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Patient-focused research: Examining the psychotherapist as a feedback receiver

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PATIENT-FOCUSED RESEARCH: EXAMINING
THE PSYCHOTHERAPIST AS A
FEEDBACK RECEIVER

by

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Brigham Young University
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ABSTRACT

Patient-focused Research: Examining the Psychotherapist as a Feedback Receiver

by

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The provision of feedback to psychotherapists regarding patient progress has been shown to produce improved therapy outcomes. However, little is known regarding therapists' responses to feedback. The current research examined novice therapists' perceptions of feedback based on the Outcome Questionnaire-45 (OQ-45). It was hypothesized that feedback would be considered more valuable when it was negatively-valenced (i.e., indicated that patient response to therapy was worse than expected). Patients (N = 19) of 5 trainee psychotherapists completed the OQ-45 before each session. Therapists then received feedback and rated it based on several characteristics. As hypothesized, negatively-valenced feedback was rated as more valuable than positively-valenced feedback. Additionally, therapists' ability to estimate patient change accurately increased over time. A follow-up questionnaire was completed by therapists in order to provide qualitative and quantitative data regarding their usage and perceptions of feedback. Results are discussed in terms of implications for the continued implementation of feedback systems.

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CHAPTER 1

INTRODUCTION

Psychotherapists have traditionally resisted evaluating their patients' treatment outcomes on the basis of standardized scales (Gilbody et al., 2002), preferring their own clinical judgment and patients' verbal reports. Training models emphasize experience as key to the provision of effective therapy; novice therapists are required to accumulate a given number of hours of "chair time" under the supervision of senior practitioners. However, reviews of the relationship between clinician experience (years in training and practice) and outcomes generally do not support such an emphasis (Beutler et al., 2004; Christensen & Jacobson, 1994). Additionally, clinical judgment has repeatedly been found to be inferior to statistical methods at predicting patient behaviors and outcomes (Ægisdottir et al., 2006; Dawes, Faust, & Meehl, 1989; Faust, 1989; Grove & Meehl, 1996; Grove et al., 2000; Meehl, 1954).

Given the weak links between clinical judgment, training, and outcome, recent authors have emphasized the importance of providing feedback to therapists that is based upon the results of valid and reliable measurement instruments (Sapyta, Riemer, & Bickman, 2005). Such feedback to therapists has been shown to result in improved outcomes for their patients, as compared to patients whose therapists receive no feedback (e.g., Lambert et al., 2003; Lambert et al., 2005; Brodey et al., 2005). Interestingly, the improvements shown by therapists as a result of feedback appear to fade when the

feedback is discontinued (Lambert, 2003, cited in Miller, Duncan, Sorrell, & Brown, 2005), suggesting that continuous feedback is imperative.

The current movement toward more scientific evaluation of outcomes appears to have been aided by external sources. In 1984 the World Health Organization (WHO) initiated the project “Health 2000,” which committed member states to develop and implement measures to assure the quality of health services (WHO, 1991; summarized in Percevic, Lambert, & Kordy, 2004). Specific to the United States, the shift to the managed-care system has compelled therapists to demonstrate the efficacy and effectiveness of their practices. Miller and colleagues (2005) frankly described the current milieu:

More than any previous time in the history of the field, policy makers and payers are stridently insisting that therapists and the systems of care in which they operate must ‘deliver the goods’. Accountability is the watchword of the day, and ‘return on investment’ the guiding metric. Like it or not, psychotherapy has become a commodity and those footing the bill want proof of the effectiveness and value of the product being purchased. (p. 199)

The premium placed on services that are demonstrably effective is reflected in clinical psychology’s push for empirically-supported treatments (ESTs; Chambless & Hollon, 1998; Chambless & Ollendick, 2001). Such efforts represent a “top-down” approach to ensuring the quality of therapy provided to individual patients (c.f., Lambert, 2001). An alternative and complementary method is *patient-focused research* (Howard et al., 1996). Patient-focused research employs a “bottom-up” approach to quality assurance by monitoring the progress of individual patients and providing feedback of the results to

therapists. Such data allows practitioners to advocate for referrals on the basis of their patient outcomes (Johnson & Shaha, 1996). Additionally, progress feedback to therapists appears to result in the more cost-effective usage of therapy resources (Lambert, 2007; Slade et al., 2006).

Since its introduction by Kenneth Howard and colleagues in 1996, patient-focused research has gained considerable attention from clinicians and researchers alike (Newnham & Page, 2007). Newnham and Page identified two reasons for this surging popularity. First is the increasing recognition that not all clients benefit from treatment. Lambert and Ogles (2004) suggested that between 5% and 10% of psychotherapy patients experience iatrogenic effects, and an additional 35% to 40% experience no significant benefit (Hansen, Lambert, & Forman, 2002). Thus, although empirically-supported treatments work on average, they cannot be expected to produce the same results for all clients. The second reason, therefore, is the ability of patient-focused research to modify practice for a particular patient in 'real time' by alerting clinicians when patients do not progress as expected.

The provision of progress feedback to therapists has been shown to enhance treatment outcomes, particularly among patients predicted to have negative outcomes (e.g., Brodey et al., 2005; Harmon et al., 2007; Hawkins et al., 2004; Lambert, Whipple, et al., 2001; Lambert, Whipple, Vermeersch, et al., 2002; Miller et al., 2004; Whipple et al., 2003). However, the mechanisms by which feedback works remain poorly understood. Newnham and Page (2007) noted that "the method by which feedback is addressed and used by therapists has not yet been assessed" (p. 4). Additionally, many therapists continue to resist the systematic monitoring of patient progress (Gilbody et al.,

2002). In order to further the dissemination and understanding of this effective method of improving outcomes, it is necessary to investigate the factors that affect therapists' usage of feedback.

The purpose of the present research was to examine the therapist as a feedback receiver. Therapists were provided with feedback based on the Outcome Questionnaire-45 (OQ-45; Lambert, Morton, et al., 2004), one of the most widely-studied instruments in patient-focused research. Given that very little is known about therapists' emotional and behavioral responses to feedback, the research was primarily correlational in nature. However, several specific hypotheses were examined, based on feedback theory and previous research. The present research incorporated an embedded qualitative component (cf. Creswell & Plano Clark, 2007) in order to elicit a broad range of information and guide future research efforts.

CHAPTER 2

LITERATURE REVIEW

Feedback

Feedback as a topic of study has its roots in the fields of cybernetics and engineering. Social scientists, most prominently Kurt Lewin, adapted the concept of feedback to the study of human behavior in the mid-20th century (Claiborn & Goodyear, 2005). Definitions of feedback within psychology specify that it is information provided to a person, from an external source, about the person's behavior or its effects (Claiborn, Goodyear, & Horner, 2001). Feedback is inherent in all human interaction and often occurs outside of conscious awareness. Research on feedback has largely focused on feedback that is deliberate (i.e., is provided with a specific objective). Deliberate feedback has been labeled *feedback intervention*. Kluger and DeNisi (1996) defined feedback interventions (FIs) as "actions taken by (an) external agent(s) to provide information regarding some aspect(s) of one's task performance" (p. 255).

Claiborn and Goodyear (2005) described several features of deliberate feedback. The first is that feedback can be primarily *descriptive*. Descriptive feedback conveys one's observations of another and is based on a low level of inference. Claiborn and Goodyear stated that feedback based on observation alone minimizes the authoritative position of the individual providing feedback. Descriptive feedback provides primarily information but may also influence behavior. A second feature of feedback is that it can

be *evaluative*. Evaluative feedback offers an assessment of behavior in relation to some criterion. Such feedback therefore falls on a continuum from negative to positive in valence. Negatively-valenced feedback is often termed *constructive* or *corrective* feedback. The OQ-45 feedback provided by Lambert and colleagues (described in detail later in this paper) is evaluative in that it compares patient progress to a clinical significance cutoff and to an expected response curve. Lambert (2005) considered the evaluative component of OQ-45 feedback to be essential to improved outcomes. Claiborn and Goodyear identified two additional features of deliberate feedback, in that it may be *emotionally-disclosing* or *interpretive*, neither of which apply to feedback generated from OQ-45 results.

Until recently, it was widely assumed that the provision of feedback always resulted in improved performance. Latham and Locke (1991) stated that “few concepts in psychology have been written about more uncritically and incorrectly than that of feedback” (p. 224). However, researchers in the past thirty years have recognized that FIs produce highly variable results. Kluger and DeNisi (1996) performed a meta-analysis of 131 FI studies, containing 607 effect sizes from the data of more than 12,000 participants. They found that FIs improved performance on average (with an average effect size of $d = 0.41$). However, over one-third of the individual effects were negative (feedback resulted in a deterioration of performance).

Factors Affecting Feedback

Due to the variable effects of FIs, researchers from diverse disciplines, including clinical psychology, social psychology, organizational psychology, and business management, have searched for variables that moderate FI effectiveness. Findings from

such studies are briefly summarized here. Important factors can generally be sorted into four categories: 1) factors related to the feedback source; 2) factors related to characteristics of the feedback itself; 3) receiver variables; and 4) factors related to the setting or situation in which feedback is provided. Some comments are included placing the OQ-45 feedback system in the context of the identified factors.

Source

Feedback researchers generally use the term *source* to refer to the deliverer of feedback. Although the source is technically not part of feedback, it is impossible to separate source effects from feedback effects. Feedback sources often include supervisors, peers, coworkers, and self. In psychotherapy, the feedback source is typically the therapist (with client as receiver). In the context of feedback to therapists, the sources are the client (indirectly) and the measure that provides data (in this case, the OQ-45). Feedback is most likely to be accepted by the receiver when it comes from an influential source (Strong & Mattross, 1973). Two factors characterize influential sources: *credibility* and *attractiveness* (Claiborn & Goodyear, 2005). Credibility is enhanced when sources are perceived as knowledgeable and trustworthy (Ilgen, Fisher, & Taylor, 1979). Attractiveness refers to a source's personal relevance and availability to the receiver.

Greller and Herold (1975) found that individuals were more receptive to feedback provided by sources of increasing psychological closeness. Individuals in an occupational setting reported that they used self-feedback the most and feedback from the company the least when learning job requirements (possibly because self-feedback was the most readily available). Kanfer, Karoly, and Newman (1974) showed slides of female faces to male undergraduates and then provided attractiveness scores purportedly based on either

the males' own emotional reactions or the reactions of peers. Individuals who received feedback ascribed to self showed greater recall and greater influence on their preferences following the feedback. Their results support the psychological closeness theory advanced by Greller and Herold.

Although credibility, attractiveness, and psychological closeness are the source variables most closely tied to receptiveness, the degree to which receivers are motivated to respond to feedback is most influenced by the relative power of the source in relation to the receiver (Ilgen, Fisher, & Taylor, 1979; Kivlighan, 1985). Indeed, Ashford (1993) found that individuals in business settings rated feedback provided by their company and supervisor as most important, while undergraduate students rated self-feedback as more important. Therefore, it appears that individuals are most likely to incorporate behavioral change as a result of feedback when it carries the potential for negative or positive personal consequences. The power of the feedback source may be especially important when receivers are resistant (Claiborn & Goodyear, 2005).

A final consideration relevant to the feedback source is based on the Elaboration Likelihood Model (ELM; Petty, 1995). Tenets of the ELM hold that influence based on source characteristics tends to have less long-term impact than influence that results from the message itself. Presumably, individuals who accept feedback based solely on the power or influence of the source do not experience the attitudinal changes necessary to internalize the feedback. It is therefore important that individuals carefully and critically consider the content of feedback.

Feedback Characteristics

The most extensively-researched moderator of the effectiveness of feedback is its valence, alternately referred to as the feedback *sign*. Feedback that is positive in valence praises, supports, or encourages the observed behavior; negatively-valenced feedback describes behavior as inadequate relative to some criterion (Claiborn, Goodyear, & Horner, 2001). Jacobs, Jacobs, Feldman, and Cavior (1973) examined the effects of positive and negative feedback in working groups among undergraduates. They reported that receivers consistently rated positive feedback as being more credible than negative feedback. Jacobs and colleagues termed this discrepancy the “credibility gap” (p. 217). In addition, positive feedback was rated as more desirable and as having greater impact. Negative feedback was found to be more acceptable when it was strictly behavioral in content (e.g. “you were acting bossy”) as compared to emotional (“you made me angry”).

The increased acceptance of positive over negative feedback is the most common finding regarding valence (Kivlighan, 1985). Davies (1997) found that students receiving personality feedback also perceived positive feedback to be more accurate than negative feedback. However, these findings appear to interact with receiver variables, as discussed shortly. Several researchers have manipulated the sequence of positive and negative feedback. In general, negative feedback was more acceptable when preceded by positive feedback (Rose & Bednar, 1980; Schaible & Jacobs, 1975). Morran, Stockton, Kline, and Teed (1998) found placing negative feedback between two sets of positive feedback to be effective. Rose and Bednar (1980) found that feedback was more effective in promoting group cohesiveness when it combined both positive and negative elements than when it

was predominantly positive or negative in sign. Predominantly negative feedback, in particular, appears to have detrimental effects (Kluger & DeNisi, 1996).

Although negative feedback is less frequently accepted than positive feedback, most authors believe it to be essential to the effectiveness of feedback interventions. Negative feedback signals a discrepancy between the receiver's current behavior and some objective standard. According to the ELM (Petty, 1995), such a discrepancy creates cognitive dissonance and is therefore met with counterarguments, which stimulate deeper processing of the material than does positive feedback. Thereby, incorporation of negative feedback may lead to more lasting change. Specific to the provision of progress feedback to psychotherapists, Sapyta, Riemer, and Bickman (2005) stated "providing feedback that the client is doing well only confirms to the clinician that the treatment plan is working well" (p. 149). Their statement is supported by the fact that Lambert and colleagues' feedback program has been most effective for patients who do not progress in therapy as expected (reviewed later). Thus, it would appear that feedback that indicates a discrepancy between current performance and objective criteria is likely to be more effective (i.e., more likely to produce desired behavioral change) than feedback that is primarily positive, provided that it is not rejected by the receiver.

A related consideration is feedback *velocity*, which describes receivers' current behavior in relation to their own previous performance. Velocity is a function of the direction and rate of change from a previous point (Hsee & Abelson, 1991). Kluger and DeNisi (1996) found that velocity cues increased the effectiveness of FIs. They stated that "people prefer to receive a positive velocity FI (you improved from the last trial), even at the expense of a lower objective FI sign" (p. 268). The OQ-45 feedback system

provides velocity feedback in two formats: (1) a visual progress graph charting OQ-45 scores at each session; and (2) classifications of patient status as improved, deteriorated, or unchanged.

In contrast to velocity feedback, which compares one's own performance at various points in time, normative feedback compares the receiver's performance to the performance of peers or a reference group. Ivancevich and McMahon (1982) found that individuals showed greater performance improvements when they received feedback only about their own progress than when they received information about how their progress compared to others. However, Kluger and DeNisi (1996) found that normative information neither attenuated nor augmented the effectiveness of FIs on performance. Atwater and Brett (2006), in contrast to both, found that managers who received 360 degree feedback from bosses and peers reacted more favorably to feedback containing both scores and normative information than to feedback that contained scores only. The impact of normative information of FI effects remains unclear. OQ-45 feedback contains normative information in the form of comparisons to expected response curves, which are used to generate color-coded feedback and written messages to therapists. The progress graphs are evaluative (because OQ-45 scores are plotted in relation to a clinical cutoff line) but not normative.

