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Therapist Utilization of Evidence-Based Treatment Monitoring

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Therapist Utilization of Evidence-Based Treatment Monitoring

Jason S. Southwick

A dissertation submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

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ABSTRACT

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The early identification of non-responding psychotherapy clients and reducing their treatment failure rates are the principal functions of Clinical Support Tools (CST). Nearly two decades of patient-focused research have produced several “evidence-based treatment monitoring” (EBTM) practices, that measure individual patients’ responses to theory-guided treatments and alert therapists of clients who are at risk of eventual treatment failure. Clinical Support Tools are a quality management program that bundle several EBTM practices, and have been shown to improve outcomes in failing clients (Shimokawa, Lambert & Smart, 2010). Appropriately, EBTM has generated significant interest as it expands notions of what constitutes evidence-based practice with non-responding patients (APA, 2006). There is a practical need to disseminate Clinical Support Tools to a wider audience of clinicians and practice environments. The current study was designed to advance understanding of CST mechanisms by providing detailed, qualitative data that demonstrate how CST procedures are utilized in routine practice. Eleven doctoral-level psychologists experienced in using Clinical Support Tools at a university counseling center were interviewed about their use of Clinical Support Tools with a recent non-responding client and about their general experiences with past non-responding clients. Clinicians’ responses were categorized as Actions, Decisions, or Attitudes, and were subjected to inductive, thematic content analysis. Results were interpreted to indicate which CST functions were active or inactive in the therapists’ routine care. Findings indicated that therapists utilized CST resources to monitor patient status, to identify problems that may have explained therapy non-response, and to initiate corrective interventions. Although it was clear that therapists used the CST signal-alarm system to initiate a problem assessment and corrective intervention, it was less clear whether therapists used CST’s to determine significance of client change or to determine the client’s prognosis. This observation needs to be confirmed through further investigation. Future research that quantifies CST utilization and investigates implementation-outcome relationships is recommended. Finally, practical avenues for increasing the influence and prevalence of EBTM practices in behavioral healthcare are discussed.

Keywords: assessment, evidence-based treatment, computer-based decision support systems, treatment monitoring, treatment failure, outcome feedback, qualitative, utilization.

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Therapist Utilization of Evidence-Based Treatment Monitoring

In psychotherapy, clinical assessment continues after a formal diagnosis is assigned and a treatment plan formulated. Sometimes aided by objective assessment tools, therapy providers apply observation and interviewing skills to understand the patient's current status, detect changes in symptom severity and daily functioning, predict whether therapy is on track to achieve the patient's goals, and resolve problems that stand in the way of progress. Clinical Support Tools (CST)* have been developed to assist these functions and prevent treatment failure. Briefly, the CST program a) objectively measures the patient's current functioning, b) detects when functioning is reliably improved or worsened, c) alerts when treatment can no longer be expected to produce change without corrective adjustment, d) objectively measures common therapy obstacles, and e) offers empirically-supported problem-solving resources. Below, Clinical Support Tools are discussed in terms of how therapists have historically attempted to execute the aforementioned functions, and ways in which standardized measures and problem solving tools have been shown to enhance clinician efforts. Additionally, previous research that has evaluated the summative impact of combined CST functions on patient outcomes, and utilization research that has investigated clinicians' usage of individual CST components, will be discussed.

Assessing Patient Status in Psychotherapy

The advent and proliferation of managed care over the past four decades has driven interest in defining the key outcomes desired from behavioral healthcare services. In a 2001

*In previous publications, the term "Clinical Support Tools" has been used to refer to the Assessment for Signal Clients (ASC) resources, separate from the Outcome Questionnaire (OQ) progress monitoring package. In this study, Clinical Support Tools refers to the complete package of OQ monitoring and ASC problem-solving resources.

consensus statement, the American College of Mental Health Administration designated improved health and psychological well-being, productive involvement in work or school, reduced victimization and legal involvement, and housing status as primary outcomes (cf. Morris & Adams, 2001). Of these indicators, psychological well-being is arguably the most complex and challenging to measure. Psychosocial treatment measures vary by the content area assessed (e.g., cognition, affect, behavior, adaptive functioning), information source (therapist, client, third-party rater), scope of measurement (general distress, symptom domain, specific behavior), and temporal focus (enduring traits, temporary states; Lambert & Hawkins, 2004). Revealing the enormous diversity of approaches to measuring psychosocial outcomes, Froyd, Lambert, and Froyd (1996) reviewed 334 outcome studies published over a 5-year period in the 1980's. In this relatively brief segment of the psychological treatment literature, they found that clinical researchers had administered a total of 1,430 different treatment-related measures, of which 840 were used only once during the 5-year period. The multiplicity of schemes that have been used to capture patients' treatment related concerns in research settings prompts examination of clinician-based treatment assessment practices in routine psychotherapy.

