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Client/Therapist Feedback and the Role of the Alliance on Psychotherapy Outcomes

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Client/Therapist Feedback and the Role of the Alliance on Psychotherapy Outcomes

by

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the requirements for the degree of
Doctor of Philosophy in Clinical Psychology

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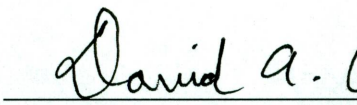
Each person whose signature appears below certifies that this dissertation in his/her opinion is adequate, in scope and quality, as a dissertation for the degree Doctor of Philosophy.



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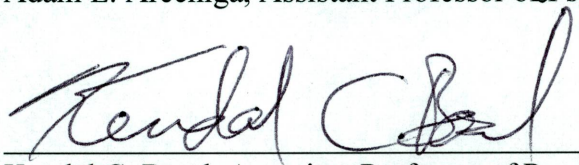

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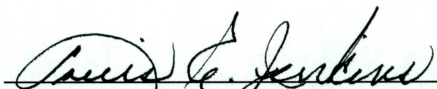

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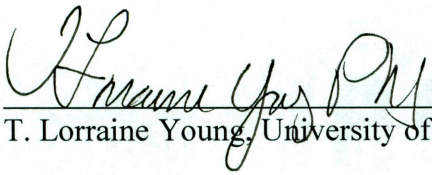

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DEDICATION

God has blessed me immeasurably. For His grace, guidance, and goodness, I am humbled in gratitude. "For you have always been my help; in the shadow of your wings I rejoice" (Psalms 63:7). This dissertation is dedicated to the four people who have surrounded me with love throughout my life and without whom, no achievement would be meaningful. It is because of them and their love that I consider my life to be successful. I carry in my heart my father, Lee Preston, whose gentle spirit of service and generosity is my inspiration and in whose memory, I strive to be a kinder person. I am so grateful to have as my mother, Wanda Preston, my first and constant role model in all things. Her unfailing support and prayers have uplifted me in my every undertaking. It would be impossible to convey the appreciation and adoration I have for my beloved husband, Ramiro Cisneros, who is a paragon of patience and selflessness. I am honored to share such our sweet life with him and all of the joys, adventures, and trials that go with it. No title I could earn in academia could compare to that of "mommy." I am awed at the blessing of our daughter, Rebecca Lee Cisneros, whose sweetness melts my heart and whose delightful inquisitiveness makes each day exciting and intriguing.

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ABBREVIATIONS

OQ	Outcomes Questionnaire
OQ-45	Outcomes Questionnaire, 45 Item Version
CSTs	Clinical Support Tools
ASC	Assessment for Signal Clients
PDA	Personal Data Assistant
SD	Standard Deviation
HAQ-II	Revised Helping Alliance Questionnaire
GAF	Global Assessment of Functioning
DSM-IV-TR	Diagnostic and Statistical Manual – 4th Edition, Text Revision
ANOVA	Analysis of Variance
MANOVA	Multivariate Analysis of Variance
NOT	Not-On-Track
OT	On-Track
ANCOVA	Analysis of Covariance
MANCOVA	Multivariate Analysis of Covariance

ABSTRACT OF THE DISSERTATION

Client/Therapist Feedback and the Role of the Alliance on Psychotherapy Outcomes

by

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Doctor of Philosophy, Graduate Program in Clinical Psychology
Loma Linda University, September 2010
Dr. David A. Vermeersch, Chairperson

Through a system of patient-focused outcomes research which has employed a quality assurance system for tracking client progress in therapy, there has been consistent evidence that utilizing the system to identify those who are not responding to treatment and warning their therapist about the client's risk significantly improves client outcomes in psychotherapy. Although outcomes have been improved, significant proportions of clients have treatment failures or see no improvement in therapy. Moreover, feedback to therapists appears to be most effective in improving outcomes for the minority of clients who are already at risk of treatment failure.

Attempts to augment the feedback effect with clinical support tools and by providing feedback to clients as well as therapists have yielded inconsistent results. The first goal of the current study was to determine whether providing feedback to participants as well as to therapists would result in better outcomes for university counseling center clients, over and above the effect of feedback to therapists alone. Results indicated that feedback to both participants and therapists resulted in significant reductions in distress, as compared to participants in the therapist-only feedback condition and that the benefit of double feedback extended to participants who were already making expected progress in treatment as well as those at risk of a treatment

failure. Secondly, the reason why therapist feedback improves outcomes has remained largely unknown, but one hypothesis has been that feedback to therapists strengthens the relationship between therapists and clients, thus improving outcomes. Thus, the second aim of the study was to test whether the therapeutic alliance mediates the relationship between feedback and outcomes in psychotherapy. Surprisingly, therapeutic alliance was found to be unrelated to any of the outcome measures.

Psychotherapy Outcomes Research

In a given year, approximately 15% of adults living in the United States utilize some form of mental health services (Kessler, Berglund, Zhao, Leaf, Kouzis, Bruce, et al., 1996). This translates to several million people a year who are seeking psychosocial services. In an era in which third party payers have a large influence on the delivery and cost of such services, there has been increased pressure on providers of such services to demonstrate their utility and the cost-effectiveness of such services. To meet this demand, there has been a response by the scientific community of demonstrating the empirical validity of treatment options.

In 1995, the American Psychological Association Task Force on Promotion and Dissemination of Psychological Procedures (Task Force, 1995) suggested that psychotherapists employ only those treatments that have substantial evidence of efficacy. This has led to the rise of outcomes research in the field of clinical psychology, which seeks to determine the factors associated with positive and negative outcomes in psychotherapy. The goal of such research is to develop ways of identifying the qualities of clients, therapists, and techniques associated with positive outcomes so as to capitalize on these, while also identifying those characteristics associated with negative outcomes and tailoring alternative therapeutic techniques to avoid such negative outcomes. Thus, elucidating what factors are associated with improvement that may be maximized or expanded up and determining what factors are associated with lack of improvement or even worsening of symptoms in therapy so that they may be prevented or identified earlier is crucial for improving the overall outcomes for clients receiving psychotherapy.

Psychotherapy has been repeatedly demonstrated to be an "empirically supported" treatment (Chambless & Hollon, 1998) for a wide variety of psychiatric diagnoses, as well as sub-clinical levels of psychological distress (Lambert, 2005). Indeed, psychologists can boast that about 75% of clients who enter psychological treatment show some benefit (Lambert & Ogles, 2004). Unfortunately, although the average response of clients to psychotherapy is positive, not all clients improve to the same degree and at the same rate during psychotherapy. Outcomes research has demonstrated that although psychotherapy helps a great many clients, there is a substantial portion of the population who see no improvement through psychotherapy, and a small percentage appear to actually have worse outcomes after psychotherapeutic treatment (Hansen, Lambert, & Forman, 2002; Lambert & Ogles, 2004). Thus, there is a great deal of room for improvement in the delivery of psychosocial services.

Patient-Focused Outcomes Research

The goal of patient-focused outcomes research (Howard, Moras, Brill, Martinovich, & Lutz, 1996) is to compare an individual client's profile of symptoms and other clinical factors to similar clients' outcomes to determine the client's rate of improvement, relative to their expected level of improvement, given their initial levels of distress. By monitoring an individual client's progress over the course of therapy, the focus is on observing noticeable change within that particular client, rather than the average response of the average client. Rather than being conducted within the tightly-controlled experimental conditions of typical randomized clinical trials, patient-focused outcomes studies are typically conducted in environments that are as similar as possible

to routine clinical practice, with the hope that the results would be most applicable to psychotherapy as it is typically delivered in the field.

Outcomes Questionnaire (OQ) Quality Assurance System

In keeping with the aims of patient-focused outcomes research, Lambert and colleagues (Lambert, Whipple, Smart, Vermeersch, Nielsen, & Hawkins, 2001; Lambert, Whipple, Vermeersch, Smart, Hawkins, Nielsen, & Goates, 2002; Lambert, Hansen, & Finch, 2001; Lambert, Burlingame, Umphress, Hansen, Vermeersch, Clouse, & Yanchar, 1996; Lambert, Whipple, Bishop, Vermeersch, Gray, & Finch, 2002; Mueller, Lambert, & Burlingame, 1998; Vermeersch, Lambert, & Burlingame, 2000; Lambert, Whipple, Hawkins, Vermeersch, Nielsen, & Smart, 2003; Whipple, Lambert, Vermeersch, Smart, Nielsen, & Hawkins, 2003) developed a system of quality assurance to monitor progress for clients receiving psychotherapy and have used it to demonstrate its effectiveness at improving a variety of client outcomes. In this system, client progress is continually monitored and provided to clinicians in order to guide ongoing treatment, especially for clients who are not having a favorable response to treatment. When the quality assurance system identifies that a client is not making expected progress and is at an elevated risk of having a negative treatment outcome, clinicians are warned as to this possibility.

Operational definitions of outcomes. It is also important to specify what is meant by the term "psychotherapy outcomes" and to operationally define what constitutes positive and negative outcomes. In the quality assurance system developed by Lambert and colleagues, the Outcome Questionnaire-45 item version (OQ-45) is generally utilized as the primary outcome measure. The OQ-45 (Lambert, Hansen,

Umphress, Lunnen, Okiishi, Burlingame et al., 1996) is a 45-item self-report questionnaire that is completed by clients at each psychotherapy session, upon which feedback is based. The scale was designed to measure progress through repeated administration over the course of treatment. The OQ-45 assesses symptoms of psychological disturbance, interpersonal problems, social role functioning, and quality of life. The OQ-45 total score is often utilized in this line of research as the client's global level of functioning. Psychometric research has indicated that the OQ-45 is a brief measure of psychological disturbance that is reliable, valid, and sensitive to changes patients make during psychotherapy and for tracking clients' responses to treatment. However, a client's outcome is not adequately represented by a single assessment of functioning at a given point in time. Rather, it important to identify how well the client is functioning objectively, as compared to others in the population and to determine if a client has made clinically significant change during therapy.

Clinically significant change. The concept of "clinically significant change" was operationally defined by Jacobson, Follette, & Revenstorf (1984) as a patient moving from being dysfunctional to being functional (based on normative comparisons) and movement so large that is it not likely to be the result of measurement error (reliable change). In the patient-focused outcomes literature, both criteria are necessary for showing clinically significant change. However, even if one does not meet both these criteria, it does not mean a client has not had a positive outcome. Clients often enter psychotherapy with scores that would put them in the "functional" category. That is, clients often have OQ scores that are lower than would be expected of someone seeking psychotherapeutic services. This is particularly common in certain clinical settings where

clients are higher-functioning, such as university counseling centers, employee assistance programs, and certain types of outpatient clinics where clients are often receiving services for v-code diagnoses and sub-clinical levels of distress. Because these clients are not starting therapy in the dysfunctional range, they cannot meet the standard for clinically significant change. Research has told us, however, that these clients still tend to feel that they have improved as a result of therapy, which should indicate a positive outcome.

Lambert, Hansen et al. (1996) utilized the clinical and normative data from the OQ-45 along with the formulas developed by Jacobson and Truax (1991) to create cut-off scores for the OQ-45. Clients whose OQ total score changes in a positive or negative direction by at least 14 points are considered to have made "reliable change." This magnitude of change on the OQ-45 exceeds the measurement error of the test, based on the reliability data from the normative sample of the OQ-45. The cutoff on the OQ-45 for indicating the point at which an individual's score on the OQ-45 is more likely to have come from the dysfunctional population than a functional population has been estimated to be 64. That is, a client whose score is 63 or below is considered to be functioning at a level that is more similar to non-clients than clients at that point in time. Passing this cutoff is the second criterion for clinically significant change. On the OQ-45, clients who show reliable change and pass the cutoff are considered "recovered." Those who show reliable change for the better but do not pass the cutoff are considered "improved." Clients who pass the cutoff score for being in the dysfunctional range and whose outcome scores reliably worsen are considered to have "deteriorated." Clients who make no reliable change in their outcome scores are considered to have made "no change."

Positive treatment outcomes include clients who are recovered or improved, while negative treatment outcomes are those in which clients deteriorate or make no change. Clients who are responding to treatment are those who are showing reliable improvement in outcomes scores but who are not yet in the functional range, and nonresponders are those clients who remain in therapy but who are showing no reliable improvement or deterioration. Support for the validity of the OQ-45's reliable change and clinical significance cutoff scores was reported by Lunnen and Ogles (1998) and Beckstead, Hatch, Lambert, Eggett, Goates, and Vermeersch (2003).

Prediction of Outcomes

In addition to repeatedly measuring client functioning and levels of symptomatology, another aim of patient-focused research was to develop a signaling system to identify a client who was likely to fail in treatment, before psychotherapeutic services were terminated. Although therapists themselves often claim to be in the best position to judge whether or not a client is progressing sufficiently in therapy, Hannan, Lambert, Harmon, Nielsen, Smart, Shimokawa et al. (2005) demonstrated that therapists are rarely able to predict clients who will or will not ultimately benefit from psychotherapy. Similarly, Lambert (2005) also found that therapists tend to have overly positive views of client outcomes and are especially unlikely to perceive a client as having deteriorated during therapy. By contrast, the use of a questionnaire and decision rules on the basis of a client's expected progress were able to identify 85% of those clients who deteriorated in therapy based on the questionnaire data from three sessions

(Hannan et al, 2005). Thus, they argued that it is critical for therapists to utilize formal methods of identifying clients likely to deteriorate in therapy.

The assumption of this line of research is that providing information to the therapist about the client's treatment progress will positively affect the client's ultimate outcome. As such, the client is asked to respond to the OQ-45 at each psychotherapy session. The data of the measure is analyzed to determine whether a client is progressing in therapy as expected and if the client's ultimate outcome is likely to be positive or negative. Brown and Lambert (1998, as reported in Lambert et al., 2003) utilized multiple regression analyses to identify the best predictors of client's status at the end of treatment. They found that the best predictors were pre-treatment OQ-45 score and change score between treatment sessions. That is, Brown and Lambert's data indicate that the best predictors of whether a client would end treatment with a positive or negative outcome was by how distressed the client was prior to beginning therapy (as measured by the pre-treatment OQ-45 total score) and whether the client's early response to treatment was positive or negative. Clients who made positive gains early on in therapy were likely to have final outcomes that were positive and that these gains would be maintained after termination of therapy, while an early negative response to therapy was indicative of an overall negative treatment outcome.

This data, along with other information about early response to treatment, correlational data related to the dose-response effect of psychotherapy, and the reliability and normative data of the OQ-45 were employed to create algorithms used to identify how a given patient was responding to therapy. That is, the algorithms are used to identify clients whose pattern of response to psychotherapy is most similar to those who

leave treatment before receiving benefit of psychotherapy or are otherwise at risk for negative treatment outcomes. Lambert, Whipple et al. (2002) investigated the accuracy of the algorithms at predicting negative treatment outcomes. They found that 7.3% of the sample of university counseling center clients deteriorated during treatment. Approximately 80.6 % of these clients who actually deteriorated during therapy were identified by the algorithms as likely to have a negative treatment outcome, while approximately 19.4% of clients who deteriorated were missed by the algorithms. This system was able to correctly identify 79.2% of clients as likely to have a positive treatment outcome, while 20.8% of clients were identified as likely to have a negative treatment outcome did not actually deteriorate during therapy. The success of the algorithm's predictive ability was similar to a purely statistical approach that employed multilevel linear modeling (Finch, Lambert, & Schaalje, 2001).

Psychotherapy Outcomes in Minority Clients

As in any line of research, it is important to know whether the findings of the body of outcomes research are generalizable across genders and ethnicities. As ethnic minorities are becoming a larger proportion of the consumers of psychological services, it is imperative that we know whether the same outcomes measures are empirically valid for use with a diverse population of clients. Because members of minority groups often face greater stressors as a result of lower socioeconomic status, are overrepresented amongst the homeless and unemployed, and face the stigmas associated with prejudice and discrimination, it is unreasonable to assume that the typical response to therapy by predominantly Caucasian clients will be the same for members of ethnic minorities.

Lambert, Smart, Campbell, Hawkins, Harmon, and Slade (2006) reviewed a number of studies on culturally-sensitive psychotherapy. Some studies have suggested that matching clients and therapists of the same or similar ethnic or cultural backgrounds may improve psychotherapy outcomes, while others have suggested that there is no benefit of ethnic matching. A meta-analysis by Maramba and Hall (2002) found negligible effect sizes of dropout rates, psychosocial service utilization rates, or level of client functioning, regardless of whether clients and therapists were matched on the basis of ethnicity. Lambert and colleagues noted that most of the studies included in the meta-analysis were small and included small numbers of ethnic minorities and that the meta-analysis was dominated by two studies. Thus, they sought to determine whether university counseling center clients from ethnic minorities have different outcomes than Caucasian clients. They found that there were no statistical differences between initial outcomes scores across ethnic groups. Similarly, all groups made significant improvements during the course of therapy, with differences between ethnic groups' pre-post outcome scores being not significant. They also found similar dropout rates for Caucasians and African-American, Latino, Asian-American, and Native American clients who were seen by predominantly Caucasian therapists.