Receiver Variables

Characteristics of the feedback receiver play a large role in moderating the impact of other variables. Much research has focused on the interaction of feedback valence with receiver characteristics, most notably self-esteem. In general, individuals with high self-esteem tend to perceive positive feedback as more accurate than negative

(Claiborn, Goodyear, & Horner, 2001; Kivlighan, 1985). Individuals with high self-esteem have been found to derive more confidence from positive feedback and to be less affected by negative feedback than individuals with low self-esteem (Ilgen, Fisher, & Taylor, 1979). Social psychology research suggests that this effect may be due to confirmation bias; individuals who have positive self-concepts are more likely to discount information that is inconsistent with their beliefs about themselves.

Baumgardner, Kaufman, and Levy (1989) found that individuals with low self-esteem maintained esteem in the face of negative interpersonal feedback by publicly derogating the feedback source. However, the same individuals did not show the same tendency in private. In contrast, individuals with high self-esteem were less critical of negative evaluation in public than they were in private. Baumgardner and colleagues suggested that individuals low in self-esteem may be more concerned with social evaluation and therefore less willing to tolerate negative feedback in public.

Morran and Stockton (1980) examined the credibility, desirability, and impact of positive and negative feedback in small counseling groups. Participants wrote positive and negative feedback for every group member at the 6th group meeting. Morran and Stockton found that positive feedback was rated as more desirable than negative feedback overall. Subjects did not differ in their ratings of positive feedback. However, individuals high in self-concept rated negative feedback as more desirable than did those with low self-concept. The authors suggested that individuals with lower self-concepts may become emotionally aroused and therefore more defensive when receiving negative feedback.

The reception of feedback is also moderated by the receiver's mood. Nelson and Craighead (1977) recruited undergraduates with very high and very low depression scores. The students were instructed to select syllables that "matched" ambiguous stimuli; students received positive or negative feedback following some selections. Those in the reinforcement condition received positive feedback 70% of the time, and those in the punishment condition only 30% of the time. Nelson and Craighead found that depressed individuals recalled less positive and more negative feedback than their counterparts (a phenomenon termed *mood-congruent recall*). In addition, depressed participants were more accurate than controls in recalling the number of times they received negative feedback.

MacFarland and Morris (1998) examined suggestibility among dysphoric and nondysphoric university students. Individuals were asked to recall details of a story and received negative feedback regarding the accuracy of their recall. Following feedback, the participants were asked to answer the same questions again. Dysphoric participants tended to shift their answers more in response to negative feedback than did nondysphoric individuals. Therefore, it appears that negative feedback may have increased effects among individuals in low mood states.

Although self-esteem and mood are the most commonly acknowledged receiver variables in relation to feedback, several others have been explored. Ilgen, Fisher, and Taylor (1979) reviewed research suggesting that individuals with internal locus of control performed tasks better when receiving *task-generated* feedback, which is feedback that is provided as a direct result of performing a task (e.g., shooting a basketball). In contrast, individuals with external locus of control appear to perform better when feedback is

delivered interpersonally. Attention, goals, and motivational processes also affect the reception of feedback. These will be discussed below in the context of various feedback theories.

The effectiveness of feedback is limited when receivers are resistant to the feedback exchange (Strong & Matross, 1973). Claiborn and Goodyear (2005) identified two possible sources of resistance: First, the receiver may feel that the relationship or situation is inappropriate to the delivery of feedback, or that the feedback source is not sufficiently knowledgeable to provide feedback. Second, the receiver may object to the actual content of feedback. Such considerations highlight the need to create relationships and expectations that facilitate the acceptance of feedback. Claiborn and Goodyear described two features of an optimal expectational set: 1) the receiver's interactions with the feedback source will result in feedback; 2) the feedback is intended to be as unbiased as possible, tailored to the receiver's goals, and delivered in a climate of free choice (i.e., the receiver may accept, partially accept, or reject the feedback once it has been received). Collaborative relationships appear to be the most likely to facilitate feedback exchange.

Feedback Setting

The reception and effectiveness of feedback interventions are strongly influenced by situational variables. These include factors related to the task at hand, receiver goals regarding the task, the consequences of positive or negative feedback, and the format in which feedback is provided. Although numerous factors have been identified, they remain largely theoretical and will therefore be discussed in the context of the theories into which they fit.

Feedback Theories

Although few theories explicitly linked to feedback existed until recently, several involved feedback as a central component. Such theories have influenced FI research.

Law of Effect

The earliest and most influential theory regarding feedback was Thorndike's (1927) law of effect, which is analogous to operant conditioning. Negative feedback was considered to be punishing, and positive feedback to be reinforcing. Positive feedback, therefore, would "stamp in" the reinforced behavior, causing it to be emitted more frequently. As described by Thorndike, "when 'annoyingness' is attached to a frequent connection and 'satisfyingness' to a rare connection, the latter gains and the former loses until the latter becomes the habitual response" (p. 212). Given such parameters, feedback should always improve behavior by increasing the amount of desired behavior while decreasing negative behavior. The law of effect may therefore have contributed to the "positive halo" (Latham & Locke, 1991, p. 224) that surrounded FI research for many years. However, data did not support the universally positive effects of feedback. Thorndike (1913, cited in Kluger & DeNisi, 1996) acknowledged that grades (an FI) can impede learning at times. Regarding the detrimental effects of grade feedback, he stated "Its vice was its relativity [comparison to others] and indefiniteness [low level of specificity]" (p. 258). The law of effect generated much literature because it had the advantage of parsimony (Kluger & DeNisi, 1996), but ultimately is too simplistic to explain the complex interactions associated with feedback interventions.

Control Theory

Control theory (Carver & Scheier, 1981), alternately referred to as *cybernetics*, postulates two kinds of information-processing systems. The first is a system that organizes perceptual input to yield a behavioral standard, which directs future behavior. The second system regulates behavior in comparison to the standard. This occurs through a *negative-feedback-loop*, also called a “TOTE unit”. TOTE is an acronym for test-operate-test-exit. The test phase is the initial comparison of actual performance to the behavioral standard. Control theory holds that individuals are motivated to reduce the discrepancy if present, and therefore the operate phase consists of changing the existing state to reduce the discrepancy. The discrepancy is then reevaluated (test phase); if behavior is in conformity with the standard of comparison, the feedback loop is exited.

Carver and Scheier (1981) argued that self-directed attention is a necessary condition of engagement in the test phase of the negative-feedback-loop. That is, feedback will be most effective when receivers’ attention is directed to the self. This hypothesis was based in part on evidence that heightened self-attention (provoked by the presence of an audience or mirror) caused increased behavioral conformity to standards of comparison. Carver and Scheier suggested that various levels of self-focus exist, and that feedback may direct attention to the “private self” or “public self.” Different behavioral standards may become salient based on the level of self-focused attention. Therefore, feedback is most effective when the appropriate standard is made salient.

Goal Setting Theory

Latham and Locke (1991) postulated that feedback is effective only insofar as it leads one to set goals. “Feedback that does not lead to the setting of and commitment to

specific difficult goals does not increase motivation to increase one's performance" (p. 225). Goal setting is, therefore, a mediator (cause) of FI effectiveness. On the other hand, Latham and Locke noted that goal setting is not very effective without feedback; thus feedback moderates the effects of goal setting on performance. The conclusion that goals and feedback together are more effective in improving performance was supported by a meta-analysis of 33 studies (Locke & Latham, 1990). In the various studies, only 3 effects were identified in which goals or feedback individually produced performance equal to or superior than the combination of the two.

Goal setting theory, like control theory, emphasizes the importance of comparison to some objective standard. However, goal setting theory suggests that individuals are motivated to achieve goals (rather than simply to reduce the discrepancy, as in control theory):

Feedback provides information to the individual as to the degree to which the standard is being met. If performance meets or exceeds the standard, performance is typically maintained (although eventually the goal may be raised). If performance falls below the standard, subsequent improvement will occur to the degree that: (a) the individual is dissatisfied with that level of performance and, more importantly, expects to be dissatisfied with it in the future; (b) the individual has high self-efficacy, that is, confidence in her ability to improve; and (c) the individual sets a goal to improve over her past performance. (Latham & Locke, 1991, p. 226)

Latham and Locke (1991) cautioned that although positive feedback generally increases self-esteem, it does not always enhance performance, as it may denote that current

behavior is “ok” and reduce incentive to improve. Therefore, the key to effective FIs is that the individual be dissatisfied with his or her present performance, while believing that performance can be improved. A receiver with such characteristics would be led to set goals toward performance improvement.

Feedback Intervention Theory

Kluger and DeNisi (1996) made a major contribution to FI research by integrating the above theories (among others) into a specific feedback intervention theory (FIT). FIT was based on several assumptions, described here briefly.

Feedback-standard comparisons. As in control theory and goal-setting theory, FIT assumes that a basic mechanism in behavior regulation is the evaluation of and reaction to a feedback-standard comparison. Kluger and DeNisi (1996) identified four strategies individuals may use to eliminate feedback-standard discrepancies. The first is to change behavior (through increased effort or modified strategy) in order to receive positive feedback in the future. It was assumed that people would increase their effort in the presence of clear goals, high goal commitment, and high belief in eventual success. The second strategy is abandoning the standard. Abandonment is likely when the discrepancy is perceived to have a low likelihood of being eliminated through actions. The third strategy is changing the standard, rather than abandoning it altogether. Individuals may lower the standard when receiving negative feedback and alternately raise the standard when receiving positive feedback. The final strategy is to reject the feedback message. By rejecting the message, individuals effectively deny the existence of a feedback-standard gap. Research on valence suggests that individuals are more likely to reject feedback when it is negative.

Hierarchy. Based on control theory, Kluger and DeNisi (1996) assumed that goals or standards are arranged hierarchically, with goals of the self at the top. The bottom of the hierarchy consists of physical action goals (e.g., open the door). Loops that are high in the hierarchy can supervise the performance of lower level loops, such that the output of higher level loops may result in changed goals for lower level loops. Three general hierarchical levels were described. *Meta-task processes* are at the top of the hierarchy and involve goals of the self. Such processes occur above the focal task level. Examples are attention to self and affect. *Task-motivation processes* are in the middle of the hierarchy and include considerations relevant to the task at hand, such as motivation or the interpretation of feedback. Finally, *task-learning processes* are lower-level processes directly related to the details of a task.

Attention. Kluger and DeNisi (1996) suggested that attention is limited and therefore only those feedback-standard discrepancies that receive attention are engaged in the negative-feedback-loop. They stated that “attention is likely to be at one foci, but can be present simultaneously, or with quick alternations, at different levels of hierarchy and across several standards within the hierarchy” (p. 262). FIT theory holds that attention is normally directed to a moderate level of the hierarchy (somewhere between goals of the self and physical action goals).

FI effect on locus of attention. Kluger and DeNisi (1996) suggested that the crucial question in understanding feedback effects is “What does an FI do to one’s attention?” (p.259). FIT is based on the assumption that FIs command, and generally receive, considerable attention. Feedback is unlikely to be ignored because it carries serious implications for the self. Less certain, however, is what aspects of feedback will

receive attention. Kluger and DeNisi hypothesized that FIs may have differential effects at various levels of the goal hierarchy.

FIT propositions. The assumptions of FIT were integrated with existing research on feedback moderators into five predictions regarding the effects of feedback. Kluger and DeNisi's (1996) first proposition was that FI effects on performance are attenuated by cues that direct attention to meta-task processes. Such cues include normative FIs, person-mediated FIs (as opposed to computer-mediated), FIs designed to discourage or praise the receiver, and cues that may be perceived as a threat to the self. All such cues would be expected to direct the receiver's locus of attention to personal concerns unrelated to the task at hand. Furthermore, such cues may induce performance-debilitating mood states (e.g., anxiety).

In contrast, FIs effects on performance were predicted to be augmented by cues that direct attention to task-motivation or task-learning processes. For example, velocity feedback directs attention to the motivational level by indicating changes in performance related to the task. Feedback that specifies a correct solution to a problem or situation directs attention to task-learning. Both such cues were expected to increase the effectiveness of feedback.

The third proposition of FIT is that in the absence of learning cues, FI effects would be more positive as fewer cognitive resources were needed for performance of the specific task. Kluger and DeNisi (1996) suggested that "when performance is heavily dependent on cognitive resources, extra motivation cannot be translated into better performance" (p. 269). Tasks that are novel or difficult for a subject are more likely to be influenced by factors such as intelligence, rather than by motivation. After such tasks

have been practiced sufficiently, FI-induced motivation may have increased effects on performance.

Based on the work of Latham and Locke (1991), Kluger and DeNisi (1996) predicted that goal-setting interventions should augment the effect of FIs on performance. “To the degree that the feedback-standard gap is ambiguous, a goal-setting intervention should both remove the ambiguity and direct attention to task processes, rather than to meta-task processes” (p. 269).

The final proposition of FIT is related to receiver variables. The goals and preferences that are salient to an individual are highly dependent on personality type. For example, avoiding negative stimuli may be of great importance to individuals with low self-esteem and high anxiety. For such people, the provision of negative feedback is likely to incite a negative-feedback-loop at a higher level of the goal hierarchy (goals of the self) than it would for other individuals. Therefore, FI cues that match salient self goals of a given personality type were predicted to direct attention to meta-task processes and debilitate performance.

Support for FIT propositions. Kluger and DeNisi (1996) identified 36 feedback cues related to FIT propositions. The average effect of each cue on the overall outcome of FIs was examined through meta-analysis. The first two propositions received the greatest empirical support, while the others were more weakly supported. Specifically, FIs designed to discourage (thereby directing attention to the meta-task level) attenuated the effectiveness of feedback. Velocity FIs, computerized FI delivery, and FIs containing correct solutions (all assumed to direct attention to task-motivational or task-learning levels) each augmented FI effectiveness. An unpredicted finding was that FIs with

frequent messages augmented FI effects. The latter finding was consistent with some previous literature (e.g., Ilgen, Fisher, & Taylor, 1979).

Contextualized Feedback Intervention Theory

Sapyta, Riemer, and Bickman (2005) incorporated extant FI research into a theory specific to the context of providing feedback about client health status to clinicians, which they called contextualized feedback intervention theory (CFIT). CFIT largely shares important tenets with previous feedback theories, with specific details and hypotheses related to clinicians as receivers. A basic assumption of CFIT is that clinicians are self-determined in their learning. Therefore, rather than using external pressure to effect behavior change, the goal of CFIT is provision of feedback as a means of enhancing the self-regulation process. CFIT seeks to manipulate feedback-relevant factors so as to maximize the degree to which feedback is received, understood, and incorporated.

Sapyta et al. (2005) noted that high goal commitment is essential to FI effectiveness. CFIT borrowed from goal-setting theory in holding that in order for clinicians to be motivated to achieve a goal (e.g., help my client feel better), the goal must be not only attractive but likely to be achievable. Sapyta and colleagues stated that support from a clinical supervisor can have a positive influence on clinicians' goal commitment by providing skills toward goal achievement.

Consistent with other FI theories, CFIT emphasizes that “clinicians also need to be aware that a goal has not been accomplished. This is the function of feedback” (Sapyta, Riemer, & Bickman, 2005, p. 150). Citing cognitive dissonance theory (Aronson, 1999), Sapyta and colleagues stated that the contradiction between what one

wants to accomplish and what one has actually accomplished creates psychological discomfort and therefore motivates change. Clinicians have several possible methods of reducing dissonance including reducing commitment to the goal or attributing the negative feedback to factors that are external (e.g., the amount of paperwork) or impossible to change (e.g., lack of innate talent). Therefore, in order for clinicians to implement behavior change as a consequence of FI, they must remain committed to a target goal, accept personal responsibility for failure to meet the goal, and believe that they have some control over the eventual achievement of the goal.