The practice of objectively measuring patient concerns during treatment has historically been associated with very few of the prominent theory-guided psychotherapy systems. In approaches such as traditional and relational forms of psychoanalysis, person-centered therapies, and existential-humanistic therapies, therapists' observations, interviewing skills, and self-awareness are considered primary assessment tools. The supplemental use of monitoring forms such as behavioral diaries and self-report scales has been associated mainly with the behavioral, cognitive, and integrative therapies (Gurman & Messer, 2003). Recent evidence has also revealed inter-disciplinary differences in therapist attitudes toward standardized clinical

measures. Recruiting a sample of over 1,400 child-adolescent practitioners, Jensen-Doss and Hawley (2010) surveyed psychologists, social workers, marriage-family therapists, counselors, and psychiatrists. Clinicians in general rated standardized measures neutrally, and were more positive about their psychometric properties than their practicality or incremental value beyond clinician judgment. Psychologists rated objective measures as more clinically useful and practical than did practitioners of other disciplines, and for all providers, practical concerns were the most important predictor of whether clinicians use standardized measures.

Subjective, therapist-based assessment strategies are common to all mainstream psychotherapies (Gurman & Messer, 2003), and have several useful features. Observation allows the therapist to sample the client's behavior directly, and can validate the client's self-report. Interviewing can yield as much information as the client is willing to share, and is flexible in that the therapist and client can freely alternate between topics of interest. Given the face-to-face format in which therapy is usually conducted, it is also true that clinicians spend more time examining patients' behaviors and verbal statements than any other source of clinical information. Indeed, sheer exposure to these convenient data sources may explain why clinicians surveyed by Hatfield and Ogles (2006) estimated that observation and interviewing contribute around 70% of the influence to their routine clinical decisions relative to other information sources, with standardized progress measures contributing only 10% to decision making.

Despite its practical features, the limitations of subjective clinician-based assessment are well documented, and it has been suggested that clinicians too frequently base their diagnoses and case formulations on inadequate data (Garb, 2005). Subjective assessment is time-consuming, provides a relatively narrow sample of behaviors to support conclusions about the

patient's current status and concerns, and is subject to several threats to accurate conclusions and decision making. Threats to observation-based assessment were described by Barrios (1993), who identified four obstacles to reliable, valid data gathering: *definitions*, when the observer lacks a clear conceptualization about which behavioral responses correspond to a psychological construct of interest; *demands* associated with tracking behaviors of interest that are numerous or complex; *distractions* caused by external or internal events that compete for the observer's attention; and *discontent* resulting from unpleasant interactions with the individual being observed. Psychological well-being is a topic of expertise among psychologists and other therapy providers. Nonetheless, it is a multi-faceted construct, and its adequate assessment requires both time and attention. Thus, several circumstances associated with managing a therapy session may limit clinicians' ability to adequately assess patient status using subjective methods only.

Objective measures are those that employ scoring rules to dictate response values, which do not vary across raters (Cohen & Swerdlik, 2005). In therapy, objective progress measures efficiently sample a wide range of behaviors, produce index scores that may be compared to normative data, and possess other psychometric properties to support clinical judgment and decision making. As the original component of the current Clinical Support Tools program, the Outcome Questionnaire (OQ; Lambert et al., 2004; Umphress, Lambert, Smart, Barlow & Crouse, 1997; Vermeersch, Lambert & Burlingame, 2000) is a patient-report measure of mental health designed for repeated progress monitoring throughout therapy. The OQ is composed of items measuring symptom distress, interpersonal adjustment, and role functioning, and alerts the clinician to critical symptoms such as suicidal ideation. The OQ has strong psychometric properties, both in terms of internal consistency and test-retest reliability, and its construct

validity has been demonstrated through correlations with other instruments that measure depression, anxiety, and social-interpersonal functioning. Client OQ scores are also comparable to a variety of standardization samples, including community (non-patient), employee assistance program, managed behavioral health, outpatient mental health center, and inpatient mental health norms (Lambert et al., 2004). Overall, the treatment measurement properties of the OQ have been empirically validated to assist in clinical assessment of patient status.

Detecting Significant Change

The reliable and comprehensive assessment of symptom severity and adaptive functioning is the cardinal function of treatment monitoring measures, and complements clinicians' subjective evaluation of patient well-being. Yet, status measurement is only the first of several clinical functions performed by sophisticated monitoring instruments, which have empirically demonstrated *sensitivity to therapy-related change* (Vermeersch et al., 2004), *index the significance of change* as statistically significant (i.e., that the patient is reliably improved, unchanged, or worsened) and/or clinically significant (i.e., that the patient has entered the normal range of functioning; Lambert & Ogles, 2009) and *provide advance warning of eventual treatment failure* in at-risk patients (Lambert, Hansen & Finch, 2001).

Reviews of psychotherapy effectiveness indicate that the average treated client will experience a more favorable outcome than approximately 70% of persons who remain untreated (Lambert & Ogles, 2004). Unfortunately, the improvements in some clients are balanced by lack of change or worsening in others. In the past, treatment failure has been synonymous with patient deterioration, or when clients leave treatment reliably unhealthier than at the outset. However, clinical researchers are increasingly equating treatment failure with non-response, or when clients leave therapy unimproved (Lambert, 2011).

In a meta-analytic review of patient outcomes in randomized clinical trials, Hansen, Lambert, and Forman (2002) reported that 33% of patients left treatment without experiencing reliable symptom improvement, despite having received an evidence-based treatment (EBT) for nearly 13 sessions on average in a controlled research setting. For patients who respond poorly to initial efforts to treat, simply intensifying the EBT may not be sufficient (Durham et al., 2004). Given the high rates of non-response to many of our field's best-validated treatments, evidence-based "Plan B" strategies are called for when frontline therapy does not help.