Application of the OQ with minority clients. Although it appears that clients from varied backgrounds tend to have similar experiences in and outcomes from therapy, the instruments used to measure progress in therapy may not be equally sensitive for clients of different cultural heritages. The normative data for the OQ-45, which was used to establish the cutoff score and to identify clinically significant change was derived from samples that were 91% Caucasian. Thus, the normative sample did not adequately

represent ethnic minorities, who have been increasingly utilizing psychosocial services in the United States.

Nebeker, Lambert, and Huefner (1995) compared an African-American sample of clients to the established norms for the OQ-45 and found no significant differences between the groups. Gregersen, Nebeker, Seely, and Lambert (2004) found significantly higher OQ-45 scores for both Asian and Pacific Islander students in a university counseling center, when compared to the normative sample. Among those classified by the OQ-45 as being more like a nonclinical/functional sample, Asians had the highest OQ-45 scores, followed by Pacific Islanders, and Caucasians having the lowest outcomes scores. Interestingly, among those classified by the OQ-45 as most likely to come from a clinical/dysfunctional sample, there were no differences between ethnic groups with respect to OQ scores. Gregersen and colleagues suggested that even when Asians and Pacific Islanders scored within the nonclinical range, they tended to be closer to the clinical cutoff point than did Caucasians, reflecting greater psychological distress. These results could indicate that Asians and Pacific Islanders may truly experience higher levels of distress or they may be attributable to a culturally-insensitive design of the OQ-45. Gregersen et al. noted that the wording of the OQ-45 tended to include a number of questions that are framed from an individualistic viewpoint that may conflict with the expectations of collectivist cultures. Thus, when clients from Asian or Pacific Island cultures that tend to be more collectivistic respond to the OQ-45, their responses may appear more pathological or reflect greater distress when indeed they should not. The authors acknowledged that because the OQ-45 was design to measure a particular client's change over the course of therapy and was intended to be administered repeatedly so that

each client serves as his or her own control, multiple measures of the OQ-45 from the same client should be highly correlated, thus still being an adequate measure of change in distress over time for that particular client. They suggest that until further research is conducted to determine whether separate norms for the OQ-45 should be utilized for clients from different ethnic groups, the OQ-45 and its cutoff score should be used with caution.

In OQ quality assurance system, computerized software is employed in which the client's pattern of OQ-45 scores is entered into the algorithm, and feedback about the client's progress is generated. Therapist feedback includes a progress graph of all the client's OQ-45 scores to date, a color-coded indicator of client progress, and a written message about the client's status. The color codes and associated messages to therapists are as follows:

White code: "The client is functioning in the normal range. Consider Termination."

Green code: "The rate of change the client is making is in the adequate range. No change in the treatment plan is recommended."

Yellow code: "The rate of change the client is making is less than adequate. Recommendations: Consider altering the treatment plan by intensifying treatment, shifting intervention strategies, and monitoring progress especially carefully. This client may end up with no significant benefit from therapy."

Red code: "The client is not making the expected level of progress. Chances are he/she may drop out of treatment prematurely or have a negative treatment outcome. Steps should be taken to carefully review this case and decide upon a new course of action such as referral for medication or intensification of treatment. The treatment plan should be reconsidered." (Lambert, Whipple, et al., 2002, p. 153).

The software also highlights for the therapist critical items included in the OQ-45 that are related to suicidality, homicidality, and substance abuse, as well as a breakdown of the client's most recent OQ-45 score into symptom distress, interpersonal functioning, and social roles. In the literature, clients who are identified by the system as possible treatment failures and flagged with yellow or red feedback messages are referred to as

"signal-alarm clients," "nonresponders," "not-on-track (NOT),"or at-risk of a treatment failure or negative treatment outcome.

Lambert, Whipple et al. (2001) utilized this quality assurance system to test the hypothesis that providing feedback about clients' reported levels of symptomatology and functioning to therapists would improve client outcomes. Feedback graphs and messages about clients' progress in therapy were provided to therapists of half of the clients in their university counseling center sample (feedback group) and were withheld from therapists of the other half of the sample (treatment-as-usual group). They found that providing feedback to therapists had no effect on client outcomes when the client was progressing as expected in therapy, but that it was effective at improving outcomes in those clients who were NOT. Outcomes for NOT clients were significantly improved in the feedback, as opposed to the treatment-as-usual, group. Worsening of symptoms in NOT clients in the feedback group was one-fourth the level of NOT clients who received treatment-as-usual. Furthermore, the provision of feedback also had the result of keeping clients at risk for negative outcomes in therapy longer. By contrast, on average, clients progressing as expected whose therapists were provided with feedback were able to decrease the number of sessions required in therapy, without affecting their final positive outcomes, making the utilization of feedback a cost-effective strategy. Lambert, Whipple, Vermeersch et al. (2002) replicated these findings; they found that feedback to the therapists of NOT clients resulted in improvements in 32% of clients, as compared to 18% in the treatment-as-usual clients.

Efficacy of Feedback to Therapists Using the OQ

Lambert et al. (2003) conducted a meta-analysis of studies using the OQ-45 quality assurance system, conducted in university counseling center settings, where therapist feedback was compared to a treatment-as-usual control group. They found that NOT clients in the treatment-as-usual and feedback conditions had similar courses of therapy up to the point that the system identified they were at risk for a negative treatment outcome. Both groups worsened from an initial average OQ score of 79 to an average score of 89 (i.e., approximately half of a standard deviation). After being identified as being NOT, clients whose therapists were provided feedback about their status improved to an average score of 72, whereas the NOT clients whose therapists were not provided with feedback improved to an average score of 80. In each of the studies reviewed, this difference was statistically significant, and the meta-analytic data indicated an effect size of 0.39. The meta-analysis also revealed that 21% of signal-alarm cases who received treatment-as-usual (i.e., no feedback) terminated therapy with a negative outcome, whereas only 13% of NOT clients who were in the feedback condition ultimately had negative treatment outcomes. The provision of feedback was also associated with a 75% greater likelihood of achieving clinically significant or reliable change during the course of therapy. The authors concluded that when clinicians are alerted to a client's deteriorating score on outcome measures, they are more likely to be able to keep these at-risk clients engaged in treatment and ultimately achieve better outcomes than if clinicians do not receive feedback about a client's progress.

Lambert, Whipple et al. (2003) conducted a meta-analysis of several large studies evaluating the effect of feedback to therapists about client progress. Each of these studies

utilized progress graphs and warning about clients who were not making expected treatment gains. In their meta-analysis, they found that 21% of NOT clients whose therapists were not given feedback had a negative therapeutic outcome at the time of termination. By comparison, NOT clients whose therapists received feedback about their status ultimately had negative outcomes at the time of termination in only 13% of cases. Clients in the feedback condition made significantly greater improvement in therapy than those whose therapists were not given feedback. The effect sizes for the NOT clients whose therapists received feedback versus those whose therapists did not receive feedback ranged from 0.34 to 0.92. Lambert and colleagues used this data to argue for the use of feedback to therapists as part of routine care. Recognizing that clients are not responding to treatment as would be expected provides therapists an earlier opportunity to implement different therapeutic techniques. When given feedback that a client is not responding as desired to therapy, Lambert and colleagues found that therapists were able to keep these clients in treatment for a longer period of time, suggesting that when therapists were made aware of deterioration, they became more attentive to clients. This is consistent with the dose-response hypothesis, which predicts that benefits of psychotherapy are correlated with the number of therapy sessions attended by a client (Anderson & Lambert, 2001). Thus, if the provision of feedback assists the therapist in keeping a client in therapy longer, the chances of positive outcomes are increased.

Augmenting Feedback to Therapists

Although Lambert and colleagues have amassed an impressive collection of data indicating the effectiveness of therapist feedback on improving the outcomes of those

clients at risk of a negative treatment outcome, further improvements still need to be made. Despite feedback, 75% of the clients in the Lambert, Whipple et al. (2001) study who were identified as being NOT at some point in therapy terminated with a classification of having "deteriorated" or having made "no change" during therapy. Thus, although the provision of feedback significantly reduced the likelihood of negative outcomes, few would argue that positive outcomes for only 25% of a particular subset of clients is a complete success; accordingly, Lambert and colleagues (Lambert, Whipple et al., 2001, Lambert, Whipple, Vermeersch et al., 2002) argued that a stronger intervention was needed.

The effect of clinical support tools. Whipple, Lambert, Vermeersch, Smart, Nielsen, and Hawkins (2003) sought to augment the beneficial effects of therapist feedback with additional clinical support tools (CSTs) at the therapist's disposal. Harmon, Hawkins, Lambert, Slade, and Whipple (2005) described the clinical support tools as "an empirically based problem-solving strategy arranged hierarchically in a decision tree" (p. 177). They envisioned that the information from the CSTs could assist the therapist in identifying the factors that may be hampering the client's treatment progress. The CSTs were empirically developed to include an assessment tool (later named the Assessment for Signal Clients, or ASC), an evidenced-based decision tree to suggest possible diagnostic reformulation, and suggestions for interventions appropriate to problems noted in particular domains. The process of developing the CSTs was based upon a review of the literature related to psychotherapy outcomes. The first construct included in the CSTs was a measure of the therapeutic relationship, because of its considerable evidence as a consistent predictor of outcome (Horvath & Symonds, 1991).

The second construct included in the CSTs was a measure of motivation or readiness to change, which has also been demonstrated as a predictor of good therapy outcome and early termination from therapy (Prochaska & Prochaska, 1999). Furthermore, a measure of social support was included to assess client's perceived social support. These domains were selected because of their empirical relationship with outcomes, their measurability, and their direct association with specific and empirically supported interventions. A particular client may display problems related to only one, several, or all of the domains assessed by the clinical support tools. When the assessment tool indicated that a particular domain was an area potentially inhibiting client progress, therapists could utilize the suggested interventions associated with difficulty in that domain.

The addition of these CSTs was found to significantly improve positive outcomes in NOT clients. More specifically, amongst NOT clients, clients whose therapists were provided both feedback and the CSTs were utilized had significantly better outcomes than those whose therapists were provided with feedback alone. The provision of feedback in conjunction with CSTs resulted in a recovery rate of 49% of NOT clients, whereas the recovery rate for NOT clients in the feedback-only condition was 25%. The use of the CSTs in conjunction with feedback was also associated with a deterioration rate of only 8%, whereas the use of feedback alone was associated with a 19% deterioration rate. Furthermore, the combination of feedback and CSTs resulted in NOT clients staying in therapy for a longer period of time; clients in the feedback and CSTs groups identified as making expected progress in treatment ultimately spent fewer sessions in therapy (Whipple et al., 2003). This indicated that this system may have the beneficial effects of not only improving outcomes for clients in therapy, but it also may

have the ability to make the provision of psychotherapy services more cost-effective and to ensure better management of resources. However, the Whipple study was designed in such a way that therapists utilized CSTs selectively and response bias could have confounded the results.

In a similar study, Harmon, Lambert, Smart, Hawkins, Nielsen, Slade et al. (2007) utilized the methodologically rigorous strategy of randomization of clients to various feedback conditions. They found that the provision of feedback in combination with the use of CSTs was associated with a significant reduction in deterioration rates in a counseling center setting. More specifically, NOT clients whose therapists did not receive feedback and with whom CSTs were not employed had a deterioration rate of 21.3% and, on average, ended therapy one OQ-45 point worse than when they began therapy, or almost a full standard deviation above the cutoff for inclusion in the dysfunctional category. Clients whose therapists received feedback about their status but with whom the CSTs were not employed had a deterioration rate of 17.9%. When weekly progress information was combined with the utilization of clinical support tools, only 7.4% of clients ended therapy with a negative treatment outcome. The average signal-alarm client in this condition ultimately left therapy with an improvement of 14 OQ-45 points from their initial score.

The effect of speeded feedback. Slade, Lambert, Harmon, Smart, and Bailey (2008) sought to expand the utility of clinical support tools by speeding up delivery of feedback about progress in therapy and problem-solving strategies. When the decision rules associated with the quality assurance system signaled that a client was NOT, the client was emailed the questionnaires associated with the clinical support tools. The

clinical support tool measures were scored and provided to the therapist before the participant's next session (i.e., one week after completing the OQ-45 that identified them as being NOT), along with feedback about particular areas that should be evaluated (e.g., alliance, social support, perfectionism, medication consultation).

Immediate utilization of CSTs, allowing for implementation of problem-solving strategies to address why the participant was not responding to treatment, did not improve eventual outcomes for participants, as compared to the same process within the typical timeframe. In the typical timeframe, at the session *after* being identified as NOT, participants completed clinical support tools questionnaire, and results were provided to therapists before the next session, which was two weeks after initially signaling as being at risk). However, the speeded implementation of CSTs resulted in the same amount of client change in therapy but within three fewer sessions. More rapid reduction of levels of distress would likely be viewed by most psychotherapy clients and therapists as desirable, and third party-payers would almost certainly appreciate the cost savings of the delivery of an equivalent reduction of distress in fewer psychotherapy sessions. As such, it appears that faster feedback about how clients are doing strengthens the feedback effect.

Although feedback to therapists alone improves outcomes for clients at risk of negative outcomes, and it appears that CSTs enhance the effectiveness of such feedback, these practices still seem to be beneficial only for those clients who are NOT. Lambert, Whipple, Vermeersch et al. (2002) found that feedback to therapists had no effect on the outcome of clients who were responding to treatment as expected. Only approximately 25% of the clients in the Lambert, Whipple et al. (2001) study were ever identified as

being NOT. That there is no effect of therapist feedback for 75% of clients hardly indicates that feedback to therapists is the answer for improving outcomes across the board. Even though such clients are improving as a result of psychotherapy, there is still much room to improve outcomes for the majority of clients. However, it is imperative that the research in this area retains clinical utility. That is, the goal of patient-focused research has been to develop ways of improving outcomes in ways that may be easily applied to the actual practice of psychotherapy. To do so, new developments must be easily employed and require little additional effort.

The effect of feedback to clients and therapists. If providing feedback to therapists about clients' progress in therapy improves client outcomes, it seems probable that providing feedback to clients will further improve outcomes. Using a quality assurance system as implemented by Lambert and colleagues, the same data clients provide that is used to provide feedback to the therapists can be used to generate feedback for clients. It stands to reason that if clients are provided with more information about how they are doing in therapy, this may provide more opportunities for the client and therapist to discuss treatment progress, goals, and expectations and for the client to feel more invested in therapy, thus increasing the likelihood of positive outcomes.

Hawkins, Lambert, Vermeersch, Slade, and Tuttle (2004) tested this hypothesis in a study that compared client outcomes in a hospital-based psychotherapy clinic in treatment groups in which clients received treatment-as-usual, where therapists were provided with feedback about client progress, and where both the therapists and the clients were provided with feedback about client progress. While both feedback groups showed improved outcomes over the treatment-as-usual group (an effect size of d = .31),

providing feedback to both clients and therapists was superior to providing feedback only to therapists, resulting in a moderate effect of d = .33. Importantly, they found that the combination of feedback to both therapists and clients resulted in improved outcomes in not only at-risk clients, but also in those making expected treatment progress. The provision of feedback to both therapists and clients was also shown to result in improvement in 56% of clients identified as being NOT for positive outcomes, more than doubling the rate of improvement in nonresponders, as compared to the only 25% of NOT clients ultimately improving in the original Lambert, Whipple et al. (2001) study whose therapists only received feedback. The authors concluded that the provision of feedback to both therapists and clients may have more global effects than providing feedback only to therapists and that a therapist's knowledge of a client's progress may not be sufficient to influencing such client-intrinsic factors as motivation. While the dose-effect literature suggests that half of clients will reliably improve within eight sessions of psychotherapy (Howard, Kopta, Krause, & Orlinsky, 1986), Hawkins and colleagues were able to achieve a 64% rate of reliable improvement in clients receiving a similar number of sessions.