Sapyta and colleagues (2005) noted that changing clinician behavior does not automatically lead to improve outcomes: “It may be necessary to supplement the feedback message with a directive intervention, such as providing norms and benchmarks for performance and formative feedback” (p. 151). Sapyta and colleagues considered the type of feedback provided by the OQ-45 to be mainly descriptive, in that it describes the progress of the client over the course of treatment as outside the normal range. However, it is apparent that such feedback will generally be interpreted as evaluative; that is, clinicians receiving the message that a client’s progress is slower than normal are likely to consider the feedback negative. Sapyta et al. noted that in the context of clinical settings, negative feedback seems to have better effects on behavior change than positive feedback. However, they cautioned that feedback sign may motivate individuals differently depending on personality characteristics.

CFIT holds that feedback should be delivered as promptly as possible after data collection to allow clinicians to perceive the connection between the feedback and their behavior. Feedback should be as cognitively simple as possible so that it is rapidly

understood and processed. Saptya et al. (2005) suggested that feedback should be delivered frequently so that changes can be regularly monitored and corrective action can be taken when required. This hypothesis is a core principle of the OQ-45 feedback program. Empirical data have largely supported such practice. Although it appears that frequent feedback is superior to infrequent feedback, individuals may feel that they are being controlled by feedback if it is given too frequently (Ilgen, Fisher, & Taylor, 1979). Alder (2007) found that among undergraduate students, desire to improve performance was maximized by giving individuals control over the frequency with which they received feedback.

Several factors and theories related to feedback, specifically feedback interventions, have been summarized. Given this background, the application of feedback within a patient-focused research paradigm is now discussed.

Patient-focused Research

Types of Outcome Research

Historically, investigations of the benefits of psychotherapy have fallen into one of two categories: *efficacy studies* or *effectiveness studies*. Distinctions between the two classes of outcome research became especially important during the 1990's with the developing movement toward empirically-supported treatments, which are generally identified through efficacy research (Garfield, 1996). Both methodologies have important advantages and drawbacks in relation to the other, as discussed below.

Efficacy Research

Efficacy studies seek to maximize internal validity through a high degree of experimental control. The prototype is the randomized clinical trial. Seligman (1995) identified eight characteristics of the “ideal” efficacy study: (1) random assignment to treatment and control conditions; (2) rigorous controls including credible placebo; (3) manualized treatments with high therapist fidelity; (4) patients are seen for a fixed number of sessions; (5) target outcomes are well operationalized; (6) blind rating of outcome; (7) patients meet criteria for a single diagnosis, with comorbidity excluded; and (8) patients receive follow-up assessment. The goal of such elaborate controls is to rule out alternative explanations for observed differences between groups and to allow for causal attribution of the treatment as the mechanism of change.

Despite the high degree of internal validity ensured by efficacy research methodology, several limitations have been noted (Garfield, 1996; Goldfried & Wolfe, 1998; Seligman, 1995). Of primary concern for many authors is a lack of external validity. Goldfried and Wolfe (1998) cautioned that “no amount of concern for methodological rigor—internal validity—can substitute for a research program that will allow us to generalize to clinical reality—external validity” (p. 144). Highly-selected patient and therapist samples, a fixed number of sessions, the use of treatment manuals, and overly-specific outcome criteria have all been identified as factors which limit the generalizability of efficacy research to other clinical settings.

Effectiveness Research

In contrast to efficacy studies, effectiveness studies emphasize the external validity of the experimental design in order to demonstrate that the treatment works in

clinical settings (Lambert & Ogles, 2004). In order to maximize generalizability, effectiveness studies are conducted in naturalistic settings, typically with a minimal amount of controls. However, Lambert and Ogles noted that clinically-representative studies are highly variable in terms of internal validity.

An example of an effectiveness study with minimal experimental control is the highly controversial *Consumer Reports* study (1995, November), which utilized a survey method and retrospective report. Approximately 7,000 individuals who had received mental health services rated the degree to which they benefited from therapy. Therapy was found to be beneficial in general terms, with no differences in outcome between respondents who received psychotherapy alone and those who received therapy plus medication. However, the report generated a significant amount of criticism among psychologists due to its methodological shortcomings (Lambert & Ogles, 2004). Martin E. P. Seligman (1995), a consultant to the project, identified several broad limitations of such research: (1) possible sampling bias due to selective responding; (2) no control groups; (3) subjective self-report as outcome measures; (4) lack of blindness; (5) outcome criteria that were too broad and vague; (6) retrospective observation; and (7) nonrandom assignment. The majority of these critiques can be applied to all effectiveness research. However, effectiveness research has become an important counterpart to efficacy studies (Newman & Tejada, 1996).

Patient-Focused Research

Howard, Moras, Brill, Martinovich, and Lutz (1996) noted that three fundamental questions can be asked about a given psychological treatment: (1) does it work under experimental conditions? (2) does it work in practice? and (3) is it working for this

patient? Efficacy and effectiveness research address the first two questions by comparing mean responses of groups receiving an experimental treatment and a competing treatment or control condition. Howard and colleagues described the application of such techniques as *treatment-focused research*. However, neither method addresses the third question, which is often the greatest concern to the practicing clinician:

In this context, it is not sufficient for the practitioner to know that a particular treatment can work (efficacy) or does work (effectiveness) on average.... The practitioner needs to know what treatment is likely to work for a particular individual and then whether the selected treatment is working for this patient. Thus, from the clinician's perspective, one critically important task of research is to provide valid methods for systematically evaluating a patient's condition in terms of the ongoing response of that condition during the course of treatment. (Howard et al., 1996, p. 1060)

Howard and colleagues (1996) described systematic efforts to address ideographic treatment response as *patient-focused research*. Patient-focused research is "concerned with the monitoring of an individual's progress over the course of treatment and the feedback of this information to the practitioner" (p. 1059).

Applications of Patient-Focused Research

Patient-focused research supplements efficacy and effectiveness research in demonstrating that treatment is effective on average (Lutz, 2003). However, patient-focused researchers have not been concerned with the comparison of treatments. Rather, they have addressed overarching questions regarding the process of psychotherapy (without specific consideration of patient characteristics or types of treatment). Lutz

suggested that patient-focused research has the potential to reduce the scientist-practitioner gap long bemoaned by psychologists, noting five specific usages: (1) evaluation of the expected effectiveness of treatment; (2) grouping of patients on the basis of their expected response to treatment and identification of clinical characteristics of such groups; (3) exploration of the characteristics of patients whose response to treatment deviates from expectation (e.g., fast responders and nonresponders); (4) comparison of providers or provider groups while adjusting for the expected treatment response of patients; (5) comparison of treatments in terms of the process of outcome as well as the final outcome.

Modeling of Response to Psychotherapy

Patient-focused researchers initially concerned themselves with modeling patients' average response to psychotherapy and determining the number of sessions (dosage) needed for recovery. Howard, Kopta, Krause, and Orlinsky (1986) found a dose-effect relationship demonstrating a lawful linear relationship between the log of the number of sessions and the normalized probability of patient improvement. This "dosage model" suggests that change occurs relatively quickly during the first sessions, and as treatment progresses, more and more sessions are needed to produce incremental changes in the desired direction. A phase model was hypothesized to account for the observed dose-effect relationship. Howard, Lueger, Maling, and Martinovich (1993) found support for a three-phase model in which patients experience sequential improvement in subjective well-being, symptomatology, and enhancement in functioning. The three phases were labeled *remoralization*, *remediation*, and *rehabilitation*. Howard and colleagues (1993) found that change occurs more slowly in each progressive phase.

In addition to describing the model of change, patient-focused research has been used to estimate the average number of sessions necessary to produce meaningful change in psychotherapy patients. Anderson and Lambert (2001), using survival analysis of 72 outpatients at a university counseling clinic, found that 11 sessions of therapy were necessary before 50% of the clientele would attain clinically significant change. Patients who were severely disturbed at intake needed 8 more sessions on average to attain change. Such data, although preliminary, has the potential to be very useful for clinicians and third-party decision makers in the era of managed care. Such data is likely to be beneficial in estimating the length of treatment required in naturalistic settings, as compared to the number of sessions utilized in clinical trials (efficacy research).

Haas, Hill, Lambert, and Morrell (2002) used patient-focused methods to examine whether “early-responders” to therapy maintained treatment gains. Early responders were identified by examining the difference between actual change scores and expected responses. Patients who demonstrated actual change much greater than expected within the first three sessions were identified as early responders. Haas and colleagues found that such patients demonstrated fewer symptoms at termination and follow-up. The authors concluded that early response to treatment is a significant predictor of positive long-term outcome.

Prediction of Treatment Response

A related line of inquiry is the prediction of treatment response for individual patients. Howard, Lutz, and colleagues (Howard et al., 1996; Lutz et al., 2001) used hierarchical linear modeling to develop ideographic expected-response curves for each patient, based on the dosage and phase models of recovery and 18 characteristics of the

patient (including severity of disturbance, chronicity of the problem, and attitude toward treatment). Lutz, Leach, Barkham, Lucock, Stiles, and Evans (2005) refined the method by using a “nearest neighbors” approach. In the nearest-neighbors approach, forecasts of a patient’s rate of change are computed based on a sample of previous patients (10 to 50) that most closely resembled the patient based on several characteristics. Lutz and colleagues found the nearest-neighbor approach superior in predicting patients’ rates of change.

Lambert and colleagues have developed similar techniques based on OQ-45 data (described in more detail below). Haas and colleagues’ (2002) finding that early responders maintained gains was important in the formulation of the OQ-45 feedback system, which incorporates early response to treatment into its predictive algorithms with the goal of identifying patients at risk for treatment failure.

Recent research has called into question the hypothesis that early response is predictive of long-term outcome. Percevic, Lambert, and Kordy (2006) examined the dependence and homogeneity of change rates (based on OQ-45 data) for 608 patients at 3 clinics. Results suggested that the dependence of patient treatment responses across time (i.e., early rate of change predicts later rate) could not be taken for granted. Additionally, a log-linear model, as suggested by the phase model, did not fit patients’ change patterns any better than a linear model. A “random walk” model has been suggested as an alternative to the phase model (Percevic, Lambert, & Kordy, 2004). The random walk model is based on findings that symptom courses of psychotherapy patients were best represented as linear trends toward improvement with residual fluctuation (Percevic, 2002, cited in Percevic, Lambert, & Kordy, 2004).

Comparisons among Providers and Clinicians

Patient-focused research methods allow for a comparison of outcomes among individual therapists while adjusting for patient severity at intake. Although therapists are understandably resistant to the systematic comparison of their outcomes to those of their peers, such research may have important implications given that therapist effects account for an estimated 8% of the variability in therapy outcomes (Wampold, 2006). Therapist characteristics, therefore, are at least as important in determining outcomes as are specific techniques employed (estimates range from 1% to 8% of variance accounted for) or the therapeutic alliance (5% to 10% of variance; Norcross & Lambert, 2006; Wampold, 2006).

Okiishi and colleagues (Okiishi et al., 2003; Okiishi et al., 2006) found a normal distribution of patient outcome across therapists at a university counseling center. In general, therapists in the second and third quartiles, in terms of patient outcome, could not be distinguished from one another. However, comparisons between therapists in the top and bottom quartiles of effectiveness revealed significant differences. The top-rated therapists' patients had an improved or recovered rate of 44%, with a deterioration rate of 5%. In contrast, patients of therapists in the bottom quartile had an improved or recovered rate of 28% and a deterioration rate of 11%. Identification of those therapists with excellent and sub-par outcomes would allow organizations to increase the effectiveness of their services by increasing the proportion of referrals given to top-rated therapists.

Some managed care organizations have already begun to utilize such information to improve treatment outcomes. Brown and Jones (2005) described PacifiCare Behavioral Health's (PBH) program, which utilizes an abbreviated version of the OQ-45, the

Outcome Questionnaire-30 (OQ-30; Lambert, Hatfield, et al., 2001). The OQ-30 is administered at the first, third, and fifth sessions, and every five sessions thereafter. The data provided is used by PBH to certify additional sessions, track overall outcomes, and provide feedback to clinicians. Four times yearly, clinicians receive a letter summarizing their patients' results as compared to the overall patient database. Such data may also be used to recognize and reward those clinicians who routinely demonstrate high efficacy.

Asay, Lambert, Gregersen, and Goates (2002) described how patient-focused research can be used by private practitioners. They suggested that such therapists may use such data to enhance effectiveness, reduce patient dropout, and increase patient satisfaction. Such methods allow a private practitioner to compare the progress of his or her own patients to that of a national sample. Additionally, private practitioners may develop local norms by examining data from their own previous patients. Practitioners may select measurement instruments based on their own theoretical orientations. Stricker (2002) identified patient-focused research as exemplifying the oft-emphasized and rarely-realized scientist-practitioner (S-P) model: "It [patient-focused research] is a direct application of science to idiographic practice, and may be the best example of the aspirations of the S-P model" (p. 1280).

Patient-Focused Research as a Means of Improving Outcomes

As noted previously, a unique aspect of patient-focused outcome research is its ability to provide clinicians with real-time feedback, thereby providing an empirical basis for treatment decisions. Accumulating research has supported the effectiveness of feedback to therapists in improving psychotherapy outcomes. It is somewhat ironic that

the effectiveness of patient-focused research as a means of improving outcomes is necessarily evaluated through randomized controlled trial methodology.

Brodey, Cuffel, McCulloch, Tani, Maruish, Brody, and Unutzer (2005) randomly assigned 1374 patients in a managed behavioral healthcare system to feedback and control conditions. All patients completed 11 items from the Symptom Checklist-90 (SCL-90; Derogatis, 1983) at intake and 6 weeks later. Feedback regarding the results was only provided to therapists of patients in the feedback condition. Patients of clinicians who received feedback showed significantly greater improvement in total symptoms than patients whose clinicians did not receive feedback. Such a result is impressive given the minimal nature of the feedback data and the small number of administrations.

Slade, McCrone, Kuipers, Leese, Cahill, Parabiaghi, and colleagues (2006) administered several outcome and alliance measures to therapists and patients at a community outpatient clinic in London, providing results to a randomized half of therapists and patients. The assessment measures were completed monthly. Slade and colleagues hypothesized that patients in the feedback condition would demonstrate greater symptom reduction at termination; the hypothesis was not supported. However, they observed that patients in the feedback group averaged significantly fewer days as psychiatric inpatients over the course of the study (3.5 as compared to 16.4 in the control group). They concluded that the reduced inpatient care usage made the feedback a cost-effective intervention.

Percevic (2002; cited in Percevic, Lambert, & Kordy, 2004) provided feedback based on the Stuttgart-Heidelberg quality assurance model (Kordy, Hannover, & Richard,

2001) to therapists of a randomly-selected group of patients, while providing no feedback on other patients. Patients in the feedback condition evidenced reduced mean length of therapy until discharge at a clinically significant improved condition (46 days as compared to 57 days without feedback), suggesting that the therapy enhanced by feedback to therapists was more effective.

The Brigham Young University group, using the OQ-45 feedback system, was the first to demonstrate increased effectiveness as a result of feedback to therapists. They have replicated the finding several times. Given that the present study will utilize the OQ-45 system as a basis for examining therapists' responses to feedback, the measure and associated feedback reports are now described in detail.

The Outcome Questionnaire-45

The OQ-45 (Lambert, Morton, Hatfield, et al., 2004) is a widely-used 45-item self-report questionnaire that measures general psychological distress and dysfunction. Patients rate each of the items (e.g., "I feel hopeless about the future") on a 5-point Likert scale ranging from 0 (*never true*) to 4 (*almost always*), in regard to the prior week. The 45 items yield a Total Score (ranging from 0 to 180, with higher scores indicating poorer functioning) as well as three domain scores: Symptom Distress, Interpersonal Relations, and Social Role. The domain distinctions are based on Lambert's (1983) conceptualization of patient progress in psychotherapy. He suggested that there are three dimensions of interest: 1) subjective discomfort, 2) the quality of interpersonal relationships, and 3) social role performance. Despite its theoretical underpinnings, there is insufficient empirical support for the three-factor structure of the OQ-45 (de Jong,

Nugter, Polak, et al., 2007). Confirmatory factor analysis revealed an inadequate fit for the three-factor model (Mueller, Lambert, & Burlingame, 1998). High intercorrelations among the three subscales suggest that they may represent variance of a single factor, general distress (Umphress, Lambert, Smart, et al., 1997).