Failure rates in research trials pale in comparison to naturalistic care settings, where up to three in four patients may leave therapy unimproved (Hansen et al., 2002). Even after accounting for the large number of patients in routine care who do not attend enough sessions to significantly benefit from therapy, these findings show that treatment effects drop outside of the research clinic (Hansen, Lambert & Forman, 2006). Based on outcomes observed in a large sample of children and families who received services in managed care ($n = 936$; 45% not reliably improved, 14% reliably worse) and community mental health settings ($n = 3,075$; 56% not reliably improved, 24% reliably worse), the need to reduce treatment failure in non-adult populations appears to be an even more urgent concern (Warren, Nelson, Mondragon, Baldwin & Burlingame, 2010). Overall, it is evident that a significant minority of patients deteriorate while receiving psychotherapy. Moreover, an alarming majority of patients in routine care do not receive enough benefit from treatment to be considered reliably better off.

Presumably, if therapists identify failing clients in advance, therapy can be modified to prevent poor outcomes. To explore ways in which progress monitoring can affect clinical decision making, Hatfield and Ogles (2006) provided therapists a case vignette that included brief statements about the client's progress or worsening since the outset of therapy. Clinicians

received a vignette with the client's verbal report ("During your next session with Brian, he explains to you that he is feeling much better / much worse than when he started therapy."), an objective monitoring report ("Scores from a routinely administered outcome measure completed by Brian before each therapy session indicate that the severity of his symptoms has significantly improved / worsened"), both reports, or neither report. Some therapists' vignettes contained conflicting information (e.g., client reporting improvement, measure reporting worsening). Therapists rated their impression of the client's degree of change, and decided whether they would adjust the client's treatment. For vignettes that were characterized by only negative reports, nearly all therapists surveyed (82% to 89%) responded that they would alter the client's treatment.

The results of Hatfield and Ogles (2006) have clearly shown that when therapists learn a client is not improving, they recognize the need to modify treatment. However, recent innovative research has questioned whether clinicians in routine practice are successfully identifying those patients who are not improving. Hatfield, McCullough, Frantz, and Krieger (2010) conducted a retrospective review of progress notes of therapy patients who had reliably deteriorated, as demonstrated by an OQ score increase of 14 or more points within the first 10 sessions after intake. The investigators searched for evidence in the notes that the therapist had identified the client as deteriorated. Almost 80% of the time, therapists failed to note that the client appeared worse or had reported worsening symptoms. In a more sensitive test of clinicians' ability to detect change, the researchers selected cases where the client had experienced extreme symptom worsening from one session to the next (i.e., OQ score had increased by 30 or more points). Therapists failed to identify nearly 70% of these clients in their progress notes.

Patient-focused researchers have drawn from the psychometric and normative properties of standardized progress measures to develop a standard method of determining whether fluctuations in patient status indicate meaningful change (e.g., Jacobson & Truax, 1991; Lambert & Ogles, 2009). Applying significant change formulae to the Outcome Questionnaire-45, Lambert and colleagues (1996) have found that a score increase or decrease of at least 14 points on the OQ-45 indicates statistically reliable worsening or improvement. Thus, OQ scores reflecting this degree of change (i.e., between intake and the most recent appointment) are considered to indicate meaningful changes in the patient's mental health concerns, which cannot be fully explained by instrument error. Furthermore, OQ scores lower than 64 have been found to effectively differentiate patients from non-patients. Thus, clients achieving scores in this range as a result of therapy are considered to have recovered, or experienced clinically significant change (Lambert et al., 1996).

Currently, the OQ monitoring system delivers significant change updates to therapists through the OQ-Analyst application. Therapist reports show a client's OQ scores across sessions represented by a line graph, which also portrays the cutoff line distinguishing the normal and clinical ranges of functioning. A color-coded signal (white) is displayed for those patients who have achieved recovery status, and is accompanied by an automatically-generated recommendation for the therapist to consider termination. For clients who are not yet recovered, the OQ report indicates whether reliable, or statistically significant change (i.e., reliably improved, not reliably improved, reliably worsened) has occurred. In summary, change detection indices are derived from the psychometric and normative properties of progress measures, and can assist clinicians in determining whether patients have achieved meaningful change at any point during therapy.

Prognosing Significant Change

Clinicians must distinguish clients who are not progressing in order to correct the course of therapy, and some research suggests that they do indeed adapt treatment for known non-responders (Hatfield & Ogles, 2006). Yet, in routine practice, clinicians fail to identify the vast majority of patients who are deteriorating (McCullough et al., 2010). Recent patient-focused research has explored whether therapists can use information about their client's progress to assess client prognosis, to determine whether therapy is on track to produce desired outcomes before the client leaves treatment.

Hannan and colleagues (2005) asked clinicians at a university counseling center to consider their client's status at intake and at the current session to determine whether significant change had been achieved, and whether the client would ultimately benefit from therapy before leaving treatment. To assist in predicting client outcomes, therapists were informed of the counseling center's historical deterioration rate of 8%. Overall, therapists identified 16 (5%) clients as having deteriorated since the start of therapy. Yet, of these 16 clients, therapists predicted that 15 would leave therapy with a favorable outcome. Despite knowing the average rate of deterioration in the counseling center, therapists predicted that just 3 of 550 (0.5%) clients would leave therapy worse off.