It was important that the message provided to clients be carefully worded, especially for clients who were not progressing as expected. One could imagine that being given information suggesting that they were likely to end therapy worse than when they started might be especially upsetting, particularly to depressed or fragile clients who were at a heightened level of risk anyway. Feedback to NOT clients was worded with supportive and encouraging statement along with the information that their self-reported level of distress and progress since beginning therapy was indicative of a possible

negative outcome. For example, participants in the feedback condition who were identified as being NOT were given the message that their self-reported measures of well-being indicated that they likely felt they might be doing worse than when they had entered therapy. The message conveyed that, although their response to treatment thus far had been unfavorable, that their final outcome could be positive. The feedback message also encouraged clients to discuss their concerns about their progress in therapy, alternative approaches to treatment, and goals for therapy with their therapists. Harmon et al. (2005) indicated that the messages were worded this way to bolster the therapeutic alliance by facilitating collaboration between the client and therapist. Hawkins and colleagues (2004) noted that although the NOT clients in their study had very high levels of distress, receiving feedback that they were not progressing as expected in therapy was not associated with any negative effects.

While the addition of feedback to clients as well as therapists was shown to be effective at improving outcomes in a hospital-based clinic, neither Harmon et al. (2007) nor Slade et al. (2008) were able to replicate the results of the Hawkins et al. (2004) study in a university counseling center population, although the reasons for this discrepancy were unclear. Thus, the question of whether feedback to both clients and therapists is effective at improving outcomes in various settings and with different populations of clients has yet to be answered. The clients in the Hawkins et al. (2004) study generally had at least two psychiatric diagnoses, were more likely than not to be on psychotropic medications, and to have previously utilized mental health services. In contrast, clients in university counseling centers, for example, tend to be higher functioning, have lower distress scores initially, are more likely to have a v-code diagnosis (Jacobson & Truax,

1991; Brown & Jones, 2005), and are generally considered to be among the least severely disturbed clients who receive mental health services (Lambert, Hansen et al., 1996). Given that there is a correlation between severity of problems at intake and likelihood of reliable improvement of symptoms by termination (Leuger, 1998), one would expect that a stronger manipulation would be required to bring about reliable change in higher functioning clients who enter therapy with considerably lower OQ-45 scores than are typically seen in clients in other settings. Determining whether providing feedback to clients as well as therapists would improve outcomes in other treatment settings, such as university counseling centers or private outpatient clinics, is an important next step in the outcomes literature.

Aim of the Present Study

The first goal of the present study was to evaluate whether double feedback would result in improved outcomes in a university counseling center population. Hypotheses toward the first goal were: 1) participants in both the single and double feedback conditions would exhibit significant declines in distress, relative to their baseline levels; 2) participants who received feedback about their progress in therapy along with their therapists would have better outcomes than those who did not receive feedback about their progress; and 3) A model of pre-treatment level of symptomatology, feedback condition, and progress status (OT vs. NOT) would account for a significant proportion of the variance in pre-post treatment change score, number of sessions attended, likelihood of achieving clinical significance and reliable change, and time to achieve clinical significance and reliable change.

The Role of the Therapeutic Alliance

In addition to the question about the efficacy of client and therapist feedback in other populations, questions about how and why feedback improves client outcomes remain. In order to capitalize on the effects of feedback in improving client outcomes, it is important to understand what it is about feedback that is associated with client improvement in therapy. It has been hypothesized that feedback works to improve client outcomes by strengthening the therapeutic alliance.

The therapeutic alliance is often defined as the healthy, trusting aspects of the client-therapist relationship (Baldwin, Wampold, & Imel, 2007), and it is recognized as one of the therapeutic factors common across all psychotherapeutic orientations. The therapeutic alliance has been described as an essential element of successful psychotherapy (Norcross, 2002). In fact, a 2006 Principles of Change Task Force reviewed the literature associated with the treatment of a variety of psychiatric disorders in relation to client characteristics, psychotherapy techniques, and the therapeutic relationship. They reported that a strong therapeutic relationship was the single factor associated with change that was empirically supported across all of the psychiatric disorders investigated (Castonguay & Beutler, 2006). It was for this reason that Lambert and colleagues included the investigation of the therapeutic alliance as the first step on their decision tree used with the CSTs to identify why at-risk clients were not making progress.

The therapeutic alliance has been described by many authors, and the description and operational definition often varies considerably across studies. Horvath and Bedi (2002) defined the therapeutic alliance as the quality and strength of the collaborative

relationship between client and therapist in therapy; this was elaborated upon by Hatcher and Barends (2006) as the "degree to which the therapy dyad is engaged in collaborative, purposive, work" (p. 293). Bordin (1979) described the therapeutic alliance as being generalizable across all psychotherapies and operationally defined it as the agreement on goals, assignment of tasks, and the development of bonds appropriate to these therapeutic goals and tasks. Lambert and Barley (2002) elaborated on this definition by describing tasks as the behaviors and processes within psychotherapy sessions that make up the work of therapy that takes place in therapy sessions, and the work done must be viewed by both the therapist and the client as being relative to the problem and an important focus of attention. The goals of therapy are the objectives of the therapy process that must be agreed upon by the therapist and client. Furthermore, both must be in agreement that the goals are directly related to the problem bringing the client in to therapy. Bonds are the "positive interpersonal attachment between therapist and client of mutual trust, confidence, and acceptance" (p. 25).

The Effect of the Alliance on Psychotherapy Outcomes

Across theoretical orientations, studies, reviews, and meta-analyses have consistently demonstrated that the therapeutic alliance is predictive of the client's outcome in therapy (Luborsky, 1976; Eaton, Abeles, & Gutfreund, 1988; Bachelor, 1991; Horvath & Symonds, 1991; Martin, Garske, & Davis, 2000; Lambert & Barley, 2002). In fact, meta-analyses have found average effect sizes of 0.22 (Martin et al., 2000) and 0.26 (Horvath & Symonds, 1991) between the alliance and psychotherapy outcomes. In other words, it appears that approximately one quarter of the variance of therapeutic success

may be accounted for by the quality of the relationship between the therapist and the client. This relationship between alliance and outcome appears to be consistent regardless of the type of therapy employed in psychotherapy and whether it is assessed by the client, the therapist, or by an independent observer (Horvath, 2001), the presenting problem in therapy, and the severity of the client's diagnosis (Horvath & Bedi, 2002; Horvath & Symonds, 1991, Martin et al., 2000). In fact, the relationship between the therapist and client appears to be the strongest variable in any psychotherapy process to outcome relationship (Norcross, 2002). Another robust finding from the extant research is that the strength of the therapeutic alliance tends to be established within the first three sessions of psychotherapy, with little change over the course of therapy (Luborsky, 1976; Eaton et al., 1988). Accordingly, a weak therapeutic alliance early in therapy predicts client dropout of therapy (Constantino, Castonguay, & Schut, 2002).

Factors contributing to the therapeutic alliance. The synergistic client-therapist relationship appears to be a product of factors associated with the therapist, factors associated with the client, and the interaction of client and therapist factors. The therapist brings into the therapy room his or her own personal characteristics and experiences, his or her education and training, and his or her previous experiences with clients. The therapist also contributes the facilitative conditions of the interaction, his or her ability to manage ruptures in the therapeutic alliance, and the ability to meet with the client to agree upon goals of treatment and the means by which these goals should be accomplished. Lambert and Barley (2002) noted the difficulty in conceptually discriminating among therapist variables (e.g., interpersonal style, personal attributes), facilitative conditions (e.g., empathy, warmth, positive regard for clients), and the

relationship between the therapist and client. It should be acknowledged that there is significant overlap between these variables. With this in mind, they summarized the facilitative conditions of the psychotherapy relationship that are most crucial to client outcomes. They concluded that these conditions were empathic understanding (i.e., the therapist's ability to communicate his or her awareness and accurate understanding of the client's experience), nonpossessive warmth and positive regard for the client as a person, and congruent interactions in which the therapist is perceived by the client as being authentic.

Similarly, Ackerman and Hilsenroth (2003) identified therapist attributes and techniques that are correlated with a strong therapeutic alliance. Therapist attributes they found to be associated with outcome were flexibility, experience, honesty, respectfulness, trustworthiness, confidence, interest, alertness, friendliness, warmth, and openness. Similarly, Hilsenroth and Cromer's (2007) review of therapist attitudes in initial interviews associated with a positive therapeutic alliance included understanding, competence, respect, and nonjudgment. Techniques utilized by therapists that were correlated with outcome included being reflective, supporting, noting past therapy successes, providing accurate interpretations, facilitating emotional expression, being active, and being affirming (Ackerman and Hilsenroth, 2003). These attributes and behaviors on the part of the therapist are consistent with common factors theory. Ackerman and Hilsenroth (2001; 2003) were also able to identify certain qualities and behaviors of therapists that were associated with difficulties within the alliance. These included rigidity, criticality, and inappropriate self-disclosure.

The client contributes his or her own history, mannerisms, behaviors, and personal characteristics, as well as his or her motivation and insight for doing the work of psychotherapy. The research seems particularly compelling that the types of relationships clients have experienced in their lives prior to coming into therapy strongly affects the type of relationship they will experience with their therapist, and ultimately affects the outcome they receive from psychotherapy. Psychotherapy clients who have experience with positive interpersonal relationships are also more likely to report a positive therapeutic alliance with their therapist (Marmar, Weiss, & Gaston, 1989; Kokotovic & Tracey, 1990). Similarly, clients who are comfortable with intimacy and feel as though they can depend on others are more likely to perceive the therapeutic alliance as strong (Kivlighan, Patton, & Foote, 1998), while clients with insecure attachment styles are more likely to report poor early therapeutic alliances (Ogrodniczuk, Piper, Joyce, & McCallum, 1999).

Several authors have posited that the quality of the therapeutic alliance is a function of client pre-therapy characteristics (e.g., motivation, expectations for therapy, interpersonal relationships, openness, trust), therapist personal characteristics, therapist technical behaviors, and the match between the client's needs and characteristics and the therapist's resources (Kivlighan, 1990; Al-Darmaki & Kivlighan, 1993). Indeed, it seems that there are limitless ways in which these factors may interact to result in different outcomes and qualities of relationships between the two people involved in the therapeutic relationship. Henry, Schacht, and Strupp (1986) selected four therapists and analyzed one of their cases that ended with a positive outcome and one of their cases with a negative outcome. They concluded that even within the same therapist, the

interpersonal processes that occurred between the therapist and client in the session varied considerably from one patient to the next. Consequently, even the interventions enacted by the therapist were different from one client to another and were associated with differing outcomes for the client.

Henry et al. (1990) sought to understand how dynamics in therapist-client relationships could be so strikingly different, even when the same therapist was involved. They worked under the theory of introjection, predicting that individuals treat themselves as they have been treated by significant others in the past. They hypothesized that the therapist's interpersonal style of behavior would be associated with either a reinforcement of previous negative personal interactions or would be reparative for the client in that it would be different from previous experiences. They found that the change in client's introject was associated with specific interpersonal actions of the therapist toward the client. Furthermore, they also found that the therapist's own introject was associated with the likelihood of engaging in interpersonal processes that were deleterious to the therapeutic relationships.

Based on these results, Henry and Strupp (1994) adapted the Orlinsky and Howard (1986) model of psychotherapy to incorporate interpersonal theory. As such, they developed a three-stage causal model that included both patient and therapist early parental relations, the therapeutic alliance, and global and interpersonal outcomes for the client. In this model, the client's history of interpersonal relationships and interactions is the basis for the client's introject and the ensuing cyclical maladaptive patterns causing difficulty for the client, which are also related to symptoms such as anxiety or depression. In a test of this model, Hillard, Henry, and Strupp (2000) concluded that a client's early

parental relations directly affected the psychotherapy outcome and mediated the relationship between therapy process and outcome. Interestingly, the authors also found that the therapists' own early parental relations directly effected therapy process, which has a direct effect on client outcome. They postulated that although the therapists in their study had extensive training in psychotherapy, it was not sufficient to prevent the therapists' own background of interpersonal relations from affecting their professional ability to bring about positive change for clients.

Therapeutic alliance as a mediator. Given that many of the factors that seem to promote a positive therapeutic alliance are factors that may well be conceived to be operating when feedback is given to therapists about their client's progress, it seems possible that the mechanism of change responsible for the effect of feedback on client outcomes is the therapeutic alliance. One of the important goals of psychological research generally and outcomes research specifically is to determine what factors are associated with client improvement. In empirical research, such relationships are analyzed statistically. In investigations looking at these types of relationships, a *mediator* is defined as a variable that explains the relationship between a predictor and an outcome (Baron & Kenny, 1986; Frazier, Tix, & Barron, 2004). That is, the mediator is the mechanism through which a predictor influences an outcome variable. Frazier and colleagues argued that testing mediating relationships is important in evaluating therapeutic interventions, because measuring underlying change mechanisms (i.e., mediators) as well as outcomes provides important information about which mechanisms are critical for influencing outcomes, allowing researchers to identify the effective and ineffective components of treatment. Furthermore, testing mediating relationships helps

build and test theories about causal mechanisms of change. However, in order to be of clinical significance as well as statistical significance, the proposed mediational model must also be theoretically based.

The concept of the therapeutic alliance as a mediator in relationships with client outcomes has been tested in other studies, although, to our knowledge, it has not been tested with feedback. Joyce and Piper (1998) found that clients' expectations about a therapy session predicted both the therapeutic alliance and psychotherapy outcomes. Joyce, Ogrodniczuk, Piper, and McCallum (2003) posited that the therapeutic alliance was responsible for the relationship between expectancy and outcome and tested this hypothesis in a mediational model. They found that the therapeutic alliance partially mediated the effect of client expectancy and benefit received from therapy. In fact, the mediation of the therapeutic alliance accounted for one third of the effect of expectancy on outcome.

Does Therpeutic Alliance Mediate the Feedback Effect?

It is possible that the relationship among the therapeutic alliance, feedback, and psychotherapy outcomes is also a mediational relationship. From a statistical viewpoint, the therapeutic alliance may account for all or some portion of the variance associated with outcomes in psychotherapy. From a clinical standpoint, it is possible that providing feedback to the therapist makes the therapist feel more invested in the client, the therapist then invests more energy into the relationship and the sessions, and the client then feels understood, collaborates on the tasks and goals of therapy, thereby enhancing the probability of success and building the therapeutic alliance. A strong alliance then increases the likelihood of agreement about tasks and goals of therapy between the client and therapist, which improves outcomes.

Bachelor (1991) analyzed the determinants of the therapeutic alliance that were associated with improvement in therapy. Bachelor found that the client's perception of the alliance was significantly more related to outcome than the therapist's perception of the alliance, although the therapist's view of the client as an active participant in therapy accounted for 21% of improvement. Bachelor posited that when therapists view clients as agents of their own change, therapists feel positively about the clients who are more participatory and involved. Perceiving such clients as being more collaborative and engaged in therapy likely strengthens the therapist's own commitment to the relationship and investment in the client's progress.

Aim of the Present Study

If the relationship between feedback and outcomes is mediated by the therapeutic alliance, providing feedback to both clients and therapists should then serve to strengthen each of these steps, further engaging and involving the client as the agent of change in their course of treatment, and strengthening the investment and commitment of both therapist and client, thus improving outcomes by strengthening the therapeutic alliance. Given that we know that characteristics of the client are important predictors of the therapeutic alliance, that the therapeutic alliance is predictive of psychotherapy outcome, and the report of the client's ratings of the therapeutic alliance are most predictive of outcomes, it stands to reason that interventions directly involving the client are likely to be most effective at improving client outcomes. Accordingly, Hawkins et al. (2004) argued that therapeutic interventions that included both the client and the client-therapist relationship should be effective. Indeed, the results of their study suggested that providing feedback to both clients and therapists resulted in improved outcomes for clients, regardless of whether or not they were making expected treatment progress. However, Hawkins and colleagues did not statistically test a mediational model.

The second aim for the present study was to determine whether the therapeutic alliance mediates the relationship between feedback to both therapists and clients and outcomes. Hypotheses toward the second aim were that 1) stronger therapeutic alliances would be associated with better outcomes; 2) the two measures of therapeutic alliance would be strongly correlated; 3) feedback to both participants and therapists would result in higher participant ratings of the therapeutic alliance than in the single feedback

condition, and 4) that therapeutic alliance would be found to mediate the relationship between feedback and outcomes. The proposed mediational model is shown in Figure 1.