Psychometric Properties

The OQ-45 has been found to have adequate test-retest reliability at three weeks (.84 for the Total Score, .78 to .82 for domain scores), with test-retest reliability decreasing over time (Lambert, Burlingame, Umphress, et al., 1996). Internal consistency estimates are good, ranging from .90 to .93 for the Total Score (Lambert et al., 1996; Vermeersch, Whipple, Lambert, et al., 2004). Umphress, Lambert, Smart, Barlow, and Clouse (1997) found that psychiatric patients scored higher on the OQ-45 Total Score and Symptom Distress scale than did nonpatient samples; among patients, those with DSM-III diagnoses received higher scores than patients with V-code diagnoses, providing evidence for the construct validity of the OQ-45 as a measure of psychiatric distress. The same authors also found concurrent validity coefficients with a variety of self-report scales (e.g., Beck Depression Inventory, State-Trait Anxiety Inventory) ranging from 0.53 to 0.86.

Vermeersch and associates (Vermeersch, Lambert, & Burlingame, 2000; Vermeersch et al., 2004) have found the OQ-45 Total Score and all subscales to be sensitive in reflecting change experienced by patients following treatment. In addition, 34 of the 45 individual items demonstrated sensitivity to treatment effects.

Clinical Significance and Reliable Change

Lambert, Morton, Hatfield, and colleagues (2004) derived a clinical cutoff for the OQ-45 Total Score using methodology developed by Jacobson and Truax (1991).

Although other methods of calculating clinical significance are available, the Jacobson and Truax formula was chosen because it is the most commonly used method (Ogles, Lunnen, & Bonesteel, 2001). Speer and Greenbaum (1995) performed a comparative analysis of several existing methods and endorsed the Jacobson and Truax approach due to its unambiguous calculation and supporting literature base. The cutoff value, described by Jacobson and Truax as *Cutoff C*, represents a weighted midpoint between the means of a functional and dysfunctional sample. The clinical cutoff for the OQ-45 Total Score is 63/64.

A reliable change index (RCI) was also calculated based on Jacobson and Truax's (1991) formulae. The RCI represents the magnitude of change in any direction necessary to be considered reliable (i.e., not due to chance variation). The RCI for the OQ-45 Total Score is 14. Patients whose Total Score decreases by 14 or more points are considered *reliably improved*, whereas patients with an increase of 14 or more are classified as *reliably worsened* or *deteriorated*. In order for patients to qualify as *recovered* based on the OQ-45, they must have begun therapy in the dysfunctional range (64 or above), terminated in the functional range (63 or below), and demonstrated reliable improvement. Patients whose Total Scores do not change in any direction by at least 14 points are classified as having made *no change*.

Beckstead, Hatch, Lambert, Eggett, Goates, and Vermeersch (2003) examined the degree to which classifications for clinical significance based on the OQ-45 were

consistent with classifications based on other common outcome measures (e.g., Symptom Checklist-90-R, Derogatis, 1983; Quality of Life Inventory, Frisch et al., 1992; Client Satisfaction Questionnaire-8, Larson et al., 1979). They reported that the average correspondence among measure classifications of patients in the functional or dysfunctional range was 85%. Similarly, agreement for classification of patients as meeting criteria for clinically significant change among the measures averaged 65%. These findings suggest that classification into categories of clinical significance is similar across outcome measures, but varies as a result of the instrument utilized. Beckstead and colleagues reported that the OQ-45 was most similar to the Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1983).

OQ-Analyst Feedback

Patient responses on the OQ-45 are used to generate feedback for therapists and patients via the *OQ-Analyst* software program. Such feedback includes a visual line-graph, color-coded feedback, written messages, and information regarding clinically significant change, clinical cutoffs, and critical items.

Decision Rules

The *OQ-Analyst* software provides feedback based on either rationally-derived or empirically-derived decision rules. The rationally-derived decision rules (described in Lambert et al., 2002b) use cutoffs based on patient intake score, number of sessions completed, and total change in OQ-45 score from intake. The empirically-derived decision rules are described below. Three studies (Lambert et al., 2002b; Lutz et al., 2006; Spielmans, Masters, & Lambert, 2006) comparing the two methods have found the

empirical method to be superior in overall predictive accuracy. At this time the empirical decision rules are recommended (Michael J. Lambert, personal communication, 2007).

The empirical decision rules were generated by Finch, Lambert, and Schaalje (2001), who used data from over 11,000 patients to develop expected recovery curves for the OQ-45. The sample included patients from graduate training clinics, counseling centers, employee assistance programs, and managed behavioral health care settings. Each patient in the sample had completed a course of therapy with at least two administrations of the OQ-45. The aggregate data of the entire sample showed decelerating recovery curves similar to those described by Howard et al. (1986). Finch and colleagues then divided the sample into 50 distinct groups based on intake score. Each group represented approximately 2% of the sample and was composed of at least 220 patients. Some groups represented one discrete score on the OQ-45, whereas groups at the extremes of the scoring range included patients with a range of intake scores. For each group, hierarchical linear modeling was used to generate expected recovery curves. The expected recovery curves were based on mean estimate scores on the OQ-45 at sessions 1 through 20 for the corresponding group.

Following the development of expected recovery curves, Finch and colleagues (2001) derived tolerance intervals around each curve. The tolerance intervals were based on the expected mean OQ-45 score at each session. For example, a two-tailed 80% confidence interval around the mean expected score allowed for identification of the 10% percent of clients that were making the least progress, and therefore might be expected to deteriorate or drop out of therapy (based on estimates that approximately 10% of patients become worse during treatment, Lambert & Ogles, 2004). Similarly, a two-tailed 68%

tolerance interval was calculated for each expected mean by session number. This provided a cutoff for patients whose rate of change was at least 1 standard deviation above or below the mean.

Color-Coded Feedback

The cutoffs described above form the decision rules for feedback. Therapists of patients scoring above the 80% tolerance interval receive a red warning and therapists of patients scoring above the 68% tolerance interval receive a yellow warning. Therapists of patients scoring below the 68% cutoff receive white-coded feedback, and therapists of patients who score in the middle 68% of scores, based on the sample, receive green-coded feedback (denoting an expected rate of recovery).

Written Messages

Each color of feedback is accompanied by a written message generated by *OQ-Analyst* software. Sample messages include the following:.

White feedback—‘The client is functioning in the normal range. Consider termination.’

Green feedback—‘The rate of change the client is making is in the adequate range. No change in the treatment plan is recommended.’

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

Red feedback—‘The client is not making the expected level of progress. The chances are that 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. Consideration should also be given to presenting this client at case conference. The client’s readiness for change may need to be re-assessed.’ (Lambert et al., 2002b, p. 153)

Accuracy of Prediction

As noted previously, Lambert and colleagues have suggested that accurate prediction of poor outcomes is essential to the effectiveness of feedback interventions with the OQ-45. Patients who receive yellow or red feedback at any time during treatment are considered signal-alarms and are predicted to deteriorate (operationalized by a demonstrated increase of 14 points or more on the OQ-45 from intake to termination). Several studies examining the predictive accuracy of the OQ-45 have found overall hit rates (percentage of all patients correctly predicted) ranging from .68 to .83 for the empirical decision rules (Ellsworth, Lambert, & Johnson, 2006; Lambert et al., 2002b; Lutz et al., 2006; Spielmans, Masters, & Lambert, 2006). The average sensitivity of the OQ-45 in correctly identifying patients who deteriorate is approximately .88 (Lambert, 2007). That is, if 100 patients deteriorate over the course of treatment, the OQ-45 will identify 88 of them before termination. The excellent sensitivity of the empirical method comes at the expense of specificity (approximately 0.82), as the OQ-45 has a moderate rate of “false alarms.” Approximately 18% of patients who did not deteriorate were identified as signal-alarm cases. Although such patients did not deteriorate as predicted, they were found in two studies to be less likely than the other patients (who were not identified as alarm cases) to evidence reliable improvement (Hannon et al., 2005; Lambert et al., 2002b).

Lambert and colleagues (2002b) have argued that the real-world cost of false alarms is low in mental health practice, as compared to medical fields, where a false positive may result in intrusive procedures (such as surgery or medication). The largest potential problem with over-identification of signal-alarm cases is that therapists may

grow weary of frequent warning feedback (Ellsworth, Lambert, & Johnson, 2006). In previous studies, the empirical method generally labeled 22% to 24% of patients in university counseling centers as signal-alarm cases. This number was higher (around 50%) in a hospital-based outpatient clinic (Hawkins et al., 2004).

The accuracy of OQ-45 feedback may also be conceptualized in terms of positive and negative predictive power. Positive predictive power refers to the proportion of patients who receive signal alarm feedback and actually deteriorate. Ellsworth, Lambert, and Johnson (2006) found the positive predictive power of the OQ-45 to be .269, which is due to the number of false positives generated by the empirical decision rules. The negative predictive power, referring to the proportion of those predicted not to deteriorate who in fact did not, is much higher. Ellsworth and colleagues found the negative predictive power of the OQ-45 to be .988. In other words, patients who do not receive yellow or red warnings at any point during therapy are very unlikely to have deteriorated at termination.

Hannan, Lambert, Harmon, Nielsen, Smart, Shimokawa, and Sutton (2005) compared the empirical prediction system to the clinical judgment of 48 therapists (trainees and professionals). Therapists were asked for three consecutive weeks to predict their patients' final status following treatment (recovered, improved but not recovered, no change, or deteriorated) and to rate patients' improvement up to that point in therapy. Of the 332 clients in the study, 26 were deteriorated at termination. Therapists predicted only 3 patients to deteriorate, 1 of whom did deteriorate (as measured by change in OQ-45 score). In contrast, the empirical method based on OQ-45 results produced warnings for 55 patients, 20 of whom did in fact deteriorate. Based on the results, it appears that

overall hit rates between therapists and statistical prediction may have been similar (due to the number of false alarms generated by the empirical method), but the statistical predictive method was much more likely to identify early in the course of treatment those patients at risk for no benefit from treatment. It bears noting that final outcome in the Hannan et al. study was measured by the OQ-45, increasing the probability that those patients with unusually high OQ-45 scores at some point in therapy would be rated by the same instrument as deteriorated at termination. The results would be more convincing had a concurrent outcome criterion been used. However, the superior accuracy of decisions based on actuarial data over clinical judgment is consistent with a long history of similar research conclusions (e.g., Ægisdottir et al., 2006; Dawes, Faust, & Meehl, 1989; Faust, 1989; Grove & Meehl, 1996; Grove et al., 2000; Meehl, 1956).

Feedback Interventions with the OQ-45

Effects on Outcome and Attendance

Lambert, Whipple, Smart, Vermeersch, Nielsen, and Hawkins (2001) noted that although several feedback systems (e.g., Beutler, 2001; Kordy, Hannover, & Richard, 2001; Lueger et al., 2001; Miller, Duncan, Sorrell, & Brown, 2005; reviewed in Beutler, 2001) had been developed and described as clinically valuable, none of the systems had been empirically tested for their effect on outcome. In order to determine the effect of feedback on patient progress, Lambert and colleagues randomly assigned 609 patients to groups in which their therapist received feedback based on the OQ-45 or did not receive feedback. All patients completed the measure at each session. Lambert et al. hypothesized that patients who demonstrated poor initial progress and whose therapists

received feedback would evidence better outcomes than similar patients whose therapists did not receive feedback. They also predicted that patients whose therapist received feedback would evidence more cost-effective usage of therapy sessions than patients in the control group.

The feedback generated by Lambert, Whipple, and colleagues (2001) consisted of a graph with the patient's OQ-45 score at each session, a colored dot, and a statement corresponding to the dot. The decision rules for dot color were based on patient intake score, number of sessions completed, and total change in OQ-45 score from intake. These variables were selected based on a previous finding that initial level of severity plus change from pretreatment through session 3 accounted for 40% of the variance in final outcome status among individual therapy patients (Brown & Lambert, 1998, cited in Lambert, Whipple, et al., 2001). Lambert and colleagues reported that information about early response to treatment and the dose-response relationship were also considered. The resulting algorithms were rationally-derived (based on research findings and theory). Therapists whose patients were making adequate or expected progress received green or white colored dots as feedback, respectively. Yellow dots represented less than adequate progress, and red dots signaled that a patient was likely to drop out of therapy or to deteriorate. Feedback was generated after a patient completed the OQ-45 and a session of therapy (i.e., therapists received feedback before the next session).

Lambert, Whipple, et al. (2001) found that among patients who qualified for a yellow or red warning dot during the course of therapy (classified as not-on-track, NOT), those whose therapists received feedback (NOT-Fb; n = 35) had lower OQ-45 scores at termination than the no-feedback control group (NOT-NFb; n = 31). The effect size for

this finding was 0.44. No differences in outcome were found between feedback and no-feedback groups for clients who did not receive yellow or red warnings (on-track, OT). Lambert et al. found an interaction effect in which NOT-Fb patients received more sessions than NOT-NFb patients; OT patients in the feedback condition (OT-Fb) received significantly fewer sessions than OT patients in the no-feedback condition (OT-NFb). Lambert and colleagues interpreted this finding as suggesting that resources were allocated more efficiently when therapists received feedback (i.e., patients terminated more quickly upon recovery and were kept longer when more therapy sessions were required).

Lambert, Whipple, and colleagues (2001) noted that although the observed differences in outcome for the NOT-Fb and NOT-NFb groups reached statistical significance, the potential clinical importance was limited by the fact that 75% of patients in the NOT-Fb condition were classified as “deteriorated” or “no change” at termination. They suggested that the benefit of feedback systems may be increased by strengthening the feedback intervention.

Lambert, Whipple, Vermeersch, Smart, Hawkins, Nielsen, and colleagues (2002) used the same methodology as the previously described study in an attempt to replicate the finding that feedback to therapists with the OQ-45 resulted in improved outcomes for patients predicted to have a poor response to treatment. In addition, they examined two new questions: 1) was the timing of signal alarm feedback (early versus later in therapy) associated with outcome? and 2) do trainees profit more from feedback than clinicians? The study sample consisted of 1020 patients in the same university counseling center. Each patient completed at least two sessions of therapy with corresponding OQ-45

administrations. Assignment to feedback or no-feedback conditions in the study was not random; rather, all students attending therapy during the Summer term or Fall semester at the university were assigned to the no-feedback condition, and students attending during the Winter semester or Spring term were placed in the feedback condition. The two groups differed in mean intake score on the OQ-45, with slightly higher scores for patients in the no-feedback condition.

The feedback system used in Lambert, Whipple, Vermeersch, et al. (2002) was identical to that described in the earlier study, including graphs, colored dots, and corresponding messages. Therapists whose patients reached a yellow- or red-level warning were also given a tracking form to record actions taken after the alarm was given. Lambert and colleagues considered the tracking form to be part of the intervention, as it suggested various actions to be taken (e.g., referral for medication, reconceptualization of the problem, etc.).