Concerns that clinician prognoses are too often based on subjective, intuitive data interpretation have been discussed at length (Ægisdottir et al., 2006; Meehl, 1954). Failure to apply objective, probabilistic rules for interpreting data (i.e., actuarial judgment) may occur because clinicians do not appreciate the relevance of base rates to prediction or because they consider their case or themselves exceptional (Dawes, Faust & Meehl, 1989). Empirically-developed tools that can reliably predict negative outcomes in psychotherapy have only recently

been introduced to clinicians. Measures that are highly sensitive to future treatment failure are now available for use in routine practice, and yet it is unclear whether the function they serve is represented in the practices of most clinicians. Considerable evidence suggests that objective progress data, if interpreted using objective-actuarial rules, could assist therapists in developing more accurate treatment prognoses and identifying not-on-track patients.

Findings that a substantial minority of patients are not helped by evidence-based treatments (EBT), and that therapists frequently do not detect or predict treatment deterioration, have turned attention to objective tools that might support these functions. Concern for those patients who do not respond as expected to theoretically guided treatments has given rise to “patient-focused research,” which investigates methods for early identification of therapy non-responders and the effects of alerting therapists (Howard, Moras, Brill, Martinovich & Lutz, 1996; Lambert, Hansen & Finch, 2001). Fifteen years of patient-focused research have produced a body of *evidence-based treatment monitoring (EBTM)* practices that complement theoretically guided treatments. Quality management programs such as Clinical Support Tools bundle EBTM strategies to index non-response during treatment, warn of poor prognosis, and facilitate corrective action.

Based on a large sample of outpatient OQ scores, Finch, Lambert, and Schaalje (2001) calculated recovery curves to represent expected client response to treatment on a session-by-session basis. Confidence-interval boundaries for expected change were delineated, and used to develop several “signal-alarms” that indicate a client’s current prognosis or recovery status. Red or yellow alerts identified clients whose treatment responses deviated most significantly from expected progress trajectories. Clients demonstrating expected progress were assigned green signals, and normal functioning or recovered status was indicated by a white signal.

Further research using these actuarial methods has demonstrated that the patients who are at greatest risk of treatment failure can be accurately identified. In a university counseling center sample, Hannan and colleagues found that, out of the 24% of clients flagged during treatment as potential non-responders (i.e., 119 of 492), 80% of these eventually left therapy unimproved or deteriorated. Thus, only 1 in 5 signal-alert cases eventually achieved a favorable outcome. Although the progress alert did not identify a majority of the clients who would leave therapy unimproved, it was 100% sensitive to the clients who deteriorated (i.e., all 36 of 492, or 7% of total clients; Hannan et al., 2005). Thus, EBTM methods have demonstrated clear success in the early identification of clients who are most likely to need corrective treatment modifications.

Presumably, patients would also be interested to know early on if their current therapy cannot reasonably be expected to meet their needs (see Hawkins et al., 2004). Client preferences for prognostic updates during ongoing psychotherapy have not been systematically investigated, however. Clearly, clinicians' utilization of prognostic assessment to guide psychotherapy, and client preferences for prognostic updates as therapy unfolds is an area ripe for future research.

Summative Evaluation: Objective Progress Monitoring

To characterize the combined effects that objective status monitoring, change detection, and prognostic assessment tools can have on patient outcomes, Lambert and colleagues (2003) conducted a meta-analysis of three OQ monitoring studies involving a total of 2,605 clients treated at a university counseling center (Lambert et al., 2001; Lambert et al., 2002; Whipple et al., 2003). Consistent with the theoretically-supported functions of Clinical Support Tools, non-responding clients whose therapists received continuous updates on their status, progress, and prognosis experienced better outcomes (associated with a moderate effect size, $d = 0.39$) and demonstrated more cost-effective utilization of services. Importantly, 35% of clients who had

been predicted to deteriorate experienced clinically significant improvement, compared to 21% of not-on-track clients in the treatment-as-usual condition. Failing clients whose therapists received progress updates also attended an average of 1.5 sessions more than their no-feedback controls following the signal alarm, suggesting they were less likely to prematurely terminate therapy.

Component Utilization: Objective Progress Monitoring

The utilization of individual CST functions served by the OQ system (i.e., status assessment, change detection, and early prognosis) has not been directly studied. General research on the adoption of standardized treatment monitoring instruments suggests that, for the vast majority of practitioners, even basic monitoring applications do not currently play a role in patient care. Clinician surveys have generally pointed to practical obstacles posed by progress monitoring, more so than negative attitudes toward the practice, as the primary cause for limited adoption.

In a survey of 874 U.S. psychologists, Hatfield and Ogles (2004) found that a sizeable minority of practitioners (37%) report using outcome measurement with their therapy clients. Researchers found that demographic variables were significantly related to utilization: child-adolescent therapists were significantly more likely to measure outcomes than adult therapists (54%, 32%). Therapists employed by an agency were more likely adopters than therapists in group practice or private practice (50%, 35%, and 29%). Cognitive-behavioral therapists had higher utilization rates compared to eclectic and insight-oriented therapists (50%, 36%, and 24%). Clinicians surveyed who were not using progress measures cited practical concerns, such as paperwork burden, time spent, extra burden on clients, and lack of resources. Some also reported attitudes that progress measures are not helpful.