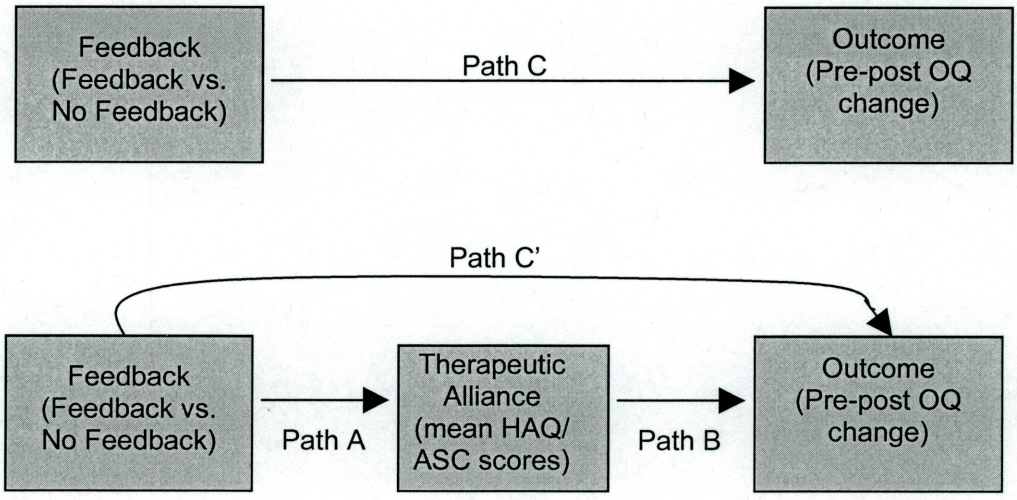

Figure 1. Proposed mediational relationship of therapeutic alliance, feedback, and outcome

Method

Subjects

Approximately two hundred fifty university counseling center clients were eligible for participation in the study. Potential subjects were eligible for participation in this study if they met the following inclusion criteria: 1) were over the age of 18; 2) were students at the University of Redlands; 3) sought services at the University of Redlands Counseling Center during the 2008-2009 school year. Potential subjects were excluded from participation if they were unable to communicate in English or if they were unable to read and respond to the questionnaires. Inclusion or exclusion in the study was not based on age (other than if they are minors), gender, pregnancy or childbearing potential, racial/ethnic origin, religious affiliation, or sexual orientation. Two hundred twenty-four (89%) of those who were eligible for participation consented to participate in the study. To be included in the full analysis, participants were required to have received at least two sessions of treatment, to have completed the outcome measure prior to a minimum of two sessions (representing the first and any subsequent session), and to have completed the online alliance measure. One hundred eighty-one participants met the criteria for inclusion of their data in the full analyses and were included in the final data sample.

The mean age of participants included in the final sample was 20.36 years (SD = 2.91). Ninety-two percent of participants were undergraduate students, while 8.8% were graduate students. This included 136 female participants (75.1%) and 45 male participants (24.9%). Additionally, 71.8% were Caucasian, 11% were Hispanic/Latino, 9.4% were Asian American, 5.5% were African-American, and 1.1% were of other ethnic backgrounds or of mixed ethnicities. Eighty-five percent of subjects were heterosexual,

while 7.7% identified as being gay or lesbian, 2.2% identified as bisexual, and 2.7% were identified as being transgendered or of another sexual orientation. Approximately 10% of participants were mandated to attend therapy by school officials. Although structured diagnostic interviews were not conducted, the most common diagnoses of record were mood (33.7%), anxiety disorders (18.8%), and adjustment disorders (14.4%). Average initial global assessment of functioning score was 64 (SD = 8.59). It is important to note that the reliability of diagnostic information is unknown and is provided only for descriptive information about the subject sample. The most common focus of treatment identified by participants at the time they presented for therapy was relational (42.5%), anxiety or stress-related (24.3%), or depression (15%). Approximately 70% of subjects had previously received psychotherapy services, and 37% had previously received treatment at the university counseling center in which the study was conducted. Only 18% were on psychotropic medications at the time the study began, and 22% took psychotropic medications at any time during the study.

Therapists

One licensed clinical psychologist, one licensed marriage and family therapist, and three intern therapists (doctoral students in clinical psychology) provided treatments in the study. Because a primary aim of the study was to reflect the context of psychotherapeutic practice in typical clinical settings, which is consistent with effectiveness rather than efficacy methodology, there was no attempt to manipulate clinicians' delivery of psychotherapeutic services. Clients were assigned to therapists non-randomly, using therapist availability and clinical factors (e.g., female clients desiring a female therapist

for treatment following sexual assault) were accommodated with respect to standard clinic practice. However, clients were randomly assigned to treatment conditions. Therapist effects were monitored and would have been controlled for statistically. However, post-hoc analyses revealed no significant therapist effects on any of the outcome variables.

Measures

Measure of distress. Psychological dysfunction was assessed using the Outcome Questionnaire (OQ-45; Lambert et al., 1996). The OQ-45 contains 45 items rated on a 5-point Likert scale (0=never, 1=rarely, 2=sometimes, 3=frequently, 4=almost always) and is a self-report instrument designed to measure client progress repeatedly (before each session) throughout the course of therapy. Client progress is monitored on the OQ-45 along three primary dimensions: (a) subjective discomfort, (b) interpersonal relationships, and (c) social role performance. As such, items on this questionnaire measure symptoms and problems frequently experienced during psychological disorders as well as internal and external characteristics that influence an individual's quality of life. The range of scores possible on the OQ-45 is 0-180, with higher scores reflecting more severe distress. The OQ-45 total score, a global assessment of client functioning was employed in the current study as the measure of distress.

A body of literature on the measure has demonstrated the psychometric properties of the OQ-45. Lambert, Hansen, et al. (1996) found an internal consistency of 0.93, and Lambert, Bulingame, et al. (1996) demonstrated a 3-week test-retest reliability of .84. Concurrent validity of the OQ-45 has been demonstration with positive correlations with

the Symptom Checklist-90-Revised (r = .78), the Beck Depression Inventory (r = .80), the State-Trait Anxiety Inventory (r State Anxiety = .64, r Trait Anxiety = .80), the Inventory of Interpersonal Problems (r = .53) and Social Adjustment Scale (r = .65). The development of the norms for the OQ-45 was based on data collected nationally (Lambert, Burlingame, et al., 1996; Lambert, Hansen et al., 1996; Umphress, Lambert, Smart, Barlow, & Clouse, 1997).

For the purposes of this study, baseline distress levels were operationally defined by the OQ-45 score from the initial session attended. Post-treatment distress was operationally defined by the OQ-45 score from the last therapy session attended. This likely underestimates the actual post-treatment change score, because the last OQ score was obtained just prior to the last therapy session and does not account for change in symptoms after this session. Therapy progress was determined by the change in OQ scores from the baseline to post-treatment.

Clinically significant change was described by Jacobson & Truax (1991) as being the point in time in which a client moves from being dysfunctional to being functional, based on normative comparisons, and movement so large that it is not likely to be the result of measurement error. Using formulas developed by Jacobson and Truax, Lambert, Hansen, et al. (1996) analyzed clinical and normative data for the OQ-45 to provide cutoff scores for the Reliable Change Index and clinically significant change. Clients who change in a positive or negative direction by at least 14 points are regarded as having made reliable change. This degree of change exceeds measurement error based on the reliability of the OQ-45. The second element requires movement from a score typical of a dysfunctional population to a score typical of a functional population

(Kendall, Marrs-Garcia, Nath, & Sheldrick, 1999). The cutoff on the OQ-45 for demarcating the point at which the client's score is more likely to come from the dysfunctional population than a functional population has been empirically determined to be 64. When a person's score falls at or below 63 on the OQ-45, the client's functioning is similar to a non-client's level of functioning at that point in time and is the second indicator of clinically significant change. Support for the validity of the OQ-45's reliable change and clinical significance cutoff scores has been reported by Lunnen and Ogles (1998) and Beckstead et al. (2001). The achievement of clinical significance or reliable improvement (i.e., reliable significance with change in the direction of lowered scores) and the number of sessions it takes for a client to reach clinical significance and/or reliable improvement were utilized as secondary outcome measures in this study.

Higher functioning clients, such as those seen in university counseling centers, are often found to never report distress levels on the OQ-45 scores that would put them in the "dysfunctional" category (i.e., lower than would be expected of someone in the dysfunctional category). Because these clients are not ever scored as being in the dysfunctional range, they cannot meet the standard for clinical significance. However, if they met the standard for reliable change (in the direction of a reduction of distress scores), they are considered "improved." Clients who began therapy in the dysfunctional range or scored within the dysfunctional range at any point during treatment, but who showed reliable improvement and fell below the functional/dysfunctional threshold were considered "recovered." Those who showed reliable improvement, but whose OQ-45 scores at the conclusion of the study remained above the cutoff score were considered "improved." Although they do not meet the standard for clinical significance, such

clients (as well as those who meet the standard for clinical significance with a reduction in OQ scores) are considered to have positive outcomes from psychotherapy. Clients whose scores reliably worsened and fell above the cutoff score are considered to have "deteriorated." Clients who make no reliable improvement or deterioration, based on their OQ scores, will be described as having made "no change" (Lambert, Hansen et al., 1996; Beckstead et al., 2003; Lunnen & Ogles, 1998). Treatment outcomes considered positive were those in which participants recovered or improved, while participants who deteriorated or achieved no change in treatment were considered to have a negative treatment outcome.

Therapist and client feedback. One of the goals of this study was to investigate the effectiveness of immediate client feedback on psychotherapy outcomes. Kluger & DeNisi (1996) showed that depictions of the amount of change that had occurred since the previous assessment of outcome was related to significant improvements in ultimate outcomes for participants. In their study, written and graphic outcome results were shown to increase the effects of feedback, whereas verbal feedback was shown to reduce the effects of feedback. Therefore, the delivery of outcome feedback was through computer-generated graphs and written feedback, using the OQ-Analyst software (Lambert, Hansen, et al., 1996).

Prior to the current study, University of Redlands Student Counseling Center administrators were already convinced by the body of research (in which they had not previously been directly involved in producing) regarding the benefit of feedback to therapists as a part of routine clinical practice. As such, standard practice was that clients routinely completed the OQ-45 on portable data assistants prior to their therapy session,

and immediate feedback about their progress as generated by the OQ-Analyst software was provided to therapists just prior to the therapy session. However, clients were provided with no printed information about their OQ-45 score.

In the current study, therapists of all clients who opted to participate in the study continued to receive immediate printed feedback about their clients' progress, as measured by the OQ-45. Participants randomized to the feedback condition were also provided with a client feedback report immediately before their therapy session, while those who were randomized to the no-feedback condition continued to receive no written information about their progress. Thus, at a minimum, participants in the study were provided with the same standard treatment routinely provided to all clients in the student counseling center. Half of the study participants were given additional information about their progress.

The feedback given to therapists and those participants in the client feedback condition included a graph depicting the client's previous scores on the OQ-45 and a brief written message describing the client's progress. Therapist feedback also included a brief message noting the rate at which the client was making progress (e.g., not making the expected level of progress, progressing as expected), whether the client is at risk for a negative treatment outcome, and whether the client appears to be responding to the current treatment strategy or whether a new course of treatment action should be considered. The feedback provided by the OQ-Analyst software to therapists and clients is similar but not identical. An example of the feedback messages that are provided to therapists and clients may be found in Appendices A and B. The format of the client version is visually similar to that of the therapist version and includes the same graph of

OQ score history. However, the critical items and the comparison of client OQ scores with other populations that are shown in the therapist report are omitted on the client version. In addition, the messages provided to clients are worded so as to contain more positive messages. That is, for clients who are at risk for treatment failure, although the message indicates that they are NOT, it also informs clients that a positive outcome is still possible and makes suggestions for talking to the therapist about their concerns. Below are examples of the feedback messages for different scenarios that would be included as client feedback:

> For a client in session #2-4 who is responding to treatment as predicted:
> *"Please note that the information presented below is based on your responses to the questionnaire that you complete prior to each therapy session. It appears that your level of improvement is similar to the majority of patients who are receiving treatment. Although your current level of progress suggests that you are on course for a positive outcome, we* ***encourage*** *you to continue working hard so that you may receive maximum benefit from treatment. You may also want to consider discussing with your therapist the aspects of treatment that have been most and least helpful, in order to experience the greatest benefit from your treatment."* (Lambert et al., 2004).

> For a client in session #2-4 who is not responding to treatment as predicted:
> "*Please note that the following information is based on your responses to the questionnaire that you have completed prior to each therapy session. It appears that you have not experienced a reduced level of distress. Because you may not be experiencing the expected rate of progress, it is possible that you have even considered terminating treatment, believing that therapy may not be helpful for you. Although you have yet to experience much relief from therapy, it is still early in treatment and there is the potential for future improvement. However, we* ***urge*** *you to openly discuss any concerns that you may be having about therapy with your therapist because there are strategies that can be used to help you receive the most out of your therapy."* (Lambert et al., 2004).

Despite the meaning conveyed and recommendations provided in these messages, no attempt was made to govern the actions of participating therapists. Therapists alone determined the extent to which they used the information contained in these messages.

Measures of therapeutic alliance. The ASC; Lambert, Bailey, Kimball, Shimokawa, Harmon, & Slade, 2008) is a 40-item self-report measure that contains items aimed at assessing problems with the therapeutic alliance, motivation, social supports, and stressful life events. Each of the constructs is measured by using a five-point Likert scale. Items are scored within subscales so that higher scores indicate more positive (less worrisome) attributes (e.g., a stronger alliance, better social support, fewer negative life events). Subscale scores are obtained for each of the constructs by summing the items from that subscale. No total score for the ASC is calculated. The primary construct of interest for the purpose of this study is the therapeutic alliance. The therapeutic alliance subscale contains 11 items, summing to a score between 11 and 55, with a high score indicating a more positive alliance after three items are reverse scored. A score at or below 42 has been determined to indicate the need to further explore the alliance and take steps for improving it.

The ASC is a relatively new instrument that has recently been developed for use with the OQ Analyst software and as the assessment tool within their CSTs to guide therapist judgments about appropriate courses of action for clients at risk for negative outcomes. Its purpose is generally to inform therapists as to constructs that should be explored with clients to avoid poor outcomes. The items utilized as the initial measures for the CSTs in the Whipple et al. (2003) study were the Helping Alliance Questionnaire-Revised (HAQ-II), the Stages of Change Scale, and the Multidimensional Scale of Perceived Social Support, each of which have been demonstrated to be psychometrically sound with good reliability. This self-report measure evolved into what is now the ASC, and the questions included in the ASC were drawn from and adapted from those same

measures. However, the focus of the items on the ASC is on identifying problems rather than on the positive qualities of those constructs, because of the ASC's typical use in problem-solving for clients who are not making expected progress in therapy. As yet, there has been no research on the reliability and validity of the ASC, even though the items contained in the ASC are drawn from measures that have been repeatedly validated, or on its ability to discriminate between groups for research purposes. Therefore, the therapeutic alliance subscale of the ASC will be given as one measure of alliance and will be evaluated for its convergent validity with the HAQ-II as well as for its ability to discriminate between groups.

The HAQ-II, Patient Version; Luborsky, Barber, Siqueland, Johnson, Najavits, Frank, & Daley, 1996) is a 19-item inventory that measures the alliance between therapists and their clients, or the degree of a positive, helping relationship. The items require responses from 1 (strongly disagree) to 6 (strongly agree). Five questions are negatively worded or related to negative interactions, and these items will be reverse-coded. A total alliance score is computed by summing the responses and scores can range from 19-114, with higher scores indicative of a more positive alliance. A cut score of 86 has been suggested as an indicator as to whether the alliance is strong or weak, with scores below 86 indicating a weak alliance.

The HAQ-II has been shown to have adequate internal consistency, with correlations ranging from .90 to .93, and adequate test-retest reliability, with correlations ranging from .55 to .79 (Luborsky et al., 1996). The HAQ-II's convergent validity with the California Psychotherapy Alliance Scale has been demonstrated in correlations ranging from .59 to .80. A study of the measure's divergent validity revealed that the

instrument is not correlated with demographic variable of age, race, gender, marital status, or employment; furthermore it was not correlated with initial measure of global assessment of function, psychiatric severity, drug use, or level of distress.

Data for the ASC and HAQ-II were collected online, via a research collection site, surveymonkey.com. Previous research has demonstrated that the strength of the therapeutic alliance tends to be established within the earliest sessions of psychotherapy, with little change over the course of therapy (Luborsky, 1976; Eaton et al., 1988), and thus, it seems appropriate that measuring client ratings of the alliance after the second and fifth sessions of therapy should adequately represent the alliance as experienced by the client. Client ratings of the alliance have been demonstrated to be more predictive of outcomes than therapist ratings of the alliance (Bachelor, 1991) and were employed in the current study, rather than therapist ratings. The measure of therapeutic alliance was operationally defined by the ASC alliance subscale and HAQ-II scores.

Demographic and clinical data. Basic demographic (e.g., gender, ethnicity) and clinical data (e.g., number of sessions attended, incidence of cancellations and "no shows", diagnoses, reason for termination, presenting problem, beginning and ending Global Assessment of Functioning (GAF) score were obtained from clinic records. Client identifying information was removed from these records and replaced with subject identification codes.

Design and Procedures

As part of the clinic's intake procedures, eligible participants were invited to participate in a research study in which they would be asked to provide feedback about

their feelings about the helpfulness of the therapist and of the therapy sessions and in which there is a possibility they would also receive regular updates about their treatment progress. They were offered a chance to win one of three gift cards as inducement for participation. A copy of the Informed Consent form may be found in Appendix H.