As in the original study, Lambert, Whipple, Vermeersch, et al. (2002) found that patients in the NOT-Fb group achieved significantly better outcomes as compared to the NOT-NFb group, as measured by raw OQ-45 score change and the percentage of patients achieving clinically significant change. The effect size for this finding was 0.40. For patients predicted to have a positive response to treatment (OT), there was no difference between groups in outcome or in number of sessions attended. The latter finding differed from the results of the first study, in which patients in the OT-Fb group achieved equivalent outcomes in fewer sessions than the OT-NFb group.

In regard to the impact of the timing of signal-alarm feedback, Lambert, Whipple, Vermeersch, and colleagues (2002) found that there was no difference in mean outcomes

between patients who qualified for their first warning (red or yellow feedback) before or after the fifth treatment session. Finally, Lambert et al. found that trainee clinicians benefited less from feedback than did experienced clinicians. They suggested that experienced therapists may have a greater repertoire of interventions to apply when patients are not progressing as expected. They suggested that it would be important to strengthen the feedback intervention by providing structured methods for clinicians to deal with non-responding patients.

Clinical Support Tools

In an attempt to strengthen the feedback intervention used in the previous studies, Whipple, Lambert, Vermeersch, Smart, Nielsen, and Hawkins (2003) added clinical support tools (CSTs) to the feedback delivered in the previous studies. The CSTs represented a hierarchical problem-solving strategy for therapists to use with patients who were not responding to treatment as expected. The first CST was a measure of therapeutic alliance. If a therapist found that the alliance was problematic, he or she was directed to a therapeutic alliance interventions handout. The next CST was a measure of readiness for change, with a corresponding intervention handout. Third was a measure of patient social support resources, again accompanied by an intervention handout. The final CSTs directed therapists to reassess the diagnostic formulation and to consider psychiatric consultation.

Whipple et al. (2003) randomly assigned 981 patients to feedback or no-feedback conditions. For analyses, the groups were sub-divided based on whether they received a red or yellow alarm during the course of treatment (NOT) or received only green and white coded feedback (OT). These groups were formed based on clinical characteristics

and were not randomly assigned. When patients in the feedback condition received their first yellow or red feedback, the therapist was given the option of using the CSTs. Therefore, assignment to CST or non-CST condition was not random, but rather reflected therapists' preferences. As in Lambert et al. (2002), a tracking form was given to therapists as soon as patients were identified as NOT.

Whipple and colleagues (2003) found that signal alarm patients whose therapists received feedback and used the CSTs (NOT-Fb+CST) improved significantly more than patients in the NOT-Fb group whose therapists did not use the tools. Patients in the NOT-Fb (no CSTs) group did, however, improve significantly more than NOT patients whose therapists did not receive feedback. The difference between NOT-Fb+CST and NOT-NFb groups had an observed effect size of 0.70, and the effect size of the difference between NOT-Fb and NOT-NFb groups was 0.28. Whipple and colleagues concluded that clinical support tools were beneficial, noting that further studies should randomly assign clients to CST or non-CST conditions.

Revisiting the attendance issue, Whipple and colleagues (2003) found that NOT patients in the feedback conditions (with and without CSTs) received more treatment sessions than patients in the NOT-NFb group. For patients who remained on track throughout treatment, those in the feedback conditions attended fewer sessions than those in the no-feedback condition. This interaction replicated the findings of Lambert, Whipple, et al. (2001) and suggests that the use of feedback may contribute to cost-effective use of services, in that clients who benefit quickly used fewer sessions, and more sessions were given to clients who progressed more slowly.

Feedback to Patients

Hawkins, Lambert, Vermeersch, Slade, and Tuttle (2004) sought to strengthen the impact of the feedback intervention by providing feedback to patients as well as to therapists. Based on research associations between patient characteristics, therapeutic alliance, and outcome, they hypothesized that patients who received feedback about their progress in therapy would show improved outcomes as compared to groups without feedback and with therapist feedback only. In contrast to the previous studies, Hawkins et al. collected data at a hospital-based mental health clinic. The total sample consisted of 201 patients. As expected, based upon the setting, the percentage of patients identified by the decision algorithms as signal alarms (50%) was significantly greater than in previous studies. This likely represents a more severe average level of disturbance in the hospital-based clinic.

Feedback to therapists was generated as in previous studies. Patient feedback took the form of a progress graph, colored dot, and a message to the patient. Patient messages were specific to the color of feedback received (white, green, yellow, or red) and varied depending on number of sessions received (2 to 4, 5 to 8, and 9 or greater). Therapists were instructed to present the feedback to patients at the beginning of each session and to provide opportunity for the patients to ask questions.

Hawkins et al. (2004) found that patients in the feedback conditions evidenced larger changes from pre-test to post-test on the OQ-45 than patients in the no-feedback condition. Additionally, they found that patients who received feedback along with their therapists achieved significantly greater outcomes than patients in the therapist-feedback-only group. Participants in the patient-therapist feedback groups were significantly more

likely to have an end status of reliably improved than were patients in the treatment-as-usual group. These findings were based on aggregate scores (before subdivisions into OT and NOT groups). Based on this result, the authors suggested that feedback to patients and therapists may have a more global effect than feedback to therapists alone. Group differences for the NOT groups alone did not reach statistical significance, in contrast to previous findings. The lack of significant findings in the study may have been due to a smaller sample size in comparison to previous studies. In regards to attendance, no significant differences were found in number of sessions received between the feedback and control groups.

Given that the addition of CSTs and the provision of feedback to patients had demonstrated incremental benefit over the original feedback intervention in separate studies (Hawkins et al., 2004; Whipple et al., 2003), Harmon, Lambert, Smart, Hawkins, Nielsen, Slade, and colleagues (2007) examined whether such findings were replicable. Patients at the Brigham Young University counseling center (n = 1394) were randomly assigned to therapist-feedback or patient-and-therapist-feedback conditions. These groups were further subdivided into OT and NOT groups based on treatment response, as measured by the OQ-45. Patients classified as NOT were then randomly assigned to CST or no-CST conditions, improving upon the methodology of Whipple et al. (2003). All patients classified as NOT completed CST questionnaires, but data was only provided to therapists of patients in the CST condition. No participants in the study were assigned to a treatment-as-usual condition; rather, archival data from control groups in previous studies (n = 1445) was utilized as a control. Harmon et al. hypothesized that all study groups would demonstrate better outcomes than the archival control group, that patients

in the patient-and-therapist feedback group would have better outcomes than those in the therapist-feedback group, and that patients whose therapists used CSTs would demonstrate improved outcomes over those whose therapists did not.

The CSTs used by Harmon and colleagues were the same that were used by Whipple et al. (2003). Similarly, feedback messages to therapists and patients were identical to those used in previous studies, and based on the same decision rules. Because paper-based versions of the OQ-45 were used in the study, scoring occurred after sessions and feedback was given prior to the next session.

Harmon et al. (2007) found significant differences between feedback (therapist and patient-therapist conditions) and no-feedback groups, in which patients in the feedback groups evidenced greater average symptom reduction. As in Hawkins et al. (2004), this effect was found for both OT and NOT patient groups, suggesting that feedback may be beneficial for all patients. In contrast to the Hawkins study, there was no significant difference in outcome between feedback groups: the addition of patient feedback did not increase benefit as compared to feedback for therapists only. Harmon and colleagues noted that therapists in the therapist-feedback condition may have shared feedback results with patients, thereby lessening the distinction between the two groups.

Harmon and colleagues (2007) found significantly greater change scores for NOT patients in the CST group than for those whose therapists did not receive CST feedback. The strongest overall effect in the study was for NOT patients in the CST group as compared to the no-feedback archival group ($d = 0.73$). Patients in the CST group terminated therapy with an average OQ-45 score of 64 (one point above the cutoff for the functional range), whereas patients in the control group had an average termination score

of 79. The authors reported that the use of OQ-45 feedback plus CSTs doubled the number of patients (predicted to have a poor therapy outcome) who were rated as recovered or reliably improved at termination.

Summary of Current Findings

Lambert (2007) noted that the five studies described above shared many features:

a) patients were seen in routine care and received a variety of clinical diagnoses; b) patients were randomly assigned to feedback or treatment-as-usual conditions (with the exception of Whipple et al., 2003); c) therapists provided treatment from a variety of theoretical orientations; d) postgraduate psychologists and graduate-students each represented about 50% of study therapists; e) therapists in each study saw patients in both the feedback and treatment-as-usual conditions; f) the OQ-45 was used as the outcome measure, and decision rules for identifying NOT cases remained constant; g) the length of therapy was determined by patient and therapist without external constraints; and h) patient demographic characteristics were similar (with the exception of Hawkins et al, 2004, which was conducted in a hospital-based clinic).

Each of the five studies addressed the following main question: does feedback to therapists (or patients) regarding patient progress improve outcomes? The findings across studies are summarized below.

Effects of Feedback on Outcome

Each of the studies found that, among patients predicted to have a poor final treatment outcomes, those whose therapists received OQ-45 feedback achieved greater improvement than patients whose therapists did not. This finding appears to be robust and has been well replicated, with effect sizes ranging from 0.34 to 0.92 (Lambert, 2007).

Lambert stated that such effect sizes compare favorably to an average effect size of .20 in treatment outcome studies (Lambert & Ogles, 2004). Combined data across studies also demonstrated differences in regards to final treatment classification (based on Jacobson and Truax, 1991, criteria for clinically significant and reliable change). Lambert (2007) reported that 20% of NOT patients in no-feedback conditions were rated as deteriorated at termination, whereas the percentage of deterioration for patients whose therapists received feedback ranged from 8% to 15%. The percentage of patients classified as reliably improved was higher for NOT patients in the feedback conditions than for patients in treatment-as-usual conditions. Lambert suggested that the data provide evidence for the clinical utility of feedback, in addition to statistical significance.

Whereas all five studies demonstrated improved outcomes for signal-alarm patients, results were less conclusive across all patients. Indeed, only two studies (Harmon et al., 2007; Hawkins et al., 2004) found significant differences between the feedback and no-feedback groups when including on-track patients in the analyses. Lambert (2007) noted that “it appeared to make little difference in outcome for feedback (green or white messages) to have been given [to patients who progressed as expected in therapy]” (p. 10).

Effects of Feedback on Attendance

Lambert and colleagues have been interested in the effects of therapist feedback on rates of attendance and suggested that feedback may result in more cost-effective provision of services. Findings regarding this hypothesis have been inconsistent. Three studies (Harmon et al., 2007; Lambert, Whipple, et al., 2001; Lambert, Whipple, Vermeersch, et al., 2002) found an increased average number of sessions for NOT

patients in feedback conditions, whereas no such difference was found in the other studies. Observing this discrepancy, Harmon and colleagues stated, “it seems fair to conclude that the positive effects of feedback can be obtained with and without extending treatment length” (p. 390). Findings have also been mixed regarding attendance rates among on-track patients. Lambert (2007) reported that feedback decreased sessions by an average of 0.66 sessions in about half the studies. It is interesting to note that in the two studies (Harmon et al., 2007; Hawkins et al., 2004) that found improved outcomes for OT groups, OT patients who received feedback did not differ from their no-feedback counterparts in number of sessions attended. In conjunction with the alternate finding (in Lambert, Whipple, et al., 2001, and Whipple et al., 2003) that OT-Fb patients achieved equivalent results to OT-Nfb patients in fewer average sessions, the results suggest that patients deemed as on-track may improve at a slightly faster rate when therapists receive feedback.

Therapist Experience

In a meta-analysis of the first three outcome studies, Lambert, Whipple, Hawkins, Vermeersch, Nielsen, and Smart (2003) summarized the effects of feedback as a function of therapist experience level. They reported that trainees were significantly more likely to have clients that became signal-alarm cases during the course of treatment. Surprisingly, however, patients of trainees (graduate students) had significantly better outcomes than patients of professional therapists. In regards to feedback, Lambert and colleagues concluded that “the benefits of feedback to professional staff were limited to signal-alarm cases (NOT-Fb) but more broadly helpful to trainees whose clients benefited more from feedback on client progress than did clients of professionals” (p. 295).

Clinical Support Tools

Two studies (Whipple et al., 2003; Harmon et al., 2007) examined the effects of CSTs as an addition to the original feedback intervention. Therapist use of CSTs was optional in Whipple et al., and was based on random assignment in Harmon et al. Authors in both studies reported significant improvements in outcome for patients in CST conditions as compared both to control groups and to feedback without CST conditions. Lambert (2007) noted that the strongest overall effect sizes from the research program were for the difference in outcomes between treatment-as-usual groups and feedback plus CST groups. CSTs appear to strengthen the impact of the feedback intervention. However, Harmon and colleagues noted that such findings may be an artifact of methodology: completion of the CST intervention required three sessions after the identification of a patient as NOT. Therefore, outcomes in the CST group reflected only patients who completed at least three additional sessions, and did not include those who dropped out of therapy before that point. Therefore, the CST group represented patients who stayed in therapy longer, and may have been likely to achieve improved outcomes based on this artifact. This confound may be reduced in future research by reducing the amount of time necessary for the CST intervention, or by including in the data analysis those patients in the CST group who drop out before completion.

Feedback to Patients

Hawkins et al. (2004) and Harmon et al. (2007) examined the effects of providing feedback to patients as well as therapists. In the first study, patients in the patient-therapist feedback group achieved superior outcomes over patients in the therapist feedback group. However, this finding was not replicated in the second study. The

incremental utility of providing formal feedback to patients remains unclear, and, as previously discussed, is difficult to ascertain given that therapists in the therapist-feedback only conditions may share feedback with patients.

Therapist Reactions to Feedback

Despite the burgeoning patient-focused research literature, the manner in which therapists address feedback has been largely ignored. A few studies have included preliminary data on therapists' views of feedback and responses to feedback.

Acceptability of Feedback

Evidence for therapists' willingness to accept and apply feedback largely relies upon findings showing that feedback has resulted in improved outcomes (and therefore, must have influenced therapists' actions) or on high compliance rates (e.g., Miller et al., 2003). However, several experimental studies have included surveys at the conclusion of data collection in order to assess therapists' acceptance of feedback (Brodey et al., 2005; Lambert, Whipple, Smart, et al., 2001; Slade et al., 2006). It appears that therapists generally have read and understood feedback when it has been provided. However, therapists' opinions of the utility of feedback were variable. Feedback was rated as "useful" by 58% of therapists in Brodey and colleagues' report. Lambert and colleagues reported that 25 out of 30 therapists rated OQ-45 feedback as helpful at least "sometimes", with only 1 therapist rating the feedback as "never" helpful.

Therapist concerns regarding feedback are often related to time constraints. Only 8% of therapists in Brodey et al. (2005) agreed with the item "The [feedback] report

saved me time.” Only 35% of therapists in the same study agreed with the item “I would like to receive reports on all my patients”.

Behavioral Responses to Feedback

The actions taken by therapists as a consequence of feedback presumably lead to the improved outcomes noted in various studies. Lambert and colleagues used a tracking form in two studies (Lambert, Whipple, Vermeersch, et al., 2002; Whipple et al., 2003) to ascertain therapists’ actions following the reception of signal alarm feedback.

However, the reported results of tracking form data were vague:

Data gathered from the tracking form suggested that therapists utilized, at least to some degree, the OQ and OQ feedback in their work with [signal alarm] cases.

Therapists reported a variety of actions to varying degrees in response to receiving red and/or yellow warning messages. This information suggests that therapists may be attentive to the red and/or yellow warning messages they received for NOT-Fb cases, and often altered their approach to working with NOT-Fb cases in a manner which they believed would facilitate the recovery of those clients. (Lambert, Whipple, Vermeersch, et al., 2002, p. 101)

Slade, McCrone, Kuipers, Leese, Cahill, Parabiaghi, and colleagues (2006) reported that 51% of therapists discussed the content of feedback with their clients. Lambert and colleagues (2001) reported that 17 of 26 therapists stated that OQ-45 feedback was helpful to share with clients at least “Sometimes”. Six therapists stated that it was “Never” helpful to share with clients. Among therapists in Slade et al. (2006), 41% reported that receiving feedback led them to change their behavior with the client.