In their survey of child and adolescent practitioners' use of evidence-based assessments, Jensen-Doss & Hawley (2010) found that, although attitudes toward the more general practice of evidence-based assessment correlated with use of standardized measures, practical concerns were the strongest and only independent predictor of use. The finding that clinicians view routine session monitoring more favorably after basic obstacles to consumption are removed (Linacre, 2010) suggests that progress monitoring will be better accepted and utilized when it does not require significant time or attention from clinicians. Given the practical challenges of objective progress monitoring, we should not expect that a majority of clinicians will adopt these tools without technological and institutional support. Our experience suggests that automating measure administration, with results delivered directly to clinicians' hands or computer screens is an important first step toward integration.

The above findings indicate that a substantial minority of practitioners administer standardized measures to track patient progress, but for most clinicians subjective progress monitoring is the norm. Practical concerns remain a deterrent to adopting evidence-based treatment monitoring in clinical practice. Also, practitioner utilization of the other CST functions served by the OQ, such as use of significant change indices, is unknown: the OQ-45 designates clients' status at any given session as recovered, improved, unchanged, or deteriorated, yet it is uncertain whether or how clinicians make use of this information to guide their practice. Likewise, whether or how clinicians utilize signal alerts that predict the likelihood of unfavorable therapy outcomes is unclear.

Problem Identification and Resolution

How do therapists determine what is wrong when therapy is not helping? Undiagnosed co-morbid conditions (Zimmerman & Chelminski, 2003), need to refer for medication

consultation (Beitman & Saveanu, 2005; Guidi, Fava, Fava & Papakostas, 2011), or unutilized treatment options may be considered as potential contributors. Using standardized measures of common factors associated with poor progress in therapy, clinicians can objectively assess possible reasons why the client is not making expected gains. Indeed, the limitations of direct observation (Barrios, 1993) alluded to previously provide several rationales for using objective measures to enhance clinical problem identification.

Common therapy obstacles, such as therapist-patient alliance (e.g., agreement on therapy goals and tasks, bonds of trust and attachment; Bordin, 1979; Tracey & Kokotovic, 1989) and social support (e.g., from family, friends, and significant other; Dahlem, Zimet & Walker, 1991) are multifaceted, and lend themselves well to measurement with a structured, standardized questionnaire. By relying solely on unstructured interviewing, clinicians risk conducting a superficial assessment of complex problem domains (e.g., Reuveni, Tarasiuk, Wainstock, Ziv, Elhayany, et al., 2004; Zimmerman et al., 2003).

Dissatisfaction from working with clients who do not improve is another potential obstacle to effective problem detection. In their preliminary meta-analysis of counter-transference interventions, Hayes, Gelso, and Hummel (2011) reported that improved management of negative reactions to clients was moderately correlated with clients' psychotherapy outcomes (average weighted $r = .56$). Whether therapists respond negatively to treatment non-responders as identified by the OQ monitoring system has not been investigated. Yet, some practitioners might feel dissatisfied working with clients who do not improve in response to the therapist's treatment of choice. Recent evidence has linked therapists' feelings of self-importance, confidence, boredom, and related emotions to patient treatment response

(Rossberg, Karterud, Pedersen & Friis, 2010), and has shown that therapist reactions to clients have implications for therapy outcomes (Hayes et al., 2011).

In summary, an assortment of circumstances, some of which may be directly related to working with non-responding clients, may limit clinicians' effectiveness in identifying sources of therapeutic impasse. Accordingly, we might expect that objective, empirically-derived measures of common therapeutic obstacles would enhance clinicians' problem-identification accuracy with non-progressing clients. The Assessment for Signal Clients package is composed of several problem solving resources that guide clinicians to consider multiple sources of therapeutic impasse. Select problem domains are measured using the Assessment for Signal Clients (ASC; Lambert et al., 2007), a brief instrument that is administered at the client's first OQ signal-alarm. The ASC employs cut scores to alert therapists of atypical client responding to items or subscales (see Appendix B, Figure B1, Sample Assessment for Signal Clients Report). The CST Decision Tree (see Appendix B, Figure B2, Decision Tree) directs therapists to consult ASC results, which identify problems with therapeutic alliance, motivation, adverse life events, or social support. The ASC manual provides a compilation of interventions that correspond to each ASC domain, to assist clinicians in selecting an empirically-supported strategy. Finally, the Decision Tree prompts therapists to consider other corrective actions, which may address the patient's failure to improve: re-evaluating the patient's diagnosis, considering unexplored treatment options, or referring the patient for medication consultation.

Summative Evaluation: Objective Progress Monitoring with Problem Solving Tools

Whipple and colleagues (2003) introduced the measurement of constructs that evolved into the Assessment for Signal Clients (Lambert et al., 2007) resources. Replicating previous findings that the combined OQ progress feedback system improves patient care, Whipple et al.

(2003) also discovered that problem-solving resources amplified the effects of OQ monitoring in non-progressing clients. Their reported effect sizes ($d = .70$ compared to treatment as usual (TAU) for OQ/CST tools and $.28$ compared to TAU for OQ tools only) confirmed that clinicians gained significant advantage by using both sets of CST resources to help non-responding clients. Subsequent trials of the full Clinical Support Tools program by Harmon et al. (2007) and Slade et al. (2008) validated previous findings, while updating CST research methodology and feedback delivery models. Notably, Slade et al. (2008) found that instantaneous OQ results delivery (via the OQ—Analyst software application, www.oqmeasures.com) and one-week turnaround of ASC results improved treatment cost-effectiveness relative to delayed results delivery (i.e., one-week OQ report, two-week ASC report).

