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 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, Tracey, & Glidden-Tracey, 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 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 with a wide variety of commonly used and valid measures of psychopathology. All of the concurrent validity figures with the OQ-45 and these other assessment instruments were significant at the .01 level with a range of  $r$  values 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).

Cut-off scores for the Reliable Change Index (RCI) and normal functioning as used in this study are provided by Lambert et al. (2004), who analyzed clinical and normative data for the OQ-45 using formulas developed by Jacobson and Truax (1991). Support for the validity of the OQ-45's reliable change and clinical significance cut-off scores has been reported by Lunnen and Ogles (1998) and Beckstead et al. (2003).

**Assessment for Signal Clients-40 (ASC).** The ASC-40 consists of a 40-item self-report scale that inquires into patient functioning using a 5-point Likert scale with anchors ranging from strongly agree to strongly disagree. It has four subscales: Therapeutic Alliance (11 items), Social Support (11 items), Motivation for Therapy (nine items), and Life Events

(nine items). These subscales are associated with specifically tailored interventions from the literature aimed at enhancing positive psychotherapy outcomes. According to Kimball (2010), the Chronbach's alpha coefficient for each subscale is: Therapeutic Alliance .87; Social Support .88; Motivation for Therapy .81; and Life Events .81.

The Alliance items inquire about the therapeutic bond, shared goals, and agreement on therapeutic tasks as well as alliance rupture. Social support items inquire into the degree to which individuals feel that their family and friends can be counted on. Social support, as demonstrated by Harmon et al. (2007), is especially low for psychotherapy clients when compared to controls, and for not-on-track (NOT) clients when compared to their on-track (OT) counterparts. The Motivation for Therapy items focus on low or inadequate motivation, and thus problematic sources of motivation such as amotivation, extrinsic motivation, or negative reactions to the treatment process. The assessment of negative life events, as provided by the ASC, inquires into recent negative events related to loss and is intended to alert therapists to life crises that might need to be addressed in therapy. Validity data for these subscales are limited. Detailed presentation of the theoretical background of the ASC subscales can be found in the manual (Lambert et al., 2007). The 40 items composing the ASC do not sum to a total score. The feedback report based on the ASC and viewed by the therapist consists of a subscale score for each domain, along with a cut-off score signaling an overall problem in that 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 by making it more specific.

### Therapist Feedback Interventions

The design of the study called for random assignment of patients to either treatment-as-usual or the feedback condition, with both conditions offered by the same therapists. The feedback condition was part of a software program—OQ-Analyst (OQ<sup>®</sup>-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 statuses indicated the following: 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 client's final outcome unless changes were made (red signal). These latter two messages were provided to therapists since the algorithms (Finch, Lambert, & Schaalje, 2001) identified these patients as not-on-track. Either of these latter two signals prompts a request to the patient to take the ASC. A separate client progress report was generated by the OQ-Analyst for each session.

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 is listed as an evidence-based practice (NREPP, 2009). Clinicians were provided with the CST intervention manual (Lambert et al., 2007), which provides guidelines for using the ASC, the decision tree, and interventions list to prompt therapist action. It is important to underscore that the CST merely suggests possible courses of action that could potentially improve client functioning; clinicians were not required or expected to engage in all of the alternatives offered or to seek supervision.

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 the decision tree (see Appendix A).

### Procedures

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 informed of the possible 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 CSTs. 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 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 whether 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) were administered the additional questionnaire (ASC) the first time they signaled. In usual circumstances both the OQ-45 and ASC reports, as generated by OQ-Analyst, 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 both measures, OQ and ASC (if they were NOT), in hard copy form and research assistants entered the information into the OQ-Analyst and then generated reports that were placed into patient hard copy files. The completion rate for the OQ administrations was 73.53% of possible occasions, while for the ASC it was 79.06%. Therapists were instructed to present the OQ-45 progress information to their (experimental) patients during each treatment session.

Consistent with the way feedback would be offered in routine care, therapists did not undergo extensive training, were not advocates of the methods used, and were not reimbursed for use of the feedback. Patients were not asked if they actually received the feedback reports from their therapist and if the feedback was explained to them by their therapist.