Therapist reactions to feedback may be influenced by characteristics of therapists themselves and the setting in which feedback is received. The data above reflect a variety of therapist characteristics. Therapists in Lambert, Whipple, Vermeersch, et al. (2001) included 16 Ph.D.-level psychologists and 15 doctoral students in training, including interns. The professionals surveyed by Slade and colleagues (2006) represented various disciplines including psychiatric nurses, social workers, and psychiatrists. Brodey and colleagues (2005) reported therapist characteristics less extensively, indicating only that 358 “clinicians” in managed-care settings were represented in survey data analysis.

The limited data summarized above indicate that therapists do not universally value feedback on the progress of their patients. Furthermore, the actions of therapists in response to such feedback remain elusive.

Present Study

The purpose of the present study was to examine therapists’ responses to patient progress feedback. Of specific interest were therapists’ internal/emotional reactions to receiving the feedback, therapist actions taken following feedback reception, and whether characteristics of the feedback itself influence such decisions. Given that the study was correlational rather than experimental in nature, OQ-45 feedback was administered to all participating therapists for all patients, and at each session. Therapists completed questionnaires at each feedback administration that were designed to elicit their attitudes and usage of the specific feedback. Embedded within the quantitative design were several qualitative (open-ended) items, which were expected to enhance the research by

providing broad information about therapists' beliefs regarding the feedback and their personal reactions to it, in order to guide future research.

Hypotheses

Several specific hypotheses were examined in the current research. The first hypotheses related to feedback valence. Although social psychology researchers have generally found that positive feedback is rated as more accurate and valuable than negative feedback, feedback to therapists has demonstrated the greatest effects when therapists receive signal-alarm feedback, which is considered to be negatively valenced feedback. Based upon such results, contextualized feedback intervention theorists (Sapyta, Riemer, & Bickman, 2005) have suggested that “feedback only changes clinician behavior when the information provided indicates that the clinician is not meeting an established standard of practice” (p. 149). Feedback was, therefore, hypothesized to be perceived as more valuable and to be more likely to result in behavioral change when it was negatively valenced. Preliminary support for this hypothesis was found by Brodey and colleagues (2005), who reported that “clinicians were more likely to agree that the report was an aid to treatment when patients endorsed more symptoms of depression and anxiety” (p. 778). OQ-45 feedback is valenced in that yellow or red-colored feedback is reflective of poor progress on the patient's part, whereas green and white feedback denote that progress is at least as much as expected. The presence of critical item endorsement was also considered negatively valenced, as the critical items serve as severity indicators.

Hypothesis 1: Feedback would be rated as more valuable when its valence was negative.

- A. Feedback that was negatively-valenced (yellow or red) would be rated as more valuable than positively-valenced feedback (green or white).
- B. Feedback indicating that critical items had been endorsed would be rated as more valuable than feedback that did not indicate that critical items had been endorsed.

Hypothesis II: Feedback would be more likely to result in behavioral change when it was negatively valenced.

- A. When therapists received feedback that was negatively valenced, they would report greater likelihoods of taking action based on the feedback than when receiving positively-valenced feedback.
- B. When feedback reports indicated that critical items had been endorsed, therapists would report greater likelihoods of taking action based on the feedback than when feedback indicated no critical item endorsement.

An important consideration regarding feedback is its incremental utility in the context of treatment; that is, does it provide useful information that the clinician could not know by other means? For example, if a therapist accurately judges that a patient has worsened over the course of therapy, it may be of limited usefulness to provide feedback that only confirms this conclusion. It was expected that feedback that differed from therapists' clinical judgment of patient progress would be perceived as being more valuable than feedback that was concordant with therapists' estimates of change.

Hypothesis III: Feedback would be rated as more valuable when it was discrepant from therapists' previous understanding about client change than when it was concordant with therapists' previous understanding about client change.

The final study hypothesis was related to feedback velocity. Previous research has indicated that feedback suggesting positive change from a previous point results in high satisfaction ratings from feedback receivers (Hsee & Abelson, 1991; Hsee, Abelson, & Salovey, 1991; Kluger & DeNisi, 1996). Kluger and DeNisi noted that velocity feedback directs attention to the motivational level of the goal hierarchy because it directs individuals' attention to changes in their performance on the task at hand. Feedback with

positive velocity cues was therefore expected to increase therapists' motivation toward the therapy task.

Hypothesis IV: The perceived motivational effects of feedback would be negatively correlated with client change scores on the OQ-45 (i.e., feedback indicating that clients had made great improvement, signified by a decrease in OQ-45 total score, would be rated as more motivational than feedback reporting large increases in OQ-45 total score).

Additional Questions

Various additional questions were addressed in the current research. Given that they have been largely unaddressed in the extant research, no hypotheses were made.

Question 1: How well do therapists estimate the amount of change clients have made from the previous session (as estimated by the OQ-45)?

Question 2: Does receiving OQ-45 feedback increase therapists' abilities to predict change?

Question 3: To what extent do therapists utilize feedback results in specific and definable ways?

Question 4: What actions do therapists take in response to feedback, and how frequently are various actions taken?

Question 5: In addition to feedback valence and critical items, are there other characteristics of feedback that affect therapists' likelihood of making behavioral changes following feedback reception?

Question 6: What conditions affect therapists' perceptions of the utility of the feedback?

Question 7: What conditions affect therapists' perceptions of the accuracy of feedback?

Question 8: Do therapists' responses to feedback vary as a function of the number of treatment sessions a client has received?

Question 9: Do therapists' responses to feedback change over the course of time alone?

Question 10: Which aspects or components of feedback do therapists perceive as being the most useful?

CHAPTER 3

METHOD

Participants

Participants in the study included 19 patients seen at the UNLV Center for Individual, Couple, and Family Counseling (CICFC) from September 2008 to February 2009. Patients received a mean of 7.2 sessions ($sd = 5.3$) during the course of the study. All OQ-45 administrations for each patient were included in data analysis. There were no inclusion or exclusion criteria on the basis of patient characteristics, given that each OQ-45 administration and subsequent provision of feedback was of interest. Patients were not required to sign informed consent, as it is the policy the CICFC that all individual therapy patients complete the OQ-45 at each session and therefore the patients did not experience any changes from standard clinic procedures. All patients included in the study had consented to the utilization of anonymous archival data for research purposes.

Therapists included 5 doctoral-level students in clinical psychology, all of whom were beginning their first year of practicum experience. Therapists saw an average of 4.6 patients each ($sd = 2.1$) and completed ratings for multiple sessions with a range from 10 to 60. An additional therapist completed only 3 sessions and was therefore not included in data analysis; however, the follow-up questionnaire was completed by all 6 therapists. Therapists were oriented to the study and signed informed consent prior to data

collection. Therapists created anonymous code numbers in order to allow for consideration of therapist effects during data analyses.

Procedure

All patients were asked to arrive a few minutes early to sessions in order to complete the OQ-45 without infringing on therapy time. Clinic receptionists administered the measure at the time of patients' arrival. The measure takes approximately five minutes to complete, although administration may range from three minutes to 15 minutes in rare circumstances (Lambert et al., 2004). After a client completed the OQ-45, the measure was set aside until therapist feedback was generated. Directly following each therapy session, therapists estimated their client's status at the beginning of the session (on the basis of factors such as ongoing symptoms, quality of interpersonal relationships, and life satisfaction) and submitted the estimates to research assistants for data entry.

Research assistants recorded OQ-45 data and therapist estimates by patient code numbers in a secure electronic database. Standardized feedback was then prepared utilizing *OQ-Analyst* software and delivered to therapists within a few days of the corresponding session; feedback was therefore available to therapists in advance of each client's subsequent treatment session. This feedback schedule was consistent with previous research utilizing feedback interventions with the OQ-45 (e.g., Harmon et al., 2004). The feedback was placed in client charts together with a Feedback Rating Form, which therapists completed immediately upon reviewing feedback. The feedback rating forms were then submitted to researchers for data entry. Feedback rating forms and

therapist severity estimate forms were securely stored and maintained by researchers. OQ-45 forms and corresponding feedback were maintained as part of patient files.

Therapist usage of feedback was not systematized or monitored; therapists independently decided how to incorporate OQ-45 results with their clients. Upon the conclusion of data collection, therapists completed a questionnaire designed to assess global reactions to feedback, specific factors that affected their usage of feedback, and specific actions taken as a result of feedback.

Measures

OQ-45 and Feedback

Feedback was based on the Outcome Questionnaire-45.2 (OQ-45; Lambert, Morton, Hatfield, et al., 2004), a self-report measure of general distress and dysfunction. Total scores for the 45-item measure range from 0 to 180, with higher scores indicative of greater distress. As described earlier, the OQ-45 has evidenced strong reliability and validity and is sensitive to client change over time. Because of the equivocal support for the OQ-45 subscales, only the Total Score was utilized for data analyses in the current study. Feedback to therapists was generated based on clients' OQ-45 results at each session, utilizing the *OQ-Analyst* software. Feedback was based on the empirical decision rules developed by Finch, Lambert, and Schaalje (2001).

Therapist Change Estimate

Therapists' estimates of the amount of change their clients made from session to session were ascertained through a one-item Likert-type rating scale. The scale consisted of 7 points (to be coded from 1 to 7). Therapists estimated the amount of change in status

their client had experienced since the previous session, as well as the direction of the change. The three points on the right of the scale are labeled *much improved*, *somewhat improved*, and *slightly improved*. The three points on the left are equivalent except that *worse* is substituted for *improved*. The midpoint is labeled *no change*. Likert-type scales generally demonstrate adequate reliability; the validity of such scales has not been studied as extensively (Chang, 1994). Matell and Jacoby (1971) found the average internal consistency of Likert-type items to be .66, and the average test-retest reliability was .82. Research regarding the optimal number of scale points for Likert-type items has been inconsistent; many investigators (e.g., Brown, Widing, & Coulter, 1991; Matell & Jacoby, 1971) have found the reliability of items to be independent of the number of points. Other results have indicated that reliability increases with the variability of the scale; however, additional scale points may lead to method variance by invoking extreme response sets (Chang, 1994). Several authors have advocated 7-point scales as the most reliable (Cicchetti, Showalter, & Tyrer, 1985; Ramsay, 1973). Chang (1997) examined the dependability of anchoring labels for Likert scales and concluded that variance in anchors contributed very little to score variance for the scales. It is possible that respondents primarily utilize numerical information in completing Likert scales.

Feedback Rating Form

In order to analyze the effects of individual feedback characteristics on receivers' perceptions and usage of the feedback, it was necessary to assess receivers' perceptions at each individual feedback administration. No measure designed to achieve such a purpose has been reported in the extant literature. Therefore, a Feedback Rating Form (Appendix A) was developed for usage in the present research. The form was designed to be brief so

as to prevent it from becoming burdensome to therapists as they completed it after each therapy session. The form took 1 to 2 minutes to complete.

The rating form included 4 Likert-type items and 2 open-ended response items. The first three items were rated from 1 to 7, with anchors including *completely disagree*, *somewhat disagree*, *slightly disagree*, *neutral*, *slightly agree*, *somewhat agree*, and *completely agree*. Two items addressed aspects of therapists' acceptance of the feedback: perceived accuracy ("This feedback is an accurate reflection of my client's status at the time of the session") and perceived utility ("This feedback is valuable to me in conceptualizing and treating this client"). These factors were selected based on research suggesting that feedback is more likely to be accepted when it is perceived as accurate and personally relevant (Claiborn & Goodyear, 2005). The remaining two Likert-scale items assessed the direct effects of feedback in terms of motivation ("This feedback increased my motivation to help my client work toward his/her goals") and behavioral change ("I will take specific actions with my client as a result of this feedback"). Anchors for the item assessing the likelihood of behavioral change included *definitely not*, *probably not*, *possibly not*, *unsure*, *possibly*, *probably*, and *definitely*. Behavioral change is the primary goal of feedback. Contextualized feedback intervention theory (Sapyta, Riemer, & Bickman, 2005) suggests that feedback must increase goal-commitment (or motivation) in order to result in behavior change. In the context of therapy, the clinician's goal is assumed to be helping the client to reach his or her objectives.

The open-ended items ("Please note any specific actions you are considering" and "Do you have any other other comments or reactions to the feedback?") were designed to ascertain specific actions taken by therapists in response to feedback and to elicit general

clinician reactions to the feedback that may not be otherwise obtained. The combination of quantitative and qualitative data (known as mixed methods research) is particularly useful when there is an existing need to explain quantitative results (Creswell & Plano Clark, 2007). In the present context, the process by which the positive effects of feedback are achieved is relatively unknown.

Feedback Experience Survey

A feedback experience survey (Appendix B) was designed to gather information regarding therapists' global reactions to receiving feedback. The survey was administered at the end of data collection. As with the feedback rating form, the survey included both quantitative and qualitative items. Quantitative items were patterned after those in similar surveys used in previous research (Brodey et al., 2005; Lambert, Whipple, et al., 2001; Slade et al., 2006). Open-ended questions on the survey were designed to elicit general likes and dislikes regarding reception of feedback, situations in which the feedback was perceived as more helpful or less helpful, and whether therapists' perceptions of the feedback changed over time.

Data Analysis

Given the exploratory nature of the current research, many variables were of interest. The variables are briefly described here and their measurement in the present study is set forth.

Fixed and Predictor Factors

All therapists in the study utilized code numbers which enabled data to be collapsed by therapist in order to examine the range of feedback rating means among

individual therapists. Similarly, each client was assigned a unique code number in order to control for client effects when examining study hypotheses.

The session number was recorded at each feedback administration and subsequent rating. Session numbers do not necessarily represent a client's total number of sessions received at the CICFC but rather represent the number of sessions for each patient with the current therapist. A categorical variable was created by dividing session numbers into three groups: beginning (sessions 0 to 4), middle (sessions 5 to 8), and ongoing treatment (sessions 9 and beyond).

Therapists' predictions about their clients were considered a fixed factor in relation to feedback ratings because it is apparent that therapists have their own hypotheses about clients' progression, whether or not they are formally identified. These hypotheses can influence therapists' mindset as feedback receivers, as feedback results are no doubt compared to previous expectations. The direction of change estimated by the therapist was compared to the actual direction of change on the OQ-45 from the previous session to create discrepancy indicators. The direction of the discrepancy as well as the simple presence or absence of discrepancy were examined.

Feedback valence was coded based on the alert status at each feedback administration. Yellow or Red feedback was coded as negatively valenced, whereas Green or White feedback was classified as positively valenced.

The presence or absence of critical item endorsement on the OQ-45 was used to create a dichotomous variable; a response of *sometimes*, *frequently*, or *almost always* to any of the 5 critical items resulted in a positive classification for critical item endorsement. Because the presence of critical items was anticipated to be strongly related

to feedback valence, given that both are influenced by the overall severity of patient ratings on the OQ-45, critical item endorsement was utilized as a covariate for analysis of the effects of feedback valence, rather than as a separate independent variable.

Feedback velocity is a function of the magnitude and direction of change from a previous administration. The velocity of change from the previous to the current session was recorded, as was the overall change from the first session to the most recent.

Outcome or Criterion Variables

The perceived accuracy and utility (value) of feedback administrations were assessed by the first two items of the feedback rating form. The effects of feedback on therapists' motivation were self-reported on item three, and the extent to which feedback changed behavior was estimated based on therapist self-reports on the fourth item of the feedback rating form.