Shimokawa, Lambert, and Smart (2010) subjected the CST trial data collected by Whipple et al. (2003), Harmon et al. (2007), and Slade et al. (2008), as well as those of earlier OQ monitoring studies (i.e., Lambert et al., 2001; Lambert et al., 2002; Hawkins et al., 2004) to a meta-analysis. They confirmed previous OQ and combined OQ/ASC program findings using the conservative intent-to-treat analysis (ITT), which includes results of all patients, including those who were assigned to participate in OQ monitoring but left therapy before they could complete the intervention. Findings were also confirmed using efficacy analysis, which excludes outcomes data for patients who left treatment before Clinical Support Tools could be applied. Efficacy analyses indicated moderate effect sizes associated both with OQ monitoring and OQ monitoring plus patient communication (Hedges' $g = -.53, -.55$). A large effect size was found for combined OQ monitoring and ASC resources (Hedges' $g = -.70$) compared to treatment as usual (TAU).

This finding indicated that non-responding clients who remained in therapy long enough to participate in the full CST program left treatment improved by an average of 14.6 OQ points (thus exceeding the threshold for reliably significant improvement) more than non-responding clients who received treatment as usual from the same set of therapists. Comparisons within CST conditions also indicated that the full CST program adds significant benefit, beyond OQ monitoring alone (intent-to-treat analysis, Hedges' $g = -.16$; efficacy analysis that excluded non-randomly assigned patients, Hedges' $g = -.29$). These meta- and mega-analytic findings further support the effects of OQ-based status assessment, reliable change detection, and prognosis assessment. Moreover, these findings provide strong evidence that patients benefit significantly more from a treatment monitoring package that also provides problem-solving supports.

Component Utilization: Problem Identification and Resolution

To maximize the clinical relevance of their research findings, previous CST investigators have used minimally-invasive implementation checks, such as retrospective therapist surveys. In the first clinical trial of the full CST program, Whipple and colleagues (2003) found that clinicians used ASC resources with 59 (40%) of 147 not-on-track patients. The authors did not check for utilization of specific ASC-related resources.

Harmon and colleagues (2007) surveyed therapists who used the CST intervention about how they implemented ASC assessment feedback and the CST manual. Of 72 therapists (28 doctoral level and 44 graduate student therapists) 13 therapists (18%) responded to the survey. Nine therapists (69%) responded in the affirmative to, "Was the information useful to you?" Open-ended questions about CST utilization and attitudes solicited responses of various length and detail, e.g., "What, if anything, did you do with the [CST] information?", "*Discussed with client.*" "*More attentive to the social needs of the client as well as my relationship.*" "*It really*

just reaffirmed what I already knew about the client needing more social support, but it was nice to be validated.” “The information showed that there was not a good therapeutic alliance. It provided a good opportunity to use that information to process how she was experiencing therapy and what she thought of the relationship. We were able to talk through expectations, goals, and process issues.”

In a subsequent study on repeated administration of the ASC measure, Bailey (2010) surveyed therapists about their use of Clinical Support Tools with a specific signal client and whether the therapist found the ASC report or manual helpful in conceptualizing and treating the client. Therapists endorsed implementation actions in a yes/no format. Bailey (2010) reported that client outcomes were not significantly related to therapist reports of CST utilization. Utilization data were limited by narrow sampling of specific CST usages, and the absence of follow-up inquiry to clarify therapists' responses.

Washington (2010) administered a utilization survey in connection with a study of therapists' prophylactic use of ASC resources. As in previous utilization studies, results of this survey were limited by a low response rate of 31% (43 of 140 possible surveys returned). Therapists consulted ASC results in 40 cases (93%). Among these, clinicians referred to the CST manual in 22 cases (51%) and applied ASC resources in 22 cases (51%). In 8 cases (20%), the therapist did not find the ASC report helpful.

Finally, Harris (2010) investigated CST effects in a small hospital outpatient clinic staffed by six therapists. Although that study did not investigate utilization directly, it revealed significant therapist effects on CST patient outcomes. Three therapists' CST patients experienced significant benefit ($d = .32, .36, \text{ and } .37$) relative to non-CST patients, while three other therapists' CST patients on average were essentially no more improved than non-CST

patients ($d = .02, .05, \text{ and } .07$). The novel finding of therapist effects on CST effectiveness further demonstrates the need for advanced CST utilization research that indicates which CST practices are most strongly related to at-risk client outcomes.