Participants who consented to participate were asked to provide their email address to which the link for the alliance measure could be sent. Participants were randomly assigned to either the client feedback or no feedback conditions. Client charts were marked by the clinic secretary to indicate the client's status with respect to the study. After informed consent was obtained, all participants completed the OQ-45 on the personal data assistant (PDA). OQ-45 data were immediately scored using the OQ-Analyst software and printed feedback about the client's levels of distress was provided to the therapist immediately before the session. Clients were assessed and/or treated by their clinician as per normal clinic policy. Before the second and each subsequent therapy session, the participant completed the OQ-45 on the personal data assistant, the data was scored by the computer software, and the feedback data was generated by the software and immediately provided to the therapist prior to the beginning of the therapy session. Because of the immediate nature of the feedback, if a client was signaled by the OQ-Analyst system as being at risk for treatment failure, his or her therapist learned that the client was not responding just before their session. This allowed therapists to immediately assess what changes to the treatment should be made and to address those with the client in the same session at which the data was obtained. Client outcome data, based on the OQ-45 data, was provided to therapists for all participants, regardless of the client's treatment condition, in keeping with standard clinic practice.

Feedback was provided to study participants according to the treatment condition assignment. Before the second and subsequent therapy sessions, therapists of clients in the feedback condition were also provided with the client's outcome feedback data. Therapists of clients in the feedback condition personally handed the feedback information to clients and asked that they look at it. It was suggested and encouraged that therapists of participants in the feedback condition introduce the feedback information to the client and incorporate the feedback into treatment. The feedback provided to NOT clients also recommended that clients collaborate with their therapist to avoid a negative treatment outcome. Although verbal introduction of the feedback, an opportunity for discussion of treatment progress, and incorporation of the outcomes information into the therapy session was desirable and encouraged, the frequency or content of such interactions was not be measured. Because one of the goals of patient-focused research is to design interventions that may be easily employed in everyday clinical practice, no attempt to standardize or manualize the structure of the therapy sessions was made. Whether or not, or to what extent, the feedback was discussed or incorporated into the therapy session was left to the discretion of the therapist, in keeping with the goal of the study to implement such feedback in as naturalistic an environment as possible. No computer-generated outcome data was provided to those participants in the single feedback condition.

After attending their second psychotherapy session, participants were emailed a link to the online survey hosted on the research data collection site. Participants logged in to the site using their unique subject identification code, which was provided to them in the email with the link to the site. This subject identification number was the only

identifying information associated with the client's responses to the questionnaire online. The only record linking the client's subject identification code with other identifying information was maintained in a locked file to which only the primary investigator has access. Participants' subject identification codes were also used for purposes of choosing the winners of the incentive. The survey collection site recorded participants' responses to the ASC and HAQ-II, as well as a manipulation check.

The original intent of the study was to utilize an early and a later measure of the therapeutic alliance. Although a second administration of the alliance measure was attempted after the fifth session, the original intent to utilize the measures as an "early" and a "later" measure of the therapeutic alliance ultimately proved to be difficult, as there was a low response rate to the initial request to respond to the survey immediately after participants' second session. Instead, it was decided that it was more important to gain at least one measure of the alliance from as many participants as possible. As such, email reminders were sent weekly to those who had not yet completed the online survey. The point in time at which participants responded to the alliance measure was also noted.

Prior to the study, it was decided that if a participant in the no-feedback condition voluntarily inquired about the outcome measure he or she completed and desired the data, it was decided that he or she would be withdrawn from the study and feedback would be provided. This plan was determined in order to protect the therapeutic alliance, as denial of such information would be likely damaging to the relationship between the client and therapist and could jeopardize the client's treatment progress and eventual outcome. However, this scenario did not actually occur during the study.

Results

Pretreatment Effects

Before testing the effectiveness of the feedback intervention, preliminary analyses were completed to determine whether there were differences between the treatment groups at pretreatment (i.e., before the first session). One-way analyses of variance revealed no significant differences between the single and double feedback groups on the continuous variables of age (F (1, 175) = 1.61, $p.$> .05) and initial GAF score (F (1, 163) = 0.38, $p.$ > .05). Chi square analyses performed on categorical variables indicated that the single and double feedback groups had similar characteristics with respect to gender (χ^2 (1, N = 181) = 0.02, $p.$ > .05), ethnicity (χ^2 (4, N = 179) = 5.79, $p.$ > .05), sexual orientation (χ^2 (5, N = 156) = 7.86, $p.$ > .05) whether or not the client had previously received psychotherapy (χ^2 (1, N = 179) = 0.08, $p.$ > .05), whether or not the participant was mandated for treatment (χ^2 (1, N = 176) = 0.61, $p.$ > .05), whether or not the participant was on psychotropic medications prior to beginning the study (χ^2 (1, N = 175) = 1.23, $p.$ > .05), Diagnostic and Statistical Manual-Fourth Edition, Text Revision (DSM-IV-TR) Axis I diagnosis (χ^2 (11, N = 171) = 16.50, $p.$ > .05), the presence of an Axis II diagnosis (χ^2 (3, N = 164) = 1.01, $p.$ > .05), the primary reason identified by clients as prompting them to seek services (χ^2 (8, N = 175) = 13.33, $p.$ > .05), alcohol use (χ^2 (2, N = 163) = 2.29, $p.$ > .05), drug use (χ^2 (2, N = 164) = 4.27, $p.$ > .05), and therapist providing the treatment (χ^2 (4, N = 174) = 5.21, $p.$ >.05).

A one-way analysis of variance (ANOVA) conducted to test for statistically significant mean OQ-45 score at pretreatment for each treatment group revealed no significant between-group differences, F (1, 180) = 0.47, $p.$ > 0.5. Accordingly, the

single and double feedback conditions had statistically similar proportions of individuals who began the study with OQ-45 scores placing them in the dysfunctional and functional ranges, χ^2 (1, N = 181) = 0.29, p. < .05. Participants in the single- and double-feedback conditions began the study with similar GAF ratings, F (1,163) = 0.38, $p.$ > .05. These results indicate that randomization was effective in creating groups with similar levels of initial disturbance.

In the present study, participants who were identified at some point during the study by the OQ-Analyst system as being at risk for a negative treatment outcome had similar levels of baseline distress, F (1,180) = 0.41, $p.$ > .05 as those who made expected progress in treatment. This finding replicates that of Hawkins et al. (2004) but differs from that of Harmon et al. (2007), who found that those who were ultimately identified as NOT began therapy with higher levels of symptomatology as those who progressed through therapy at the expected rate.

Pre-Post Treatment Effects

The first hypothesis was that, overall, participants would exhibit significant declines in distress, relative to their baseline levels. A repeated measures t-test was conducted to assess overall change in levels of distress over the course of psychotherapy. Disregarding treatment condition, counseling center students who participated in the study improved with an average change of 6.84 points (11%) on the OQ-45 (SD = 19.59), t (180) = 4.70, p. < .05, d = 0.30. Of note, participants who began the study in the functional range did not see significant improvement in levels of distress over the course of treatment, t (77) = -0.57, $p.$ > .05. Participants who began the study in the

dysfunctional range saw a 12.83 point (18%) reduction in OQ-45 scores over the course of psychotherapy, t (102) = 6.59, p. < .05, d = 0.73. Thus, the first hypothesis was supported.

Of those who began treatment in the dysfunctional range, 41% ended treatment having made clinically significant improvement (i.e., moved from the dysfunctional to functional range). An additional 25% made reliable improvement (i.e., at least a 14 point reduction in OQ-45 scores) but did not meet the criteria for clinically significant change. While 71% of participants made progress at the expected rate, 24% of participants were identified by the OQ Analyst software as being at risk for a negative treatment outcome. There were no significant effects of gender, ethnicity, sexual orientation, previous experience with therapy, Axis I diagnosis, or the presence of an Axis II diagnosis on any of the outcome measures.

Effect of Feedback on Change in Distress

The second hypothesis was that participants who received feedback about their progress in therapy (double feedback condition) would have better outcomes than those who did not receive feedback about their progress (single feedback condition). In order to make comparisons with the Hawkins et al. (2004) and Harmon et al. (2007) studies, the effects of treatment conditions in individuals identified as being at risk for treatment failure i.e., NOT) and those who were identified as being OT for a positive outcome were also investigated.

Omnibus findings. To protect against the risk that significant differences on later analyses might be due to conducting multiple tests on correlated measures, an

omnibus 2 (Feedback: Single vs. Double) x 2 (Progress Status: OT vs. NOT) analysis of covariance (ANCOVA) with pretreatment OQ-45 score as the covariate was performed. The outcome measure was the change score calculated from the difference between the pre- and post-OQ-45 total score. Results indicated significant effects of feedback, F (4, 176) = 22.95, $p.$ < .05 and progress status, F (4, 176) = 39.06, $p.$ < .05 on pre-post change scores. The interaction of feedback and progress status on pre-post change scores was also significant, F (4, 176) = 5.14, $p.$ < .05.

Main effect of feedback. To investigate the main effect of feedback to therapists only versus feedback to both clients and therapists, an ANCOVA in which initial OQ-45 score was employed as a covariate revealed a significant effect of feedback condition, F (1, 178) = 16.10, $p.$ < .05, and yielded a medium effect (Cohen, 1988) size, d = 0.5. Participants in the double feedback condition experienced an average of 9.88 points greater reduction in OQ-45 scores than did participants in the single feedback condition.

Main effect of progress status. A separate ANCOVA to determine whether there were differences in pre-post change scores for participants identified as being at risk for a treatment failure, covarying initial OQ-45 score, was also significant, F (1, 178) = 37.61, $p.$ < .05, and yielded a large effect size, d = 0.9. On average, participants who were identified by the software as making progress as expected throughout the treatment ended the study with a 10.87 point reduction in OQ-45 score, while those identified as being at risk for a negative outcome ended the study with a 3.96 point increase in distress scores. Thus, the second hypothesis was supported; double feedback was associated with significantly better outcomes than single feedback.

Interaction of feedback and progress status. Because there was a significant interaction between treatment condition and progress status on pre-post change scores, separate ANCOVAs were conducted for those who were identified as making expected progress in therapy and those who were identified as NOT to determine whether the benefit of double feedback existed for both OT and NOT subjects. Initial OQ-45 scores were employed as covariates in all contrasts. Results indicated that there was a significant effect of feedback for both OT, F (1, 128) = 7.37, $p. < .05$, and NOT participants, F (1,50) = 12.19, $p. < .05$. This represented a large effect ($d = 0.9$) for NOT subjects and a small effect ($d = 0.37$) for OT subjects. When feedback about the client's progress was provided only to the therapist, participants who were not making expected progress ended the study with an average 11.46 increase in OQ-45 score, whereas those participants who were provided feedback along with their therapist had a 4.44 point reduction in distress. Participants in the single feedback condition experienced an average of an 8.10 decrease in OQ-45 scores, while double feedback condition, OT participants demonstrated a 13.47 OQ-point reduction during treatment.

Analysis of treatment outcome. The Jacobson & Truax (1991) definitions for qualitative descriptions of client outcomes were utilized in the classification of participant outcomes. Participants who showed reliable improvement and whose progress was clinically significant were classified as "recovered." Those who made reliable improvement were considered "improved." Participants whose distress scores on the OQ-45 increased reliably were classified as "deteriorated." Those who did not meet the criteria for reliable change were considered to have made "no change." The effect of treatment condition on outcome descriptor was analyzed, and the results are summarized

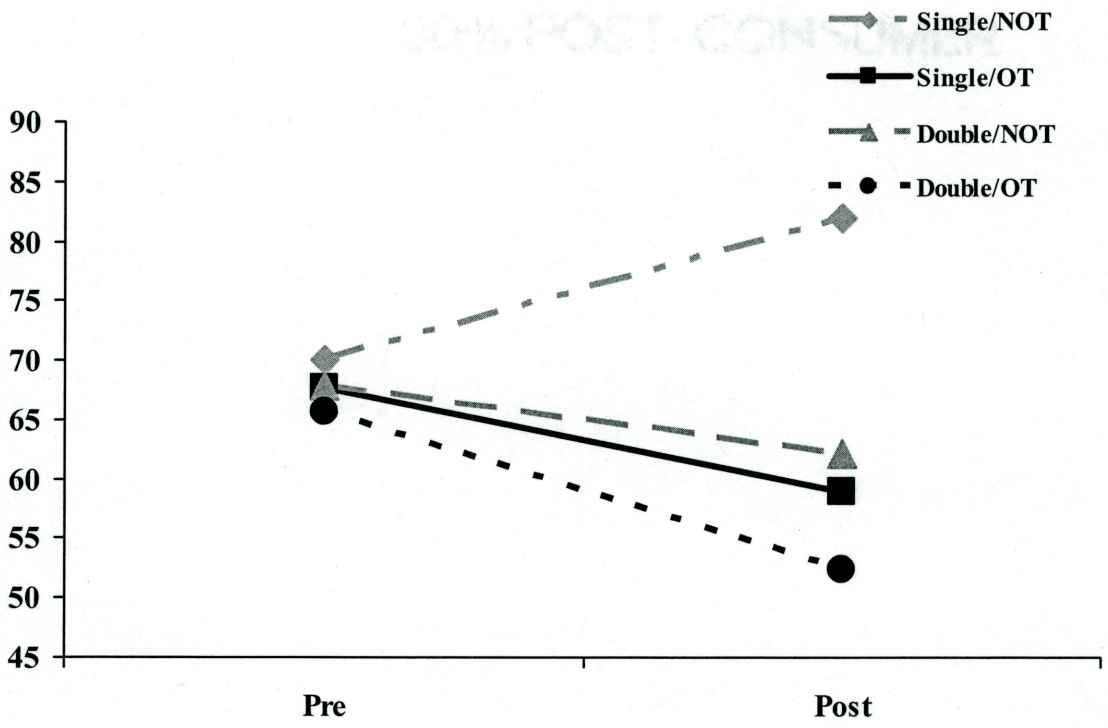

Figure 2. Adjusted pre- and post-treatment mean scores, as a function of feedback condition and progress status

in Table 1. There was a significant difference between feedback conditions with respect to treatment outcome descriptors, (χ^2 (3, N = 181) = 22.42, $p. < .05$). Overall, 39.2% of participants ended the study as "improved" or "recovered."

Participants in the double feedback condition were more than twice as likely to making clinically significant and reliable change than were those in the single feedback condition (54% vs. 24%; χ^2 (1, N = 181) = 16.41, $p. < .05$). Although only 11% of the total sample reliably worsened during treatment, feedback to both therapists and participants significantly reduced the deterioration rate. That is, only 5.5% of clients in the double feedback condition ended treatment with a negative treatment outcome,

whereas 15.6% of clients in the single feedback condition deteriorated in treatment (χ^2 (1, N = 181) = 4.88, $p.$ < .05). Among those identified as being at risk for a treatment failure, there was a significant effect of feedback condition. Although participants in the single and double feedback conditions were equally as likely to be identified as being NOT, 43% of participants in the single feedback condition ultimately ended therapy having reliably worsened, whereas only 16% of those identified as being NOT who received feedback about their treatment progress ended the study as having deteriorated, (χ^2 (1, N = 53) = 4.52, $p.$ < .05). Table 1 shows the number and percentage of participants whose progress in treatment met criteria for clinical significance and reliable change and resulting in the various treatment outcomes.

Of the total sample, 61.3% of participants had outcomes that were clinically significant (i.e., change in OQ-45 score moved from the dysfunctional to functional range). Those who were making expected progress in therapy took an average of 2.64 sessions to reach clinical significance, whereas those who were NOT for a positive outcome took an average of 5.9 sessions to move from the dysfunctional to functional range, F (1, 77) = 21.15, $p.$ < .05, which was a large effect, d = 1.10. Progress status was a significant predictor of likelihood of reaching clinical significance, F (1,180) = 8.41, $p.$ < .05. Reliable improvement was made by 37.6% of the participants in the study. Of those participants who achieved reliable change, those who made expected progress in treatment did so in significantly fewer sessions, (2.43 sessions vs. 5.63 sessions), F (1, 67) = 19.22, $p.$ < .05, which was a large effect size, d = 1.2.