Data Transformations

Descriptive statistics including mean feedback ratings and the correlation between therapist change estimates and change indicated by the OQ-45 were first calculated individually for each therapist and individual therapist means were then averaged in order to account for an unequal number of administrations across therapists. For analyses utilizing feedback ratings, the ratings were standardized as z-scores within therapists in order to control for individual differences among therapists while still examining the relative effects of various feedback characteristics on therapist ratings. Finally, ratings were collapsed by means within clients at each level of interest in order to control for unequal numbers of sessions among clients and therefore client effects in data analyses. For example, feedback ratings for all negatively-valenced feedback for a given client

were collapsed into one mean for the purposes of analyses of the effect of feedback valence on ratings. See Figure 1 for a sample of the data layout and transformations. These transformations were necessitated by the repeated administrations of feedback within clients and therapists. Because consideration of different variables required the collapse of data into distinct means, each variable was examined individually in order to maximize the accuracy of consideration of the individual variables (i.e., the effects of valence and session are examined as separate one-way ANOVAs, rather than by factorial ANOVA).

Therapist	Client	Session	Valence	Rating for value	Standardized rating (within therapist)	Within-client mean (DV for analyses)
1	1	1	Positive	3	-.76	} -.38
1	1	2	Positive	4	.00	
1	1	3	Negative	5	.76	} .76
1	1	4	Negative	5	.76	
1	2	1	Positive	6	1.53	} -.25
1	2	2	Positive	2	-1.53	
1	2	4	Positive	3	-.76	
1	2	3	Negative	4	.00	→ .00
2	3	1	Positive	7	1.53	} 1.06
2	3	4	Positive	6	.59	
2	3	2	Negative	5	-.35	} .12
2	3	3	Negative	6	.59	
2	4	1	Positive	5	-.35	} -.59
2	4	2	Positive	4	-1.30	
2	4	3	Positive	4	-1.30	
2	4	4	Positive	6	.59	

Figure 1. Sample data layout and transformations for examining the effect of feedback valence on therapist perceptions of feedback value.

CHAPTER 4

RESULTS

Quantitative Data Analysis

Therapists' mean feedback ratings are presented in Table 1. Feedback was generally considered to be accurate ($M = 5.31$). Overall, therapists were relatively neutral regarding the value ($M = 4.31$) and motivational aspects ($M = 4.24$) of feedback and were slightly lower than neutral regarding their intentions to take specific actions on the basis of the feedback ($M = 3.53$).

Table 1
Mean therapist feedback ratings

Item	Mean	SD	Range
This feedback was an accurate reflection of my client's status at the time of the session. ^a	5.31	0.27	4.88 to 5.56
This feedback is valuable to me in conceptualizing and treating this client. ^a	4.31	1.14	2.60 to 5.44
This feedback increased my motivation to help my client work toward his/her goals. ^a	4.24	1.15	2.80 to 5.66
I will take specific actions with my client as a result of this feedback. ^b	3.53	1.26	1.60 to 4.59

Note. Means represent the grand mean of 5 therapist individual means (rather than the raw mean across all feedback administrations).

^aResponses based on a 7-point scale with 1 = *completely disagree*, 2 = *somewhat disagree*, 3 = *slightly disagree*, 4 = *neutral*, 5 = *slightly agree*, 6 = *somewhat agree*, 7 = *completely agree*. ^bResponses based on a 7-point scale with 1 = *definitely not*, 2 = *probably not*, 3 = *possibly not*, 4 = *unsure*, 5 = *possibly*, 6 = *probably*, 7 = *definitely*.

The correlations among the individual feedback rating items are presented in Table 2. In order to account for autocorrelations within the data, ratings were standardized within individual clients to control therapist and client effects. The correlations between these standardized ratings were then examined. After applying Bonferroni corrections to control for multiple comparisons, significant correlations were found between ratings of perceived accuracy and helpfulness, $r(157) = .40, p < .001$, helpfulness and motivation, $r(157) = .24, p = .002$, and motivation and intent to take action, $r(152) = .29, p < .001$.

Table 2
Correlations among Feedback Rating Form items

Item	1	2	3	4
1. Accuracy	--	--	--	--
2. Helpfulness	.40*	--	--	--
3. Motivation	.05	.24*	--	--
4. Intent to take action	.15	.21	.29*	--

* $p < .05$ following Bonferroni adjustment (6 comparisons were examined resulting in a corrected significance criterion of $p < .008$).

Therapists' responses to the follow-up questions regarding their usage of the feedback are presented in Table 3. Therapists each read the feedback at least sometimes and generally found the feedback to be understandable. There was variability in therapists' retrospective ratings of how often the feedback was useful; responses ranged from *never* to *frequently* (the modal response was *sometimes*). Feedback generally caused therapists to consider their therapeutic relationship with the client for which feedback was provided. On average, therapists were *sometimes* surprised by feedback, which is supported by examination of the current data; the direction of change indicated by the

Table 3
Descriptive statistics for Feedback Experience Questionnaire

Item	Mean	SD	Range	
			Min	Max
I carefully read the feedback	3.50	0.55	3	4
The feedback was understandable	4.33	0.82	3	5
The feedback was useful	2.67	1.03	1	4
The feedback reports saved me time	2.00	0.63	1	3
The feedback made me think about my relationship with the client	3.83	0.98	3	5
I discussed the feedback with my supervisor	1.33	0.52	1	2
I discussed the feedback with the client	1.33	0.82	1	3
Receiving or discussing the feedback made me feel uncomfortable	1.33	0.82	1	3
The feedback was frustrating	1.83	0.75	1	3
The feedback surprised me or was not what I had expected	3.00	0.63	2	4

Note. Means are based on a five-point scale with 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *frequently*, and 5 = *almost always*.

OQ-45 was discrepant from therapists' estimates for 55 percent of sessions. In general, therapists were unlikely to discuss feedback with their supervisors or clients. Finally, therapists generally did not report feelings of frustration or discomfort upon receiving feedback.

Therapists were also asked to rate the individual components of the OQ-45 feedback report in order to evaluate whether therapists relied more heavily upon certain types of feedback. Each component was rated on a scale from 1 (*not helpful at all*) to 10

(*extremely helpful*). Descriptive statistics are presented in Table 4. All feedback components were generally rated similarly, with means ranging from 5.00 to 6.83.

Table 4
Mean ratings of individual feedback components

Component	Mean	SD
The progress graph (chart)	6.83	1.47
Feedback message (paragraph)	5.17	2.79
Current distress level category	6.17	1.60
The alert status (red, yellow, green, white)	5.17	1.60
Critical items summary	5.00	1.22
Categorization of change from initial score (reliably improved/ worse, no change, etc.)	6.33	0.82

Note. Means based on ratings from 1 to 10 with 1 = *not helpful at all* and 10 = *extremely helpful*.

Feedback Valence

The hypothesis that negatively-valenced feedback (as indicated by an alert status of yellow or red) would be rated as more valuable than positively-valenced (green or white) feedback was evaluated through a one-way analysis of variance (ANOVA). Equal variance between groups was not assumed, Levene's $F(1, 35) = 8.82, p = .005$; Welch's (1947, 1951) test for equality of means was therefore utilized because it does not rely upon the assumption of homogeneity of variance. Results indicated a significant effect for valence, $F(1, 14.05) = 3.50$, one-tailed $p = .04$, with feedback that was negative in valence ($M = .42, SD = .86$) rated as more valuable than positively-valenced feedback ($M = -.08, SD = .46$). As noted previously, the dependent measure for valence analyses was feedback ratings standardized within therapists. The observed mean of .42 for negatively-

valenced feedback therefore indicates that therapists' ratings of the value of such feedback were, on average, .42 standard deviations higher than their own individual mean ratings across all feedback. The observed effect size for the effect of feedback valence on therapists' ratings of the value of feedback was .81, indicating a relatively large effect.

It was also hypothesized that therapists would be more likely to make behavioral changes on the basis of negatively-valenced feedback. This was examined via a one-way ANOVA with therapists' ratings of likelihood of taking specific action as the outcome variable. No significant difference between groups was obtained, $F(1, 35) = .47, p = .50$. Finally, the effects of valence on therapists' perceptions of the accuracy and motivational aspects of feedback were examined through a multivariate analysis of variance (MANOVA), given that no specific hypotheses had been formed. No global difference between negative and positive feedback was found, Wilks' Lambda(2, 34) = .62, $p = .54$. Means for each feedback rating by valence are presented in Table 5.

Table 5
Mean ratings for Feedback Rating Form items by feedback valence

Item	Positive valence (n = 25)		Negative valence (n = 12)	
	Mean	SD	Mean	SD
1. Accuracy	.00	.59	.14	.84
2. Helpfulness	-.08	.46	.42	.86
3. Motivation	-.09	.66	.17	.97
4. Intent to take action	.02	.72	.22	.92

Note. Ratings reflect standardized scores within therapists such that each therapist's individual ratings have a mean of 0 and standard deviation of 1. Ratings were subsequently collapsed into mean ratings within clients by feedback valence. The means reported here are the grand means of all within-client means.

Critical Items

The effects of critical item endorsement were not examined independently from feedback valence, given that the two variables were expected to be associated. Chi-square analyses confirmed that negatively-valenced feedback was disproportionately likely to include critical item endorsement, Yates' corrected $\chi^2(1) = 23.13, p < .001$. Analysis of covariance examining the effect of valence with a covariate of the proportion of administrations in which critical items were endorsed could not be accomplished due to violation of the assumption of homogeneity of variances in the dependent variable, Levene's $F(1, 35) = 8.52, p = .006$.

Discrepancy between Therapist Estimates and OQ-45 Change

Examination of the current data revealed that the direction of therapists' estimates of client change from the previous session differed from the direction of change indicated by the OQ-45 at 55 percent of the therapy sessions. Of those sessions where a discrepancy existed, therapists estimated client change to be in the opposite direction of the change indicated by the OQ-45 56 percent of the time (in other cases of discrepancy, either the therapist estimate or OQ-45 indicated no change).

A one-way ANOVA was utilized to examine the hypothesis that therapists would consider feedback more valuable when it was inconsistent with their previous ideas of client progress. Feedback ratings were collapsed by client means within groups of sessions in which therapist estimates were either concordant or discrepant with the direction of change indicated on the OQ-45. Results indicated no significant effect for discrepancy, $F(1, 31) = .65, p = .43$. Therapists did not rate feedback as more valuable when discrepancies were present ($M = -.12, SD = .52$) or absent ($M = .02, SD = .52$).

The effects of feedback that was discrepant from the therapists' expectations were also examined for other outcome variables (perceptions of accuracy, motivation, and behavior change) via a one-way MANOVA. No significant between-groups effect was observed, Wilks' Lambda(3, 29) = 1.42, $p = .26$. However, it is worth noting that the individual ANOVA for the effect of a discrepancy on therapist perceptions of feedback accuracy was significant, $F(1, 31) = 4.23, p = .048$. Therapists were more likely to agree that feedback was accurate when it was concordant with their own estimates of client progress ($M = .14, SD = .50$) than when it was discrepant ($M = -.23, SD = .53$).

Feedback Velocity

Feedback velocity refers to the direction and rate of change from a previous point. It was hypothesized that when feedback demonstrated positive velocity cues from the previous session, therapists would consider the feedback to be more motivational. This hypothesis was evaluated by calculating the correlation between the change in the OQ-45 score from a previous session and the therapists' perceptions of motivation derived from feedback. Because improvement on the OQ-45 is denoted by a decrease in score (negative change values denote desirable change), a linear negative relationship was expected. However, results indicated no significant linear relationship between OQ-45 change scores and therapist ratings regarding motivation, $r(151) = -.06, p = .44$.

The relationship between feedback velocity cues and the other therapist ratings of feedback was also examined. No significant correlations were obtained between OQ-45 change from the initial or from the most recent session and therapist feedback ratings.

Number of Sessions

The number of treatment sessions previously held with the same client was examined as a potential moderator of therapists' perceptions and usage of feedback. Sessions were divided into three blocks (1 through 4, 5 through 8, and 9 or beyond). Because no a priori hypotheses regarding the effect of treatment session were made, multivariate (MANOVA) procedures were utilized to control for inflated type-I error rates due to examining all four outcome variables. The Wilks' Lambda statistic indicated no global difference among session blocks, $F(4, 41) = .38, p = .82$.

Accuracy of Therapist Estimates of Change

Therapists' ability to accurately estimate the progress their clients had made from one session to another was assessed by examining the correlation between therapist estimates of change immediately after session (prior to receiving feedback) and change from the previous session as indicated by the OQ-45. Across all sessions, the correlation between therapist estimates and OQ-45 change was statistically significant, $r(152) = .18, p = .03$, and reflected a weak positive relationship. Individual therapists varied in their ability to estimate patient change as assessed by the OQ-45, with correlations ranging from $-.18$ to $.31$.

The possibility that therapists' abilities to estimate client progress would improve over the course of receiving feedback was examined by comparing means of individual correlations between therapist estimates and OQ-45 change at the beginning and ending of the data collection period. Various criteria were utilized to separate first and last sessions. Multiple cutoff points were examined because no "best" point could be determined *a priori*. The following cutoffs were therefore examined: 5 sessions, 10

sessions, 25% of sessions, 33% of sessions, and 50% of sessions. Examining correlations across multiple time periods provided some information regarding the time frame in which changes in therapists' abilities to estimate progress may have occurred. Repeated-measure ANOVAs were conducted to determine whether mean correlations differed across the first and last groups of sessions. In each case, the correlation between therapists' estimates of change and the objective change measure was higher for later blocks of sessions. These differences reached statistical significance for the first five sessions versus last five sessions, $F(1, 3) = 13.16, p = .04$, the first 10 sessions versus the last 10 sessions, $F(1, 2) = 284.34, p = .003$, and first 33% of sessions versus the last 33% of sessions, $F(1, 3) = 15.18, p = .03$, for each therapist. The difference was most notable when examining therapists' first versus last 10 sessions, for which the mean of individual therapists' correlations between estimates of change direction and the OQ-45 measure of change were $-.18$ and $.53$, respectively. Table 6 presents a complete listing of the ANOVA results.

Table 6
Means and repeated-measures ANOVAs for correlations between therapist estimates of change and OQ-45 change

Cut point	n	Mean correlations		F	p
		First	Last		
5 sessions	4	.06	.56	13.16	.036
10 sessions	3	-.18	.53	284.34	.003
25%	4	.13	.60	6.52	.084
33%	4	-.07	.45	15.18	.030
50%	5	-.04	.27	7.46	.052

Qualitative Results

Therapists were asked to report any specific actions that they intended to take based upon the feedback following each feedback administration. However, only one therapist responded to the open-ended item (19 responses). Intended actions included discussing the feedback with a supervisor (3 responses), discussing termination (2), clarifying or focusing on client goals (3), or discussing a wide range of specific content issues in session.

A follow-up questionnaire was completed by all 6 therapists following data collection in order to elicit qualitative information regarding the therapists' perceptions of feedback. When asked what they liked about the feedback, 5 of the therapists noted that they liked "seeing change from week to week" or a similar response. Therapists therefore appeared to value the frequent provision of feedback during the course of therapy. Additional "likes" identified by therapists were the user-friendly nature of feedback ("much more user-friendly than the OQ itself") and that the feedback verified therapists' judgments about clients.

Only 4 therapists reported dislikes related to receiving feedback. Two therapists disliked that the feedback was often discordant with their own perceptions of their clients' functioning. Other dislikes included concerns that the feedback did not provide a significant amount of information beyond that obtained in the session and that clients may not have taken time to respond carefully or to differentiate responses from week to week.