### Results

Of the 370 patients who entered treatment 163 (44%) stayed 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 and no statistically significant differences between them. This left 207 (56%) individuals who went off track according to the OQ-Analyst algorithms.

A  $6 \times 2$  ANOVA was performed on clients' initial scores on the OQ-45. The fixed factors used in the analysis were therapist (six 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 suggests 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.

### Analyses of Treatment Effects

Despite non-significant pre-treatment differences, data were analyzed using a  $6$  (Therapist)  $\times$   $2$  (Treatment) ANCOVA with the pre-treatment scores on the OQ as the covariate to ensure equivalence at the pre-test. The dependent variable was post-treatment score on the OQ-45. Results of the  $6 \times 2$  ANCOVA indicated that participants in the therapist feedback condition ( $M_{\text{adj}} = 80.11$ ,  $SD = 17.99$ ) showed statistically significant greater improvement than NOT clients in the TAU condition ( $M_{\text{adj}} = 84.78$ ,  $SD = 18.48$ ),  $F(1,194) = 4.17$ ,  $p = .04$ ,  $\eta^2 = .02$ . There were no main effects for therapist and no significant interactions between variables. The pre-treatment and post-treatment means and standard deviations and post-test comparison effect sizes are displayed in Table I. 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.

### Analysis of Clinical Significance

To further determine the impact of feedback on outcome, final outcomes were categorized according to the number of patients who responded to treatment (i.e., met either reliable or clinically significant change criteria) and those who did not respond to treatment (deteriorated or no change). The frequencies and proportions of patients identified as potential treatment failures and meeting the outcome category criteria are presented in Table II. 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% (37/109), 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

Table I. Means, standard deviations, and effect sizes for pre and post outcomes by treatment group

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

Table II. 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 ( <i>n</i> = 98)	Patient/therapist feedback + CST ( <i>n</i> = 109)
	<i>n</i> (%)	<i>n</i> (%)
Deteriorated <sup>a</sup>	12 (12.24)	7 (6.42)
No change <sup>b</sup>	63 (64.29)	65 (59.63)
Reliable change <sup>c</sup>	17 (17.34)	25 (22.94)
Clinically significant Change <sup>d</sup>	6 (6.1)	12 (11)

<sup>a</sup> Worsened by at least 14 points on the OQ-45 from pre- to post-treatment.

<sup>b</sup> Improved less than 14 points and worsened by less than 14 points on the OQ-45.

<sup>c</sup> Improved by at least 14 points on the OQ-45 but did not pass the cut-off between dysfunctional and functional populations.

<sup>d</sup> Improved by at least 14 points on the OQ-45 and passed the cut-off between dysfunctional and functional populations.

treatment in the absence of feedback and problem-solving tools. As can be seen in Table II, 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, whether feedback was offered or not.

**Therapist-by-Therapist Outcomes**

To further examine outcomes in this study each therapist’s patient outcomes were examined and compared through exploratory analysis. Therapists were included as a factor of interest in the analysis as previous research demonstrated significant differences in outcome between therapists (Okiishi, Lambert, Nielsen, & Ogles, 2003; see also de Jong, van Sluis, Nugter, Heiser, & Spinhoven, 2012). Therapist-by-therapist results are presented in Table III and Figure 1. This analysis provided an examination of possible differences between therapists in their ability to use feedback. Organizing outcome in this way substantially reduces the number of patients seen by each therapist within each

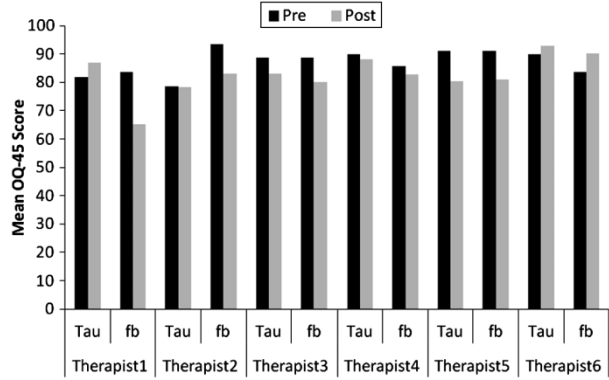


Figure 1. Mean outcome scores at pretreatment and posttreatment for not-on-track patients for each therapist.

category, making reaching critical values more difficult as the number of patients seen in each condition is reduced (range per condition from 11 to 26). In Figure 2 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.