In summary, previous efforts to characterize Clinical Support Tools utilization were limited by low survey response rates, narrow sampling of CST usage factors, and lack of descriptive detail regarding therapists' experiences using Clinical Support Tools in their practice. The current study employed qualitative interviewing methodology to investigate CST utilization in the same university counseling center where most CST trials have been conducted. There, treatment monitoring has been automated and routinely administered to all clients for several years. The ASC package has been in use for several years as well, but has remained a continuing focus of experimental research, and as such has not been made standard practice in the counseling center. In the present study, we did not explore in-depth therapist views on specific CST delivery issues (e.g., therapist preferences for printed versus electronic CST reports, or their preferred time to view CST reports), nor did we attempt to develop a comprehensive CST utilization theory (e.g., to understand causal relationships between clinicians' CST-related attitudes and their CST utilization behaviors). Primarily, this study aimed to catalogue ways in which CST's are currently influencing routine care and to identify CST functions that are currently not influencing care. Furthermore, we expected that this study would prompt recommendations for programmatic and systemic initiatives to further increase the utility of CST's, and more broadly, evidence-based treatment monitoring practices.

Research Aims and Hypotheses

Previous Clinical Support Tools research has associated improved therapy outcomes and cost-effectiveness with clinicians' use of an objective progress monitoring system, a standardized

problem-solving measure, and problem-solving interventions with non-progressing clients.

These procedures are thought to enhance therapists' assessment and intervention skills in several domains: a) assessment of patient status, b) detection and prognostication of therapy-related change, c) identification of obstacles that account for lack of progress, and d) resolution of therapy-related problems. However, it is currently unclear which aspects of the CST program are in active use among clinicians.

To investigate this question, we interviewed therapists who had several years of experience using the Clinical Support Tools at a large, university-based counseling center. Therapists reported behavioral patterns of Support Tool utilization as well as CST-related attitudes. Given the consistent history of empirical findings (i.e., from quantitative clinical trials) that associate Clinical Support Tools with improved client outcomes, we hypothesized that clinicians' experiences would support the conclusion that CST functions have been influencing their routine practice.

Method

Participants and Selection

Doctoral-level psychologists from the counseling center of a large, privately-owned university participated in the study. Participants were randomly selected from a list of full-time and part-time therapists who have had prior experience with the Clinical Support Tools and who were expected to carry a substantial therapy caseload during the study. The rationale for excluding inexperienced or inactive therapists was to select clinicians who could share diverse experiences and views about Clinical Support Tools, consistent with the strategy of "maximum variance sampling" (Patton, 1990).

Twenty-two therapists met selection criteria (i.e., doctoral level psychologist, prior experience with CST's, and carrying a substantial therapy caseload). The general characteristics of therapists who participated in previous CST studies have been described (Shimokawa, Lambert & Smart, 2010): clinicians reported providing theoretically guided treatments that were most often cognitive-behavioral or eclectic in nature, with a lower prevalence of psychodynamic and experiential therapies. In order to recruit a representative therapist sample, of a size consistent with recommendations in the qualitative research literature (Hill et al., 2005), we randomly selected 12 therapists. Therapists were informed of the nature of their participation and were reminded that participation was voluntary and confidential (see Appendix B, Figure B3, Informed Consent Document). All 12 eligible therapists agreed to participate. One participant did not complete the research interview, resulting in a sample of 11 doctoral-level therapists. After this cohort had completed the research protocol, consideration was given to potentially recruiting an additional therapist to achieve the planned sample size. However, it was felt that a "saturation point" had been achieved, beyond which additional interviews were unlikely to yield significant returns in terms of novel participant perspectives and experiences (Polkinghorne, 2005).

Procedure

Pre-interview. Researchers administered the Assessment for Signal Clients via electronic survey, when a participating therapist's client generated an OQ alert. Clients who did not comply with the electronic survey were asked to complete the CST's on handheld devices before their next session. Prior to the signal client's CST feedback session, researchers sent therapists a scheduling request (see Appendix B, Figure B4, Therapist Scheduling Letter) with suggested times for the research interview. Participating therapists were scheduled to participate

in a 50-minute research interview, to be held in the therapist's office and carried out within approximately 48 hours of the signal client's CST feedback session. The rationale for holding the interview appointment so proximal to the feedback session was to maximize therapists' recall of their recent interactions with the signal client. To minimize observer-related demand characteristics, we instructed therapists to utilize CST resources in accordance with their usual practice and judgment.

Therapist interviews. Prior to data collection, the Primary Investigator developed a semi-structured interview protocol (see Appendix B, Figure B5, Semi-Structured Interview Procedure) to be used in interviews with participating therapists. The protocol was discussed with other research team members who provided input, and a mock interview was conducted to further identify potential changes needed in the protocol. *A priori* domains of interest used to develop the interview protocol were therapists' CST-related Actions (i.e., reported use of CST resources), Decisions (i.e., circumstances in which therapists decided not to use CST resources), and Attitudes (i.e., therapists' evaluation of CST utility). We selected these domains of interest—which are by no means exhaustive—because they represented a diverse set of perspectives, from which we could explore therapists' experiences with Clinical Support Tools.

When meeting with participating therapists, the Primary Investigator introduced the purpose of the interview, reminded the therapist that the interview would be recorded, and that the therapist would be given the opportunity to review the interview transcript. (See also Appendix B, Figure B6, Ethical Measures Involved in Conducting this Study.)