Table 1

Percent of participants meeting recovered, improved, no change, or deteriorated criteria on the OQ-45 at final outcome

	Single Feedback		Double Feedback		Total	
	(n = 90)		(n = 91)		(n = 181)	
Outcome Classification	*n*	%	*n*	%	*n*	%
Deteriorated	14	15.6	6	6.6	20	11.0
No change	54	60.0	41	45.1	95	52.5
Improved	11	12.2	10	11.0	21	11.6
Recovered	11	12.2	34	37.8	45	24.9

Effect of feedback on sessions attended, clinical significance, and reliable change. To investigate the effects of feedback and progress status on the secondary outcome measures of number of sessions attended, likelihood of achieving clinical significance, likelihood of achieving reliable improvement, time to clinical significance, and time to reliable change, a 2 (Feedback: Single vs. Double) x 2 (Progress Status: OT vs. NOT) multivariate analysis of covariance (MANCOVA) was performed, in which initial OQ-45 score was held as the covariate and the aforementioned variables were entered as dependent variables. This analysis revealed a significant effect of progress status, F (6, 35) = 4.70, $p.$ < .05. The main effect of feedback condition, F (6,35) = 0.30, $p.$ > .05, and the interaction of feedback and progress status, F (6, 35) = 0.96, $p.$ > .05, were not significant. There were significant main effects of progress status on the number of sessions attended, F (1,40) = 8.87, $p.$ < .05, likelihood of achieving reliable

improvement of symptoms, F (1, 40) = 6.26, $p.$ < .05, time to clinical significance, F (1, 40) = 26.17, $p.$ < .05, and time to reliable change, F (1, 40) = 19.90, $p.$ < .05.

Post-hoc analyses revealed that participants who were identified as NOT spent a significantly longer amount of time in treatment (M = 9.92, SD = 5.11) than did those who made expected progress in treatment (M = 5.68, SD = 4.13), F (1, 178) = 33.81, $p.$ < .05, which was a large effect size (d = 1.0). Participants who were identified by the software as making expected progress in therapy and who ultimately moved from the dysfunctional to functional range did so in a significantly shorter period of time than did those who were identified as being at risk for a negative treatment outcome, F (1,75) = 28.43, $p.$ < .05, which was a very large effect, d = 1.13.

Prediction Model

Based on previous research, the third hypothesis was that a model of pre-treatment OQ-45 score, feedback condition, and progress status would significantly predict pre-post change score, as well as the secondary outcomes measures of number of sessions attended, likelihood of achieving clinical significance, likelihood of achieving reliable improvement, time to clinical significance, and time to reliable change.

Initial OQ-45 score, feedback condition, and signal status were each found to be significant predictors of OQ-45 pre-post change score. Multiple regression analysis revealed that an overall model of three predictors (initial OQ-45 score, feedback, and progress status) did significantly predict pre-post change score, R^2 = 0.41, R^2_{adj} = 0.40, F (3, 177) = 41.54, $p.$ <.05. This model accounted for 41.3% of the variance in therapy progress.

This model was found to significantly predict and accounted for 17% of the variance in the number of sessions attended, $R^2 = 0.17$, $R^2_{adj} = 0.16$, $F\ (3, 177) = 12.13$, $p. <.05$, 19% of the variance in the likelihood of achieving reliable improvement, $R^2 = 0.19$, $R^2_{adj} = 0.18$, $F\ (3, 177) = 13.78$, $p. <.05$, 6% of the variance in the likelihood of achieving clinical significance, $R^2 = 0.06$, $R^2_{adj} = 0.04$, $F\ (3, 177) = 3.57$, $p. <.05$, 30% of the variance in time to achieving clinical significance, $R^2 = 0.30$, $R^2_{adj} = 0.27$, $F\ (3, 77) = 10.60$, $p. <.05$, and 28% of the variance in time to achieve reliable improvement, $R^2 = 0.28$, $R^2_{adj} = 0.25$, $F\ (3, 67) = 8.32$, $p. <.05$

Effect of Therapeutic Alliance on Outcome

At the time participants completed the alliance measures online, they had attended an average of 3.20 sessions (SD = 1.68). Although not significantly correlated with any of the alliance measures, the number of sessions attended by participants at the time they completed the outcome measure was controlled for in each of the following analyses. The fourth hypothesis, which was that stronger therapeutic alliances would be associated with better outcomes, was not supported. Neither the HAQ-II Total Score ($r = -0.02$) or the ASQ Alliance subscale score ($r = -0.01$) were significantly correlated with pre-post change score. The HAQ-II total score and ASQ Alliance subscale score were not found to be significant predictors of pre-post change score, $R^2 = <0.01$, $R^2_{adj} = -0.01$, $F\ (2, 178) = 0.09$, $p. >.05$.

Convergent Validity of Measures of Alliance

The fifth hypothesis was that the HAQ-II Total Score and ASC Alliance subscale score would be correlated, demonstrating convergent validity for the ASC alliance subscale. Results revealed a large and significant correlation between the two measures of therapeutic alliance, $r = 0.65, p. < .05$. The correlation between the two measures was stronger for NOT participants, $r = 0.76, p. < .05$, than for those making expected progress in therapy, $r = 0.61, p. < .05$. Thus, the hypothesis that ASC Alliance subscale appears to have good convergent validity with the HAQ-II was supported by the data.

Relationship Between Therapeutic Alliance and Feedback

The sixth hypothesis was that if feedback to clients and therapists strengthens the therapeutic alliance over and above the effect of feedback to therapists alone, clients in the feedback condition would report higher alliance scores. A multivariate analysis of variance (MANOVA) performed to determine whether there was a significant effect of feedback on HAQ-II Total score and ASQ Alliance subscale score did not support the hypothesis. Results of this analysis revealed no significant effect of feedback on therapeutic alliance, $F\,(2, 178) = 1.46, p. > .05$.

The final hypothesis was that therapeutic alliance would mediate the relationship between feedback and outcomes. The proposed meditational relationship of therapeutic alliance, feedback, and outcome is shown in Figure 1. Test of the mediation hypothesis was done in three steps. First, the pre-post OQ change score was regressed on feedback condition (Path C). Regression analysis revealed that provision of feedback did significantly predict pre-post change score, $R^2 = 0.05$, $R^2_{adj} = 0.05$, $F\,(1, 179) = 10.04, p.$

<.05. Next, the mean HAQ-II Total Score and ASC Alliance score were separately regressed on feedback to establish Path A in the meditational chain. Feedback did not significantly predict either HAQ-II Total Score, $R^2 = 0.01$, $R^2_{adj} = 0.01$, $F(1, 179) = 2.53$, $p. > .05$, or ASQ Alliance subscale score, $R^2 = 0.002$, $R^2_{adj} = -0.004$, $F(1, 179) = 0.31$, $p. > .05$. In the third step, the pre-post OQ change score was regressed on feedback, with HAQ-II Total Score and ASQ Alliance subscale score held constant. This was done to provide a test of whether the mediator (therapeutic alliance) was related to the outcome (pre-post OQ change score) in Path B, as well as an estimate of the relation between the predictor and outcome, controlling for the mediator (Path C'). Therapeutic alliance was not a significant predictor of outcome, $R^2 = 0.001$, $R^2_{adj} = -0.010$, $F(2, 178) = 0.09$, $p. > .05$. The model of feedback condition, HAQ-II Total Score, and ASQ Alliance did significantly predict pre-post change score, when alliance was controlled, $R^2 = 0.05$, $R^2_{adj} = 0.04$, $F(1, 177) = 3.33$, $p. < .05$. As there was no difference in the strength of the relationship between feedback and outcome when therapeutic alliance was in the regression equation and when it was not in the equation, the proposed meditation of therapeutic alliance on the relationship between feedback and outcomes was not supported.

Mediational Model

The final hypothesis was that therapeutic alliance would mediate the relationship between feedback and outcomes. The proposed meditational relationship of therapeutic alliance, feedback, and outcome is shown in Figure 1. Test of the mediation hypothesis was done in three steps. First, the pre-post OQ change score was regressed on feedback

condition (Path C). Regression analysis revealed that provision of feedback did significantly predict pre-post change score, $R^2 = 0.05$, $R^2_{adj} = 0.05$, $F(1, 179) = 10.04$, $p. <.05$. Next, the mean HAQ-II Total Score and ASC Alliance score were separately regressed on feedback to establish Path A in the meditational chain. Feedback did not significantly predict either HAQ-II Total Score, $R^2 = 0.01$, $R^2_{adj} = 0.01$, $F(1, 179) = 2.53$, $p. >.05$, or ASQ Alliance subscale score, $R^2 = 0.002$, $R^2_{adj} = -0.004$, $F(1, 179) = 0.31$, $p. >.05$. In the third step, the pre-post OQ change score was regressed on feedback, with HAQ-II Total Score and ASQ Alliance subscale score held constant. This was done to provide a test of whether the mediator (therapeutic alliance) was related to the outcome (pre-post OQ change score) in Path B, as well as an estimate of the relation between the predictor and outcome, controlling for the mediator (Path C'). Therapeutic alliance was not a significant predictor of outcome, $R^2 = 0.001$, $R^2_{adj} = -0.010$, $F(2, 178) = 0.09$, $p. >.05$. The model of feedback condition, HAQ-II Total Score, and ASQ Alliance did significantly predict pre-post change score, when alliance was controlled, $R^2 = 0.05$, $R^2_{adj} = 0.04$, $F(1, 177) = 3.33$, $p. <.05$. As there was no difference in the strength of the relationship between feedback and outcome when therapeutic alliance was in the regression equation and when it was not in the equation, the proposed meditation of therapeutic alliance on the relationship between feedback and outcomes was not supported.

Discussion

Inconsistent Benefit of Feedback to Clients

The primary aim of the current study was to determine whether there was an effect of providing information to clients as well as therapists over and above the effect of providing feedback to therapists alone. Previously, Hawkins et al. (2004), Harmon et al. (2007), and Slade et al. (2008) found that outcomes were improved when therapists were given feedback about participants' progress, which is consistent with a wide body of literature on the effect of feedback on outcomes (Lambert et al., 2001; 2002). However, Hawkins et al. found that feedback to both clients and therapists produced better outcomes than provision of feedback to only the therapist, whereas Harmon et al. and Slade et al. found no additional benefit of provision of feedback to clients above the effect of feedback to therapists. In the current study, participants who received immediate feedback about their treatment progress ended treatment with a significantly greater reduction in distress scores than did those who did not (therapists of clients in both conditions received immediate feedback). The medium effect size of the benefit of double vs. single feedback was also the same as found by Hawkins et al.

One of the limitations about the results of most of the interventions within the line of research associated with feedback and outcomes was that feedback to therapists appeared to result in improved outcomes only for those participants who were identified as NOT. Lambert, Whipple et al. (2001) concluded that only approximately 25% of clients are signaled as being NOT. It was apparent that stronger manipulations would be needed to improve the outcomes for the majority of clients who were already making progress in therapy.

Hawkins et al. (2004), Harmon et al. (2007), and Slade et al. (2008) found that feedback to therapists improved outcomes for NOT participants over participants in a no-feedback control condition. Whereas Hawkins et al. and Slade et al. found no benefit of feedback to therapists of who were making expected progress in therapy, Harmon and colleagues did find a benefit of feedback to therapists on outcomes for participants who were already responding to treatment. In the current study, immediate feedback for both clients and therapists was effective at improving outcomes for the majority of participants, who were already responding to therapy, as well as for the 29% of participants who were at risk of treatment failure. A model of initial distress, feedback condition, and progress status accounted for more than 40% of the variance in change in distress during therapy and also predicted the number of sessions attended, the likelihood of ending treatment in the functional range, the likelihood of making reliable improvement in therapy, and the time to achieve clinical significance and reliable change.

Comparisons of the current findings with those of the extant research on the benefit of feedback to therapists over no feedback groups reveal the potential benefit for clients in routine clinical practice. Similar to the conclusions of the meta-analysis by Lambert, Whipple et al. (2001), 75% of signal participants in the current who were not given feedback about their progress (single feedback condition) ultimately ended the study having reliably worsened. However, when both participants and therapists were given immediate feedback that the participant was not responding to therapy, 48% of those predicted to have a negative treatment outcome ultimately ended the study having "recovered" or "improved" and only 16% actually ended the study classified as "deteriorated."

Unfortunately, it continues to be unclear as to why there has been inconsistency across studies as to whether there is an additional benefit of feedback to clients as well as to therapists. It would seem that participants in the current study would be more similar to those in the Harmon et al (2007) and Slade et al. (2008) studies, as they were conducted in university counseling center settings where clients tend to have among the lowest levels of distress and highest levels of global functioning of clients who enter psychotherapy. Indeed, participants in the current study began treatment with baseline OQ-45 scores similar to those of participants in the Harmon and Slade studies, which was 10 points OQ-45 points lower than those of participants in the Hawkins et al. (2004) study, which was conducted in a hospital-based setting.

Future Directions Related to Benefit of Client Feedback

Future research devoted to identifying characteristics of clients who are more likely to benefit from receiving feedback about their progress would likely be helpful in elucidating this inconsistency. In the meantime, because the provision of feedback to clients takes no additional resources when feedback to therapists is already being provided when using the OQ-Analyst software and because there has been no evidence of any deleterious effects of client feedback, employing feedback to both clients and therapists is likely a good clinical practice.

Although not experimentally manipulated in this study, a potentially important difference between the current study and those of Hawkins et al. (2004), Harmon et al. (2007), and Slade et al. (2008) that may have contributed to the lack of consistent findings is the speed in which feedback is provided to therapists and clients. In the

studies conducted by Hawkins and colleagues and Harmon and colleagues, feedback to therapists (and clients, in the conditions in which clients were ever given feedback) about whether clients were responding to treatment was delayed by one week. That is, participants' OQ-45 data was not made available until the session after they had provided the ratings. Slade and colleagues manipulated the speed at which feedback about progress and clinical support tool information was provided, but the most rapid feedback condition in this study still delayed feedback until one week after the OQ-45 data that would signal a client as making expected progress or as being at risk for a treatment failure had been given. She found that a one week delay resulted in fewer sessions to reach the same amount of pre-post treatment change but did not find any differences between the one- and two-week delay groups with respect to the amount of improvement participants received. In the present study, participants completed the OQ-45 before their session, and information about participants' level of distress and feedback about whether or not they were making expected progress in therapy was available for utilization in the same session. Although beyond the scope of the aims of the current study to investigate, it is plausible that feedback about progress within the same session as it is identified may be responsible for some of the benefit of feedback to both clients and therapists over feedback to therapists alone.

The benefit of truly immediate feedback may be particularly important in the current cohort of university counseling center students and as the millennial generation ages. Research on generational differences suggests that the cohort of millennials has an expectation of the use of technology in all aspects of life, are more pressured and are particularly achievement-oriented, expect a high degree of accountability, and are more

collaborative than previous cohorts (Howe & Strauss, 2000; Raines, 2003; Stafford & Griffis, 2008). Because millennial students are accustomed to immediate feedback through technology (i.e., Blackberry mail, text messaging, iPhone), accountability, and high achievement, they may more quickly drop out of therapy or become disengaged in the process of psychotherapy than other cohorts when feeling as though they are not improving. Future research should directly compare the relative benefit of feedback to therapists and clients when feedback about progress is provided in a true immediate condition versus a one-week or more delay.

Lack of Significant Findings Related to Therapeutic Alliance

The second major aim of the study was to investigate the relationship between therapeutic alliance, feedback, and outcomes. The HAQ-II and the ASC alliance subscale were administered in an online format. Both measures were given in an attempt to demonstrate the convergent validity of the ASC Alliance subscale. It was hypothesized that the strength of the therapeutic alliance would be related to change in levels of distress. If at least part of the reason that feedback is effective at improving client outcomes is that it strengthens the bond between the client and therapist such that the therapist is more aware of a client's level of distress and can become more attuned to the client's needs, it would stand to reason that providing additional feedback to the client could also improve outcomes by empowering the client to take a more active and collaborative role in therapy. A model in which therapeutic alliance mediates the effect of feedback on outcomes was proposed.

Contrary to the hypotheses, the HAQ-II total score and ASC Alliance subscale score were found to be completely unrelated to any of the outcome measures, regardless of progress status (i.e., NOT vs. making expected progress). The hypothesized meditational relationship was not supported by the results of this study. However, the data did reflect a statistically significant, robust correlation between the HAQ-II and the ASC Alliance subscale, which was a stronger for NOT clients. Because the ASC was designed to be particularly sensitive to problems within the therapeutic relationship, it is not surprising that the clients who could ostensibly be less pleased with therapy might have more negative ratings on the HAQ-II, which were also identified by the ASC.