This analysis shows that all therapists produced at least slightly 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 contrast with changes in patients seen by the other three therapists. Therapists 4, 5, 6 barely improved the outcomes of their clients when they received feedback. As a group they averaged only an effect size difference of .05 (.07, .05, .02, respectively). 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. 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).

Table III. Means for pre-treatment and post-treatment scores by condition for each therapist

	TAU		P/T Fb + CST	
	Pre <i>M</i> ( <i>SD</i> )	Post <i>M</i> ( <i>SD</i> )	Pre <i>M</i> ( <i>SD</i> )	Post <i>M</i> ( <i>SD</i> )
Therapist 1	79.69 (16.81)	74.31 (19.26)	82.17 (18.75)	63.82 (17.51)
Therapist 2	87.63 (12.76)	78.36 (18.66)	90.00 (15.46)	77.07 (13.09)
Therapist 3	87.02 (17.64)	80.50 (18.31)	82.20 (17.64)	73.30 (14.93)
Therapist 4	85.59 (17.66)	75.46 (17.59)	88.8 (15.65)	80.97 (20.96)
Therapist 5	80.81 (16.44)	70.81 (16.06)	87.40 (15.60)	76.83 (16.14)
Therapist 6	83.54 (70.58)	70.58 (20.51)	90.85 (11.49)	78.71 (17.81)

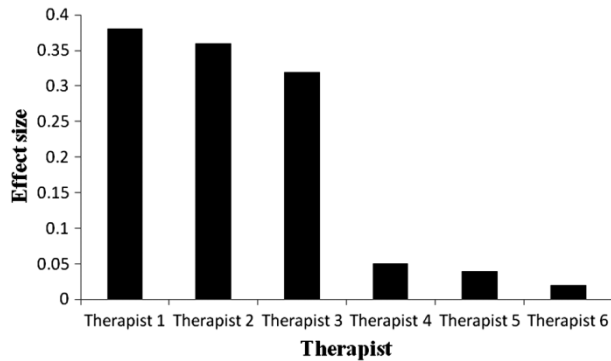


Figure 2. Effect sizes for differences between TAU and fb conditions for each therapist.

### Effects of Feedback on Amount of Psychotherapy

A 6 (Therapist)  $\times$  2 (Treatment) ANOVA was performed on the mean number of therapy sessions. Overall, patients who were considered treatment “completers” ( $n = 210$ ), i.e. stayed in treatment for at least the minimal time needed to allow for implementation of the whole feedback package, received a mean of 9.38 sessions. The average range across therapists was between 8.00 and 10.15 sessions; for individual clients the number of sessions ranged from 5 to 26. Results from an ANOVA where only NOT clients were included showed no significant difference between TAU and feedback conditions, no significant differences in mean number of sessions between therapists and no interaction between therapists and treatment condition. These results suggest that the improved outcomes found in the feedback group could not be attributed to a larger dose of treatment given to these patients. On average all treated patients combined (on-track and not-on-track) received 6.63 ( $SD = 4.43$ ) sessions of treatment.

Given that the practice in the clinic was to spread out treatment, a similar 6 (Therapist)  $\times$  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 condition, suggesting that the feedback did not change the frequency with which therapists saw their clients. 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 over 15 weeks, ( $M = 14.76, SD = 13.78, p = .02$ ) while the other had patients who 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 percentage 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 feedback interventions (coming from our BYU group) that rely on progress feedback (with alarm-signals) and the use of Clinical Support Tools by clinicians reduce failures rates and increase 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 this feedback have better outcomes than those same therapists’ patients when they do not?