Two therapists reported that feedback was especially helpful during times of client regression or crisis. Another therapist noted that the feedback was helpful when

clients presented as improved in session but reported increased distress on the OQ-45. When queried regarding situations in which feedback was less helpful, two therapists expressed concerns that the OQ-45 was not sensitive to clinical distress in some higher functioning clients. Specifically, one therapist noted that the written feedback “constantly said I should terminate in situations in which I didn’t think it was time yet.” Additionally, one therapist felt that the OQ-45 did not address some latent areas of interest.

Finally, therapists were asked whether their opinions regarding feedback changed across the course of feedback administration. Four of the therapists indicated no change over time. Two therapists noted change in their opinions of feedback. In both cases, therapists reported that they became more accustomed to interpreting the feedback: “I found it more useful once I got used to interpreting it, which made me like it more and appreciate its ‘input’ more.”

CHAPTER 5

DISCUSSION

This research represented a preliminary attempt to increase knowledge of trainee psychotherapists' responses to standardized feedback regarding the progress of their clients. Quantitative and qualitative measures were utilized in order to elicit a broad range of information regarding therapists' perceptions of feedback as well as their intentions to utilize the feedback in specific ways.

A primary hypothesis was that therapists would rate feedback as more valuable when it was negative in valence, thereby indicating a discrepancy between expected therapy response and the actual progress a client had made during the prior week. This hypothesis was supported. Thus, although no definitive conclusions can be drawn, it appears that therapists considered "signal alarm" feedback to be more valuable in comparison to neutral or positive feedback. Such a pattern was predicted by Contextualized Feedback Intervention Theory (Saptya, Riemer, & Bickman, 2005), which postulates that clinicians are self-regulating and are therefore likely to benefit from feedback indicating that a goal has not been accomplished. At the very least, therapists did not appear to systematically reject negative feedback or to abandon the performance standard as means of addressing discrepancies between the standard of comparison and their current performance. It is also possible that in some cases therapists changed the

performance standard by attributing lack of progress to the clients themselves and therefore shifted the focus away from their own performance.

Apart from feedback valence, no characteristics of the feedback itself (e.g. number of sessions held, feedback velocity, discrepancies between therapist estimate and OQ-45 estimate) were found to significantly influence therapists' perceptions or utilization of the feedback. However, given the relatively small sample size of the current study, it is possible that further investigation may find that such variables do contribute to therapists' perceptions and utilization of feedback.

Among feedback ratings made by therapists at each session, the highest mean rating was for accuracy; on average, therapists "slightly" agreed that feedback was accurate. It is notable that therapists' perceptions of the accuracy of feedback were related to their judgments about the value of the feedback ($r = .40$). Consistent with previous feedback literature, the belief that feedback is accurate appears to be a requisite condition for therapists to value and incorporate feedback. This relationship may account for the lack of significant findings regarding feedback discrepancies from therapist estimates, given that therapists were less likely to consider feedback to be accurate when it differed from their own estimates. They may therefore have rejected the feedback rather than revising their own conceptualizations in some cases.

Therapists' lowest ratings regarding the feedback were for the item assessing their intent to take specific action on the basis of feedback. They generally reported themselves as unlikely to take specific action on the basis of the feedback. It is possible that as trainees, these therapists simply did not possess a large repertoire of therapeutic strategies and therefore lacked knowledge of alternative intervention strategies or the confidence to

implement behavioral change. Indeed, when therapists did report intended therapeutic changes, they generally included talking to a supervisor or focused on changing the content of discussions with clients, rather than on changing approaches or intervention techniques. If such is the case, it may be beneficial to supplement feedback messages with additional directive intervention, as suggested by Sapyta, Riemer, and Bickman (2005). One possibility is to provide the “clinical support tools” type of feedback developed by Lambert and colleagues (Harmon et al., 2007; Whipple et al., 2003), which has been demonstrated to strengthen the effectiveness of feedback interventions for mixed samples of trainee and professional therapists.

Although supporting clinical tools appear to augment feedback interventions, previous studies have shown that feedback has nonetheless produced improved outcomes without additional tools. Prior researchers have had difficulty identifying specific actions taken by therapists in response to feedback; the current study is consistent in that regard. It is likely that at least some of the effectiveness of feedback interventions is attributable to an “attention effect.” All therapists in the study noted that receiving feedback made them think about their relationship with the client at least “sometimes”, with an average rating near “frequently.” It is possible that taking time to review and reflect on client feedback increased therapists’ empathy or alliance with clients, both of which are common factors shown to contribute to variance among client outcomes (Greenberg et al., 2001; Horvath, 2001; Lambert & Barley, 2001).

Therapists’ responses to the follow-up questionnaire suggested that they were unlikely to discuss progress feedback with their clients. Five of the therapists (83%) reported that they “never” discussed the feedback with their clients. In contrast, Lambert

and colleagues (Lambert, Whipple, Smart, et al., 2001) found that only 20% of therapists “never” found feedback helpful to share with clients. On the basis of current therapist reports, it does not appear that their hesitancy to share feedback was due to their own discomfort about the feedback; they reported little discomfort or frustration upon receiving feedback. The discrepancy may reflect differences in the implementation of the OQ-45 feedback on a program level. Therapists in the current study received only basic training on the interpretation of the OQ-45 feedback. They may not have considered sharing the feedback with clients or may not have known how to incorporate the feedback into sessions. It appears to be very likely that program-level training on the clinical applications of feedback instruments increases the effectiveness feedback interventions.

As with clients, therapists in the current study generally did not discuss feedback with their supervisors. Only 2 therapists reported ever sharing the feedback with supervisors, “rarely” in both cases. It appears that supervisors did not request information regarding the progress feedback therapists were receiving. It is unclear whether this was due to unfamiliarity with the feedback or simply because supervisors did not consider the feedback valuable. At any rate, the incorporation of feedback into supervision would be likely to facilitate improvement in trainees’ abilities to interpret and apply standardized progress measures.

Positive correlations were found among all feedback ratings made by therapists. The extent to which therapists valued individual feedback administrations was most strongly related to their perceptions of the accuracy of the feedback. However, therapists’ intent to make behavioral changes on the basis of feedback was most strongly related to how motivational they considered the feedback to their work with the specific client. The

impact of feedback interventions may potentially be strengthened by increasing the extent to which it is motivational. Several characteristics of feedback have been theorized to increase motivation; these include feedback indicating discrepancies between current and target performance, feedback with velocity cues, computerized feedback, and frequent administrations of feedback. Some recent evidence (Alder, 2007) suggests that individuals are most motivated to perform when they have personal control over the frequency of feedback administrations. This may be especially relevant in the context of feedback to therapists; allowing therapists to administer progress measures when they desire feedback may increase their investment in applying the feedback. Selective administration may also be more cost-effective when using measures that do not allow for unlimited copying (as does the OQ-45 license). Percevic, Lambert, and Kordy (2006) similarly suggested that the monitoring of outcomes does not need to be conducted at each session:

Outcome monitoring can be organized on occasion; that is, reassessment may be initiated when there is an external reason for knowing the patient's status (e.g., when the patient or the therapist is considering termination). Because the previous course of improvement does not enhance the prediction of the further course, no predictive information is lost when patients do not get assessed more frequently. (p. 369)

However, Percevic and colleagues (2006) noted that session-by-session assessments may help therapists make decisions regarding the proper timeline for termination. Additionally, it should be noted that all of the previous research on feedback interventions with the OQ-45 has utilized session-by-session monitoring. Although a

more tailored monitoring schedule is intuitively appealing, research has not yet examined whether the same effects can be obtained with intermittent assessments.

Therapists in the current study demonstrated dramatic improvement over time in their abilities to estimate client change from week to week. However, the current design did not include a control group of therapists that did not receive feedback. It is unclear, therefore, whether such improvement in estimation accuracy would have occurred naturally in new therapists who did not receive feedback. This issue could be readily addressed in subsequent research with trainee therapists by providing feedback to a random half of therapists and withholding feedback from the other half. If receiving feedback does in fact lead to improvements in therapists' clinical judgment, the universal implementation of feedback programs in training clinics would be highly beneficial.

Examination of the correlations between therapists' estimates and OQ-45 estimates of client change across cutoff points provides some information regarding the rate at which improvement in therapists' estimation abilities occurred. Change was most notable for the first 10 sessions versus the last 10 sessions. Only three therapists had completed enough sessions to examine this cutoff; the analysis using a cutoff of 10 sessions therefore reflected changes in the therapists who had received the most feedback administrations (at least 29). Therapists therefore appeared to benefit from repeated feedback over time.

Limitations

Several limitations to the generalizability of the current findings should be noted. The most readily apparent limitation was the relatively small sample of therapists (N=5)

and clients (N=19) included in the analyses. A repeated-measures design was utilized in order to maximize the observations made; however, after collapsing observations by client means, the number of observations for each dependent variable remained relatively low. The limited sample size served to constrain power for statistical analyses in the current study.

A related consideration is the relative homogeneity of the therapists in the current study. All therapists were Caucasian females in their first year of practicum experience in a clinical psychology doctoral program. It is unknown whether findings in the current sample would generalize to more diverse samples of trainee therapists of varied gender, ethnicities, or training models. There is no theoretical reason to expect that the current findings would not be replicated among therapist samples of mixed gender or of various ethnicities, and the current results are largely consistent with those of similar studies. In contrast, therapists in other training models (e.g. counseling psychology and marriage and family therapy) may respond differently. For example, therapists who receive less coursework and emphasis on standardized tests may find feedback less useful. However, these possibilities must be evaluated through further research.

The current research used an explorational design including correlational and quasi-experimental analyses. Experimental control was therefore minimal; no alterations were made to existing clinic procedures. Therapists received only a brief introduction to the OQ-45 and feedback, and were not given specific instructions regarding the utilization of feedback. This design maximized the ecological validity of the research by measuring therapist responses to feedback as they received it in a clinical context and without controlling aspects of the feedback itself. Alternate research strategies may

include randomly assigning therapists to view standardized feedback (e.g., standard negative and positive feedback) and report on their perceptions of it. However, such methods may suffer by reducing the personal relevance of feedback to the therapists.

Conclusions and Future Directions

The current study, in conjunction with previous research on feedback interventions, identified several characteristics that are likely to contribute to the utility of progress feedback to therapists. Therapists liked being able to track client progress over time, suggesting that frequent measurement and feedback administration is beneficial. It is possible that allowing therapists to set their own feedback schedule (administer the questionnaire to clients when they want feedback) would increase the motivational aspects of feedback; future research should examine this possibility given the potential time and cost savings.

The current results suggest, as hypothesized, that therapists find feedback more valuable when it indicates a significant discrepancy between expected response and the actual change made by clients. It is important, therefore, that measures utilized to track progress be sensitive to weekly changes in client functioning. Additionally, the comparison of progress to some objective standard appears beneficial. Objective standards may include expected response curves, as per the OQ-45 feedback. Another alternative type of feedback is to provide a comparison to a clinical cutoff criterion (Percevic, Lambert, & Kordy, 2006). Given that therapists in this and prior studies have not generally identified intended actions in response to feedback, it is likely to be

beneficial to provide potential suggested intervention strategies in conjunction with feedback.

Several program level considerations are likely to be relevant when feedback systems are adopted. Program directors are likely to increase the global effectiveness of feedback interventions by providing thorough training for therapists who will be receiving the feedback. Such training might include explications of the rationale and research support for progress feedback, training in the interpretation of feedback, and training regarding potential applications of feedback (e.g., sharing feedback with clients). Such an orientation is likely to increase therapists' comfort with the feedback and may increase the degree to which feedback is accepted and valued. Additionally, the involvement of clinical supervisors in orientation to the feedback program would likely be beneficial, as would incorporation of feedback results into supervision.

The administration of progress feedback over time appears beneficial, as two therapists reported that they valued the feedback more over time. Additionally, therapists' abilities to estimate weekly change in their clients' functioning increased over the course of this study. Future research should utilize experimental controls to evaluate whether the reception of feedback does in fact lead to increases in clinical judgment abilities.

The current research primarily focused on characteristics of feedback itself as variables in therapists' perceptions and utilization of feedback. However, it is likely that individual therapists may respond differently to various types of feedback. Future studies may consider whether certain therapist characteristics (e.g., years of training and personality traits) influence the manner in which they receive progress feedback. Similarly, the current results warrant replication to more diverse therapist samples.

Despite the demonstrated effectiveness of the provision of progress feedback to therapists, the mechanisms of change continue to be difficult to identify. Therapists in the current study did not generally identify any specific changes to their therapeutic strategies on the basis of feedback. It is highly likely that a portion of the effectiveness of feedback is due to the increased time and consideration that therapists put into cases by reviewing feedback. This possibility may be examined by investigating the possible role of common factor variables (e.g. therapeutic alliance) as mediators of the effect of feedback on outcomes. Regardless of the mechanisms involved, the use of standardized outcome measures to monitor client progress (and the subsequent provision of feedback to therapists) is an important trend. This trend has been influenced by forces both within and outside of the field of psychotherapy. Future research is essential in order to maximize the effectiveness of such feedback interventions.

APPENDIX
FEEDBACK MEASURES

Feedback Rating Form

Client Name: _____ Date of Session: _____

Please provide your impressions of the current feedback (for this client at this session):

1. This feedback was an accurate reflection of my client's status at the time of the session.

1	2	3	4	5	6	7
Completely Disagree	Somewhat Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat Agree	Completely Agree

2. This feedback is valuable to me in conceptualizing and treating this client.

1	2	3	4	5	6	7
Completely Disagree	Somewhat Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat Agree	Completely Agree

3. This feedback increased my motivation to help my client work toward his/her goals.

1	2	3	4	5	6	7
Completely Disagree	Somewhat Disagree	Slightly Disagree	Neutral	Slightly Agree	Somewhat Agree	Completely Agree

4. I will take specific actions with my client as a result of this feedback (any action that you would not have considered or implemented before receiving the feedback).

1	2	3	4	5	6	7
Definitely Not	Probably Not	Possibly Not	Unsure	Possibly	Probably	Definitely

Please note any specific actions you are considering: _____

5. Do you have any other comments or reactions to the feedback?

Feedback Experience Questionnaire

We are interested in your experience as you received feedback regarding your therapy clients. Please take a few minutes to complete the following survey. Your responses will be confidential. We are interested in both the positive and negative aspects of the feedback. Please be honest and detailed in answering questions. Thank you for your participation.

Please rate the following questions based on your overall usage of the OQ-45 feedback reports.

	Never	Rarely	Sometimes	Frequently	Almost Always
I carefully read the feedback.	1	2	3	4	5
The feedback was understandable.	1	2	3	4	5
The feedback was useful.	1	2	3	4	5
The feedback reports saved me time.	1	2	3	4	5
The feedback made me think about my relationship with the client.	1	2	3	4	5
I discussed the feedback with my supervisor.	1	2	3	4	5
I discussed the feedback with the client.	1	2	3	4	5
Receiving or discussing the feedback made me feel uncomfortable.	1	2	3	4	5
The feedback was frustrating.	1	2	3	4	5
The feedback surprised me or was not what I had expected.	1	2	3	4	5

Please rate the following components of the OQ-45 feedback from 1 (“Not helpful at all”) to 10 (“Extremely helpful”) in terms of how helpful and useful they were to you.

___ The progress graph (chart)	___ The alert status (red, yellow, green, white)
___ Feedback message (paragraph)	___ Critical items summary
___ Current distress level category	___ Categorization of change from initial score (reliably improved/worse, no change, etc.)

What did you like about receiving the feedback?

What did you dislike about receiving the feedback?

Were there certain characteristics or situations in which you felt feedback was especially beneficial (and if so what were they)?

Were there certain characteristics or situations in which you felt feedback was less helpful (and if so what were they)?

Have your opinions about the feedback changed in one way or another since the beginning of the year (and how so)?

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