There is no clear explanation for the lack of significant findings related to the therapeutic alliance, particularly given the considerable body of literature demonstrating that therapeutic alliance is a significant predictor of client outcomes (Horvath & Symonds, 1991; Martin et al., 2000). One possible explanation is that there was not enough variability within the responses to alliance measure to detect any possible trends. Ratings of the therapeutic alliance were universally high; only 16% of ASC Alliance subscale ratings that would indicate that the therapeutic alliance was an area that should be investigated as a potential reason, and only 18% of participants provided ratings on the HAQ-II that identified the alliance as weak. Thus, lack of significant findings may be related to ceiling effects, a theory that is supported by a strong negative skew associated with the distribution of the scores on these measures. Because the size of the group for whom the ASC Alliance scale would indicate a need to investigate problems with the therapeutic alliance or for whom the HAQ-II would indicate a weak therapeutic alliance, there was likely insufficient power within the subset of clients for whom the therapeutic

alliance may be weak to detect effects of alliance if they do exist. Safran and Muran (2006) argued that because correlations between therapeutic alliance and outcome typically only account for 6% of the variance in outcome, there may be little clinical utility in focusing research effort on the therapeutic alliance.

Limitations of the Present Study

The present study had a number of limitations that should be acknowledged. First, as with all the studies in this line of research, the lack of experimental control over the way in which feedback was employed in the study leaves open the possibility that there could have been differences in the way that therapy between feedback conditions was conducted, particularly since therapists were necessarily aware of the experimental intervention associated with the current study. Other than a one-question manipulation check on the online survey about whether or not they received feedback about their progress in therapy, there was no attempt to manipulate how or to what extent feedback was employed in sessions. As discussed by Hawkins et al. (2004), the nature of the feedback about participant progress in therapy suggests whether a client is progressing in the "right" or "wrong" way. Such feedback could presumably create demand characteristics in which a participant felt pressure to provide responses to indicate they were doing better than they actually were.

Compared to the Harmon et al. (2007) and Slade et al. (2008) studies, the current study had a much smaller sample size and employed only 5 therapists. Although there were no significant effects of individual clinicians on any of the outcome measures, the lack of variability in clinicians as treatment providers could be related to group results.

Although the utilization of the single feedback group as the treatment-as-usual group and the lack of a no-feedback control group allowed for more power to detect differences between the single and double feedback groups, it does limit the ability to directly compare the results of this study with others in this line of research that utilized no feedback controls.

Although the online data collection of the alliance measures was employed so as to minimize demand characteristics, it is also possible that participants' knowledge that the University was sponsoring the research study may have impacted their ratings of counseling center therapists, despite the assurances that no information about the participants' ratings of therapists would be shared with the therapists. Other aspects of the online therapeutic alliance data could be related to the lack of significant findings on the therapeutic alliance. Whereas immediate feedback about client's OQ-45 scores and progress in treatment were provided in the same session in which the data was obtained, participants were asked to respond to the alliance questionnaires via an online data collection site. If a client was identified early in treatment as being NOT, feedback alerting the therapist (and, for double feedback participants, the client) as to the need to address the issue, the alliance may have already been strengthened by the interventions before the participant had responded to the alliance measures.

Future Directions Involving the Effect of the Therapeutic Alliance

A potential avenue for future research utilizing the ASC as a clinical support tool may focus on the interaction of other client variables with therapeutic alliance. Puschner, Wolf, and Kraft (2008) found that although initial symptom distress negatively predicted

the subsequent quality of the therapeutic alliance, alliance did not predict distress post-treatment. Because clients who are typically successful in interpersonal relationships also tend to form stronger therapeutic alliances (Marmaret al., 1989; Kokotovic & Tracey, 1990), it may not be surprising that a sample of relatively high functioning participants who are managing the social environment of a university also provide globally high therapeutic alliance ratings. Mallinckrodt (1996) investigated perceived social support, therapeutic alliance, and symptoms and found that social support appears to mediate therapeutic alliance. When the effects of social support were controlled, the relationship between therapeutic alliance and symptoms was not significant. In a more severe population in which clients have fewer resources, diminished perceived social support outside of the therapeutic alliance, and higher levels of symptom distress, the strength of the therapeutic alliance may be more important in predicting outcomes, or there may be sufficient variability among client ratings of the alliance to detect differences among groups.

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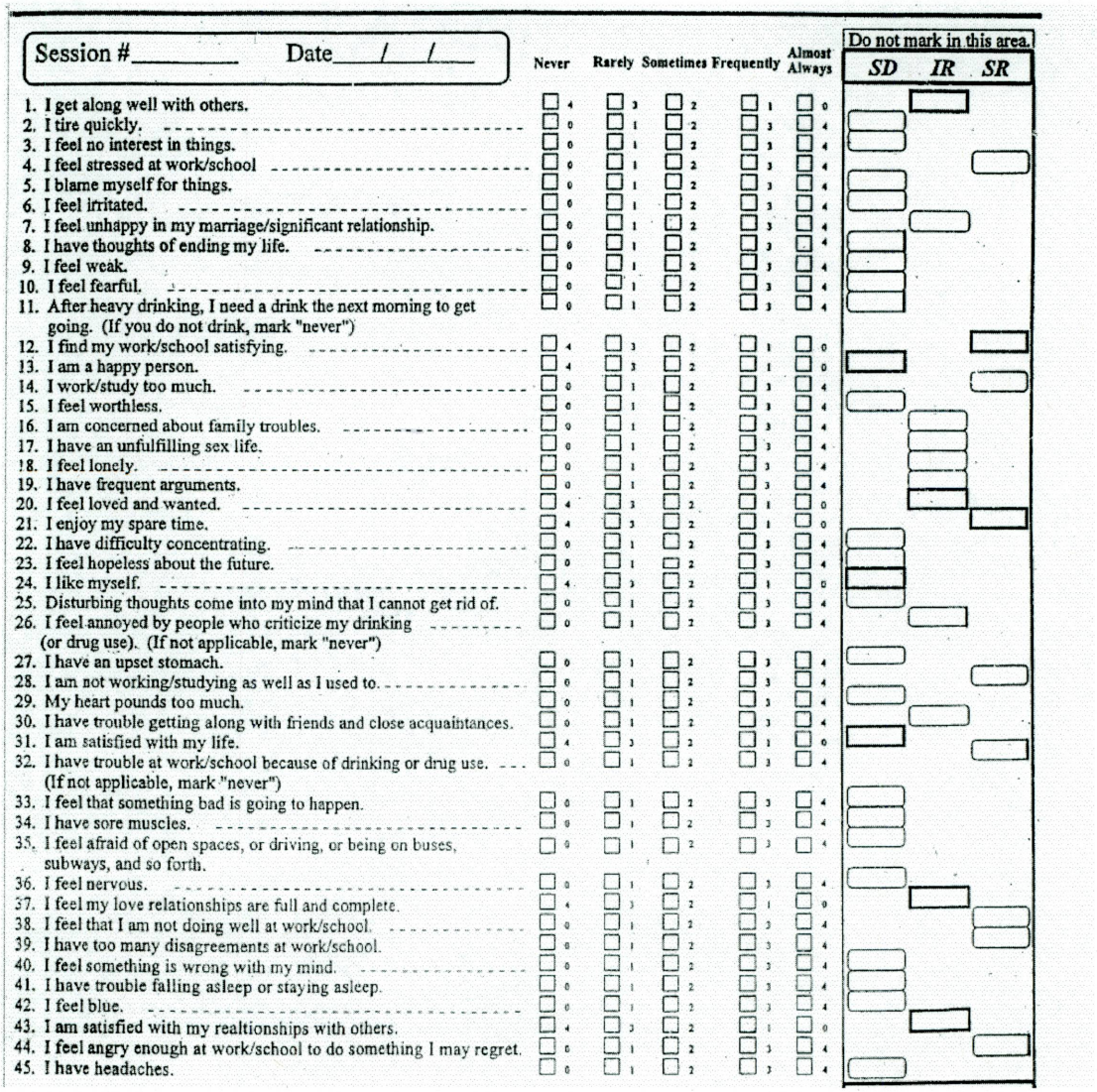
Appendix A

Outcome Questionnaire

Outcome Questionnaire 45.2. OQ-45 questions as shown on the paper-and-pencil version of the OQ-45. In the present study, the same questions were administered on a PDA (see Appendix B).

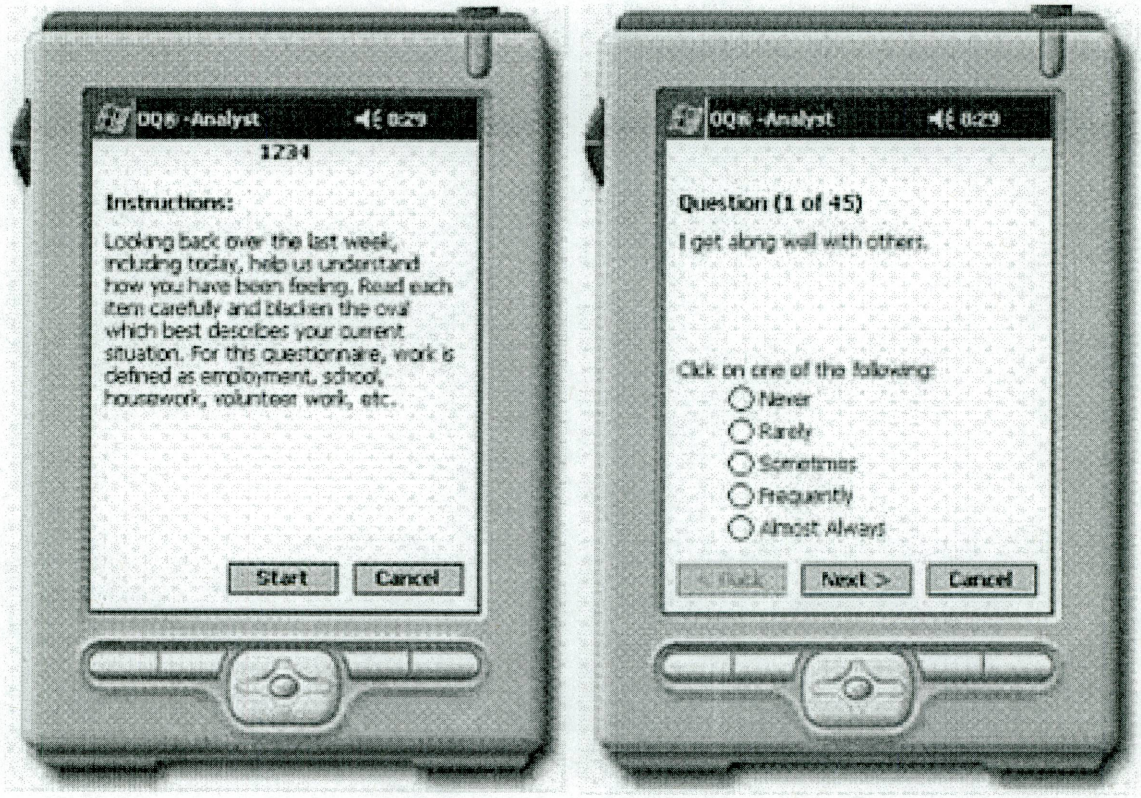


Session #_____ Date___/___/___

	Never	Rarely	Sometimes	Frequently	Almost Always	Do not mark in this area. SD	IR	SR
1. I get along well with others.	4	3	2	1	0			
2. I tire quickly.	0	1	2	3	4			
3. I feel no interest in things.	0	1	2	3	4			
4. I feel stressed at work/school	0	1	2	3	4			
5. I blame myself for things.	0	1	2	3	4			
6. I feel irritated.	0	1	2	3	4			
7. I feel unhappy in my marriage/significant relationship.	0	1	2	3	4			
8. I have thoughts of ending my life.	0	1	2	3	4			
9. I feel weak.	0	1	2	3	4			
10. I feel fearful.	0	1	2	3	4			
11. After heavy drinking, I need a drink the next morning to get going. (If you do not drink, mark "never")	0	1	2	3	4			
12. I find my work/school satisfying.	4	3	2	1	0			
13. I am a happy person.	4	3	2	1	0			
14. I work/study too much.	0	1	2	3	4			
15. I feel worthless.	0	1	2	3	4			
16. I am concerned about family troubles.	0	1	2	3	4			
17. I have an unfulfilling sex life.	0	1	2	3	4			
18. I feel lonely.	0	1	2	3	4			
19. I have frequent arguments.	0	1	2	3	4			
20. I feel loved and wanted.	4	3	2	1	0			
21. I enjoy my spare time.	4	3	2	1	0			
22. I have difficulty concentrating.	0	1	2	3	4			
23. I feel hopeless about the future.	0	1	2	3	4			
24. I like myself.	4	3	2	1	0			
25. Disturbing thoughts come into my mind that I cannot get rid of.	0	1	2	3	4			
26. I feel annoyed by people who criticize my drinking (or drug use). (If not applicable, mark "never")	0	1	2	3	4			
27. I have an upset stomach.	0	1	2	3	4			
28. I am not working/studying as well as I used to.	0	1	2	3	4			
29. My heart pounds too much.	0	1	2	3	4			
30. I have trouble getting along with friends and close acquaintances.	0	1	2	3	4			
31. I am satisfied with my life.	4	3	2	1	0			
32. I have trouble at work/school because of drinking or drug use. (If not applicable, mark "never")	0	1	2	3	4			
33. I feel that something bad is going to happen.	0	1	2	3	4			
34. I have sore muscles.	0	1	2	3	4			
35. I feel afraid of open spaces, or driving, or being on buses, subways, and so forth.	0	1	2	3	4			
36. I feel nervous.	0	1	2	3	4			
37. I feel my love relationships are full and complete.	4	3	2	1	0			
38. I feel that I am not doing well at work/school.	0	1	2	3	4			
39. I have too many disagreements at work/school.	0	1	2	3	4			
40. I feel something is wrong with my mind.	0	1	2	3	4			
41. I have trouble falling asleep or staying asleep.	0	1	2	3	4			
42. I feel blue.	0	1	2	3	4			
43. I am satisfied with my realtionships with others.	4	3	2	1	0			
44. I feel angry enough at work/school to do something I may regret.	0	1	2	3	4			
45. I have headaches.	0	1	2	3	4			

Appendix B

Simulated Administration of the OQ-45 on PDA



Appendix C

Sample Clinican Feedback Message

Below is an example of a Clinician Feedback Report generated by the OQ Analyst software for a patient who has completed the OQ®-45.2. The report indicates an alert status of Yellow, meaning that the patient has deviated from the expected rate of change and that there is some chance of negative outcome. Included in the report is the patient's response to critical items, a subscale breakdown of the total score, and a graph comparing the total score of previous administrations with the empirically expected rate of improvement.

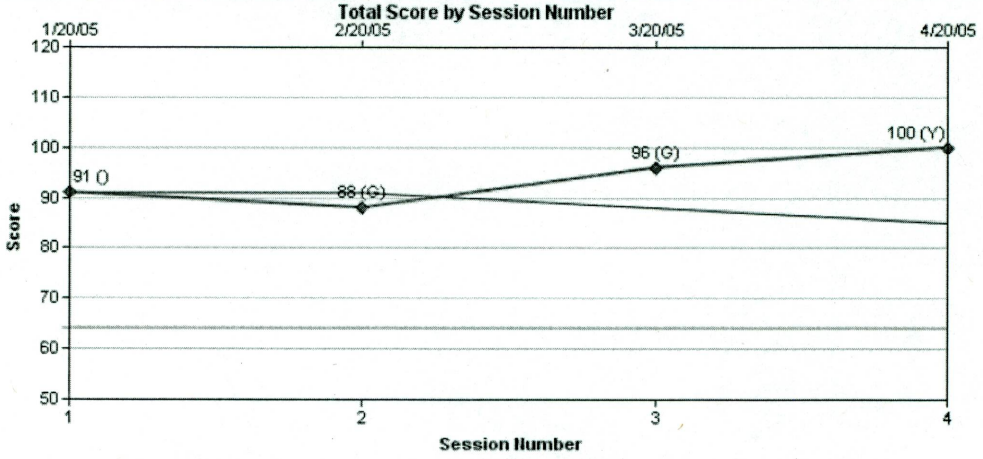
Name:	An, Adult, 2	**ID:**	24059
Session Date:	4/20/2005	**Session:**	4
Clinician:	Clinician, Randy	**Clinic:**	South Clinic
Diagnosis:	Depression		
Algorithm:	Empirical		

Alert Status:	**Yellow**
Most Recent Score:	100
Initial Score:	91
Change From Initial:	No Reliable Change
Current Distress Level:	Moderately High

Most Recent Critical Item Status:

8.	**Suicide** - I have thoughts of ending my life.	Frequently
11.	**Substance Abuse** - After heavy drinking, I need a drink the next morning to get going.	Sometimes
26.	**Substance Abuse** - I feel annoyed by people who criticize my drinking.	Frequently
32.	**Substance Abuse** - I have trouble at work/school because of drinking or drug use.	Frequently
44.	**Work Violence** - I feel angry enough at work/school to do something I might regret.	**Rarely**

Subscales	Current	Outpat. Norm	Comm. Norm
Symptom Distress:	56	49	25
Interpersonal Relations:	27	20	10
Social Role:	17	14	10
Total:	**100**	**83**	**45**



Graph Label Legend:

(R) = Red: High chance of negative outcome (Y) = Yellow: Some chance of negative outcome

(G) = Green: Making expected progress (W) = White: Functioning in normal range

Feedback Message:

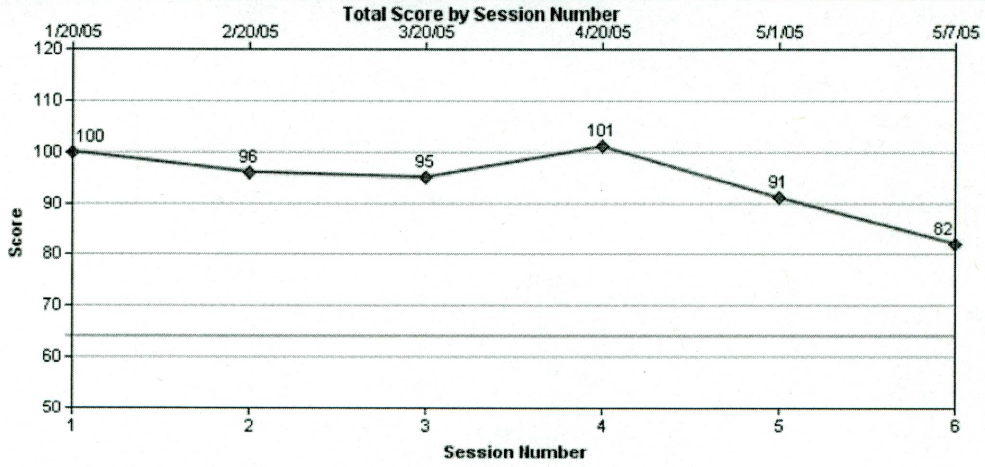
The rate of change the patient is making is less than expected. This patient may end up with no significant benefit from therapy. It is recommended that you be alert to the possible need to improve the therapeutic alliance, reconsider the client's readiness for change and the need to renegotiate the therapeutic contract, intervene to strengthen social supports, or possibly alter your treatment plan by intensifying treatment, or shift intervention strategies. Continue to carefully monitor treatment progress.