Results suggested that of the patients who were predicted to be treatment failures (207/370, 56%), those 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), who summarized six studies from the BYU group. They are closer to the average effect summarized by Knaup et al. (2009) from a heterogeneous group of feedback studies. In the Shimokawa meta/mega-analysis, progress feedback with the CST intervention compared to TAU produced an average  $d = .70$ . Even in the prior study conducted by Hawkins et al. (2004) in the same hospital-based outpatient clinic the progress feedback to patients and therapists (without the CST intervention) produced an effect size of .30 compared to TAU.

The categorization of each patient’s change using the Jacobson and Truax (1991) criteria did not result in a statistically significant advantage for the feedback condition. Nevertheless, feedback patients were more often classified as improved or recovered (34% versus 23% in TAU) and half as likely to deteriorate (6.42% versus 12.24%). In the Hawkins et al. (2004)



study deterioration was also cut in half, but 32% of individuals recovered or improved in treatment as usual, while 56% of feedback patients did so.

It appears that while the effects of feedback in the current study were reliable, generally 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). When patients and therapists received progress feedback patients 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 began treatment with similar levels of disturbance (87.86 TAU versus 89.74 feedback) but left treatment far from the clinical cut-off of 63/64 (83.74 for TAU versus 81.62 for feedback). Both groups were far from entering the ranks of normal functioning at the end of treatment. Six years had passed between initiation of the Hawkins study and the current study and some important practice patterns had changed as well.

In the Hawkins study patients received, on average, approximately 12 sessions of *weekly* treatment, compared to the average of 6–7 sessions occurring about every third week in the current study. It can be speculated that both the total dosage and the spacing of sessions could have reduced treatment effects (Reese, Toland, & Hopkins, 2011). Clinical trials identifying empirically supported psychotherapy usually provide 12–14 (or more) sessions of (at least) weekly psychotherapy (Hansen et al., 2003) and consider this a minimally sufficient dose. Furthermore the dose-response literature shows a relationship between dosage and positive outcomes at least up to the eighth session of care (Baldwin, Berkeljon, Atkins, Olsen, & Nielsen, 2009; Barkham et al., 2006).

Dosing and spacing may be particularly important in feedback research. Riemer and Bickman (2011), based on their review of effective feedback practices, stress the importance of feedback being “immediate.” In the current study it became clear that even though the feedback was intended to be immediate (provided and used within a week), sometimes weeks went by before this information could be used by the therapist to address the difficulties experienced by his/her patient. All therapists averaged 2 or more weeks between sessions, with the typical practice hovering around 3 weeks between sessions. As Riemer and Bickman suggest, the timeliness and relevance of feedback are crucial variables to consider when

designing and implementing studies. In addition, reductions in the total number of sessions offered to patients may have made it more difficult to turn the therapy around once it went off-track.

The smaller effects of feedback found in the current study may also be related to the fact that three of the six therapists were apparently able to use the feedback information to substantially benefit clients (compared to their clients’ outcome in TAU) while the other three therapists were not (with an effect size difference ranging from near zero to .35). 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 (or 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 have decreased 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?

As suggested by feedback intervention theory (Riemer & Bickman, 2011), regular and individualized training in utilizing feedback information may highlight its importance for improving client outcomes and thus the feasibility of reaching this goal. Just as important, training may strengthen therapists’ intrinsic motivation to adhere to research guidelines in general and adequate usage of the OQ-Analyst in particular. Effective use of feedback is more likely to occur, as Riemer and Bickman point out, when psychotherapists perceive feedback as being from a credible source, something that further training may be able to achieve. As Carlier et al. (2010) suggest, this could be of special benefit to those patients who are at risk of deterioration.

Nevertheless, the current study combined with findings from the Hawkins study suggests the possibility that the interventions do not work as well with more disturbed patients as with the less disturbed. Related to this possibility 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% were on medication. The use of medication may improve outcomes independent of feedback, making the effects of feedback harder to detect in more disturbed populations. 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.

Given the replication presented here, in the next line of research in this area it 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 in routine care) and using this information to help therapists improve their ability to problem-solve with patients may strengthen the feedback intervention. Future research should also attend to issues surrounding the use of feedback in situations where the frequency of psychotherapy sessions is diluted.

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