Appendix D

Sample Client Feedback Message

Below is an example of a Client Feedback Report generated by the OQ Analyst software for a patient who has completed the OQ®-45.2. This report corresponds to the previous Clinician Feedback Report but is designed to provide feedback directly to the patient. Included in the report is a graph tracking the total score of previous administrations as well as feedback messages indicating the patient's current progress in treatment. All feedback messages are designed for positive reinforcement of the therapeutic relationship.

Name:	An, Adult, 2	**ID:**	24059
Session Date:	5/7/2005	**Session:**	6
Clinician:	Clinician, Randy	**Clinic:**	South Clinic



Feedback Message:

Please note that the information presented below is based on your responses to the questionnaire that you complete prior to each therapy session.

Currently, your level of progress approximates that accomplished by most clients in therapy.

However, there is likely still time for additional improvement.

We urge you to continue working as hard as you have to experience the greatest benefit possible from treatment.

If you have not already done so, now may be the right time to discuss with your therapist the aspects of treatment that have been the most helpful, as well as aspects of treatment that have not been helpful.

Appendix E

Assessment for Signal Clients (ASC) Alliance Subscale Questions.

In the present study, the ASC was administered via internet survey.

Name:_____
Client ID#:_____
Date:_____

ASC

INSTRUCTIONS: (#1-11): The following statements describe attitudes people might have about their therapist. Thinking about the *last session you completed* with your therapist:

	Strongly Disagree	Slightly Disagree	Neutral	Slightly Agree	Strongly Agree
1. I felt cared for and respected as a person.	O	O	O	O	O
2. I felt my therapist understood me.	O	O	O	O	O
3. I thought the suggestions my therapist made were useful.	O	O	O	O	O
4. I felt like I could trust my therapist completely.	O	O	O	O	O
5. I was willing to share my innermost thoughts with my therapist.	O	O	O	O	O
6. I felt there was a breakdown in the relationship with my therapist.	O	O	O	O	O
7. I felt like my therapist disapproved of me.	O	O	O	O	O
8. At times, the tone of my therapist's voice seemed critical or impatient.	O	O	O	O	O
9. My therapist seemed to be glad to see me.	O	O	O	O	O
10. My therapist and I seemed to work well together to accomplish what I want.	O	O	O	O	O
11. My therapist and I had a similar understanding of my problems.	O	O	O	O	O

Appendix F

Helping Alliance Questionnaire-Revised (HAQ-II) Questions

In the present study, the HAQ-II was administered in an online survey format (see Appendix H).

THE HELPING ALLIANCE QUESTIONNAIRE Patient Version

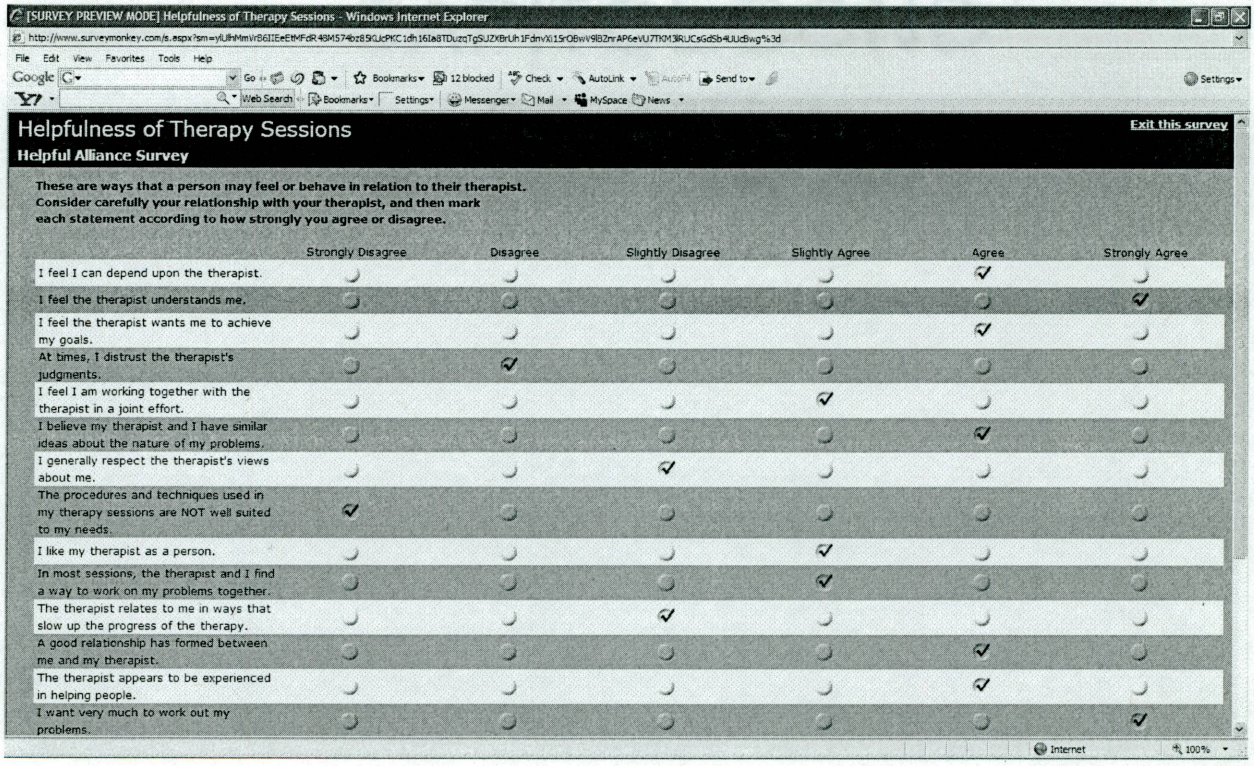
INSTRUCTIONS: These are ways that a person may feel or behave in relation to another person – their therapist. Consider carefully your relationship with your therapist, and then mark each statement according to how strongly you agree or disagree. Please mark every one.

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1. I feel I can depend upon the therapist.	1	2	3	4	5	6
2. I feel the therapist understands me.	1	2	3	4	5	6
3. I feel the therapist wants me to achieve my goals.	1	2	3	4	5	6
4. At times I distrust the therapist's judgment.	1	2	3	4	5	6
5. I feel I am working together with the therapist in a joint effort.	1	2	3	4	5	6
6. I believe we have similar ideas about the nature of my problems.	1	2	3	4	5	6
7. I generally respect the therapist's views about me.	1	2	3	4	5	6
8. The procedures used in my therapy are **not** well suited to my needs.	1	2	3	4	5	6
9. I like the therapist as a person.	1	2	3	4	5	6
10. In most sessions, the therapist and I find a way to work on my problems together.	1	2	3	4	5	6
11. The therapist related to me in ways that slow the progress of the therapy.	1	2	3	4	5	6
12. A good relationship has formed with my therapist.	1	2	3	4	5	6
13. The therapist appears to be experienced in helping people.	1	2	3	4	5	6
14. I want very much to work out my problems.	1	2	3	4	5	6
15. The therapist and I have meaningful exchanges.	1	2	3	4	5	6
16. The therapist and I sometimes have **un**comfortable exchanges.	1	2	3	4	5	6

17. From time to time, we both talk about the same important events in my past.	1	2	3	4	5	6
18. I believe the therapist likes me as a person.	1	2	3	4	5	6
19. At times the therapist seems distant.	1	2	3	4	5	6

Appendix G

Simulated Internet Administration of the HAQ-II



Appendix H

Informed Consent Form

LOMA LINDA UNIVERSITY

School of Science and Technology
Department of Psychology

11130 Anderson Street
Loma Linda, California 92350
(909) 558-8577
Fax: (909) 558-0171

INFORMED CONSENT

Effect of Client Feedback on Outcomes and the Role of the Therapeutic Alliance

Purpose and Procedures

You are invited to participate in a research study that is designed to examine the factors that lead to positive outcomes for students seeking psychotherapy in a university counseling center. This study is being conducted by researchers at the University of Redlands and Loma Linda University and is part of a doctoral dissertation by Elizabeth Cisneros, a doctoral student in psychology at Loma Linda University. If you agree to participate in this study, you will be asked to provide your email address to the study researcher. You will be emailed a link to a website with an online questionnaire you will be asked to complete at least once but no more than twice during your course of therapy. In this questionnaire, you will be asked to provide feedback regarding your feelings about your therapist and the helpfulness of the therapy sessions. Your name will not be associated with the information you send over the internet, and your therapist will not receive the information you share in this questionnaire.

There is also a 50-50 chance that you will receive regular, computer-generated graphs updating you about your treatment progress. This does not mean other feedback may not be provided as a normal part of therapy. If you agree to participate in this study, the information that the Counseling Center routinely gathers about you will also be used for this study. This information will include your age, gender, ethnicity, the number of therapy sessions you attend, your diagnosis, the medications you may be taking, and your therapist's assessment of how well you are functioning. The progress notes written for your therapy sessions or other information about what you discuss in your therapy session will not be accessed or utilized in this study. This will require no additional effort on your part, and your name/other identifying information will be separated from the information you provide.

Risks and Discomforts

There are no known risks to participating in this study, beyond those experienced in everyday life. The questionnaires you will be asked to complete have been completed by many individuals without incident. There is a slight possibility that you may experience minor psychological discomfort while responding to some of the questions. Although it is unlikely that this will occur, you are free to discontinue participation in the study at any time, for any reason.

The therapist you will see and the type of therapy you will receive will be the same, regardless of whether or not you participate in this study. The issues you discuss with your therapist will never be shared with the study investigators. The information you provide in the online questionnaire about your therapist and your feelings about the helpfulness of your therapy sessions will not be shared with your therapist. The

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Institutional Review Board
Approved 9/2/08 Void After 9/1/2009
58184 Chair R T Rigsby MD

Initial_____
Date _____

procedures involved with this study will, in no way, prohibit the therapist from providing you with optimal services.

Any information submitted via the Internet may not be secure. Confidentiality of personal information that you submit over the Internet cannot be guaranteed. However, efforts to protect your confidentiality will be taken by 1) providing you with a unique participant identification number that prevents you from having to supply identifying information, such as your name; 2) utilizing the many firewalls and protection software on the online survey host; 3) maintaining security of your email address and utilization of your email address only for the purposes of this study. Should a breach of confidentiality occur, you would be informed by email.

Benefits

It is unknown whether you will receive any personal benefits from participation in the study, although it is possible that you may. Your participation will provide valuable information about the factors associated with improvement in students receiving therapy in university counseling centers.

Participants' Rights

Participation in this study is completely voluntary. Your decision whether or not to participate in the study will, in no way, affect your ability to receive treatment or the quality of treatment from the Student Counseling Center and will have no effect on your standing with the University.

Significant New Findings/Alternatives to Participation

Any significant new findings which develop during the course of this study, which may affect your willingness to continue in the research, will be provided to you by the investigators.

Should you choose not to participate in this study, you will still receive the standard therapeutic practices of the clinic. The therapist you will see and the type of therapy you will receive will be the same, regardless of whether or not you participate in this study.

Confidentiality

Your responses to the online survey and to the questionnaire about your symptoms will be maintained by the study investigators for research purposes. Furthermore, you data will kept confidential and will not be released to other parties, unless required to do so by law. The results of this study, including your responses to the questionnaires, may be published for scientific purposes. However, your data will be combined with the data obtained from other participants in the study, and the identity of individual participants will never be revealed. You will be assigned a subject identification code and password. All of the information you provide will be identified by this code, rather than by your name. A list linking names and identification numbers will be kept in a locked file cabinet to which only the primary investigator has access, as a means of protecting your confidentiality. Furthermore, only the investigators will have access to your responses to the surveys.

Costs to Participants/ Payment for Participation

There will be no cost to you for participation in the research study. To thank participants for being a part of this research, each response you provide to the online questionnaire will enter you into a raffle for three gift card prizes. For each time you receive an email invitation and follow the link provided to complete the online survey, you will have a chance to win a $25 gift card to Starbucks Coffee, a $25 iTunes gift card, or a $50 amazon.com gift certificate. Completion of the online survey before December 1, 2008 will enter you

Initial_____
Date _____

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#58184 Chair R Z Rigsby MD

into the raffle held on December 10, 2008; completion of the online survey after this time will enter you into the raffle held on April 15, 2009. Winners of the raffles will be notified by email.

Questions

If you have any questions about the research study or your participation in the study, you may feel free to contact Elizabeth Cisneros, M.A. or Dr. Lorraine Young at any time prior to agreeing to participate or at any time during the study. You may contact Ms. Cisneros by phone at (909) 573-6414 during regular business hours or by email at epreston@llu.edu. Dr. Young may be contacted by phone at (909) 748-8108 or by appointment at the University of Redlands Counseling Center.

If you wish to contact an impartial third party not associated with this study regarding any question or complaint you may have about the study, you may contact the Office of Patient Relations, Loma Linda University Medical Center, Loma Linda, CA 92354, phone (909) 558-4647 for information and assistance.

Informed Consent Statement

I have read the contents of the consent form and have listened to the verbal explanation given by the investigator if so desired. My questions concerning this study have been answered to my satisfaction. I hereby give voluntary consent to participate in this study. Signing this consent document does not waive my rights nor does it release the investigators, institution or sponsors from their responsibilities. I may call Elizabeth Cisneros at (909) 573-6415 if I have additional questions or concerns. I have been given a copy of this consent form. I have received a copy of the California Experimental Subject's Bill of Rights and have had these rights explained to me.

___ I consent to participate.

_____ _____
Signature of participant *Date*

_____
Printed name of participant

___ I do not consent to participate.

Email address to which link to questionnaire may be sent: _____

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58184 Chair R L Rigsby MD

Initial_____
Date _____

Appendix I

Authorization for the OQ and ASC

DEPARTMENT OF PSYCHOLOGY
AND CLINICAL PSYCHOLOGY

7/14/10

To whom it may concern,

This letter is to acknowledge that I am the author of the following instruments: Outcome Questionnaire (OQ) and the Assessment for Signal Cases (ASC). Furthermore, this letter is also to acknowledge that Elizabeth Preston Cisneros has permission to use both of these instruments for the purpose of completing her doctoral dissertation.

Sincerely,

Michael J. Lambert

Michael J. Lambert, Ph.D.
Professor of Psychology and Susa Young Gates University Professor
Brigham Young University

BRIGHAM YOUNG UNIVERSITY • 264 TAYLOR BUILDING • PROVO, UTAH 84602-9626
(801) 422-4050/FAX: (801) 422-0163 • EMAIL: clinical_psychology@byu.edu