Participating therapists were interviewed about their experience using Clinical Support Tools with a recent signal client. Therapists also reported their use of CST's with previous signal clients, which provided a broader sampling of therapists' CST experiences. In some

cases, unforeseen circumstances prompted the researcher to deviate from this interview format: The signal clients of Therapists 4, 7, and 8 did not attend their CST feedback sessions as anticipated, and the initial research interview necessarily addressed only the clinician's previous CST experiences. Later, after each therapist met with the signal client, the researcher conducted a brief follow-up interview to discuss the therapist's current CST experience. Therapist 11 reported that the recent signal client had terminated therapy prior to the scheduled interview; thus, the investigator focused on the therapist's past CST experiences. Finally, Therapist 6 reported having no prior history of ASC assessment, and so the interviewer focused on the therapist's current CST experiences. Presumably, Therapist 6 had prior experiences using the OQ monitoring program; unfortunately, the investigator did not inquire about that history.

To stimulate discussion of therapists' historical CST experiences, the interviewer routinely asked therapists whether their experiences with the recent signal client were qualitatively similar to their prior CST experiences. Out of nine therapists who discussed CST use with both a recent signal client and prior signal clients, only one reported not using CST's with the current client (Therapist 7). Therapists 8 and 10 noted that CST's were either more or less helpful with the current signal client than with previous signal clients, yet did not indicate that they used the CST's differently at present from the past. Overall, therapists did not indicate qualitative differences between their present and past CST utilization, which suggests that this study was successful in minimizing demand characteristics. Given the reported similarity between therapists' current and previous CST utilization, we content-analyzed the two types of statements evenly (i.e., therapists' recollections of both recent and past CST experiences), without assigning differential value to either subset of the interview data.

During each interview, the investigator took written notes of the therapist's main points as well as therapist statements that required clarification. Following the interview, the researcher reflected upon the themes discussed, the quality of interviewer-interviewee interactions, and considered whether to modify interview procedures (see also Appendix B, Figure B7, Methodological Changes Enacted during the Study). Research assistants transcribed therapist interviews. The Primary Investigator then reviewed transcripts from all 11 interviews, comparing audio and text to ensure faithful transcription.

Qualitative Methodology

Foundations. Qualitative methods are ideal when researchers want to obtain data that reflect the detailed experiences and perspectives of participants (Denzin & Lincoln, 1994; Morrow, 2007). One salient distinction between qualitative and quantitative research methods is that the former principally operates upon language-based rather than numerical representations of interesting phenomena. Qualitative methods are adaptable to most research questions and can be considered complementary to quantitative methods, for example, when exploring a topic area in preparation for quantitative study or validating the conclusions of quantitative research (Hanson, Creswell, Plano Clark, Petska & Creswell, 2005). Likewise, qualitative research can be informed and validated by quantitative findings. Qualitative methods are increasingly being recognized for their potential to impact clinical practice, which has led to greater acceptance within the clinical and counseling psychology research literature (McLeod, 2000; Morrow, 2007).

Qualitative interviews. Frequently used in psychology and related disciplines (Polkinghorne, 2005), interviewing is a qualitative data collection strategy founded on collaboration between an inquiring researcher and knowledgeable informant. The researcher

poses questions of interest in a non-restrictive format that is flexible and responsive, and informants respond with their detailed and nuanced experiences and views. A noteworthy facet of qualitative interviewing research is that of the researcher-as-instrument. Interviewee responses have the potential to change how the investigator conceptualizes the research question, and it is considered acceptable, even desirable to flexibly adapt lines of questioning contingent on whether they continue to yield information that is relevant to the research question. This phenomenon of a changing instrument is not common in quantitative or questionnaire-based research, which also measures informant experiences but does so by asking specific questions, offering a finite number of response options, and typically employs a measure that is invariant (McLeod, 2000; Polkinghorne, 2005; Rubin, 2005; see also Appendix B, Figure B8, Investigator Profile).

The qualitative researcher's role as instrument thus introduces challenges to reliability and validity of data collection not associated with the use of objective research measures. First, the researcher's skill in eliciting rich, unrestricted qualitative data is paramount (Hill et al., 2005). A foremost priority in this study was to implement quality interviewing methods to gather the most useful data possible. Hill and colleagues (2005; see also Polkinghorne, 2005) have suggested that beginning interviewers enhance their depth-interviewing skills by conducting supervised interviews. Accordingly, the primary researcher conducted a mock interview, supervised by experienced practitioners on the research team. Additionally, the researcher prepared a set of main questions and prompts to encourage breadth and depth of interviewee exploration of the topic (Hill et al., 2005; Suzuki, Ahluwalia, Arora & Mattis, 2007).

Thematic content analysis. To identify the CST-related themes embedded in therapists' interview responses, researchers adapted qualitative content analysis procedures from Schilling

(2006). Raw interview data were first coded by their relevance to three a priori domains of interest: therapists' CST-related Actions, Decisions, and Attitudes. Data were then sorted into inductively-empirically derived categories, which reflected specific themes that participants commonly expressed (see Appendix B, Figure B9, Coding Protocol; Hsieh & Shannon, 2005; Patton, 1990). Before attempting to code or categorize statements from a given interview, the investigator carefully read the entire transcript to become familiar with its content, including main themes and contextual information.

After partitioning raw data according to Action-Decision-Attitude domains, the investigator paraphrased clinicians' statements for further analysis into smaller units that conveyed a unitary meaning. When reducing clinician statements to paraphrased meaning units, the investigator strove to preserve the informant's wording as much as possible. The investigator then inductively categorized data that pertained to more homogeneous subtypes of Actions (e.g., discussing ASC results with clients), Decisions, or Attitudes. As new themes or more internally consistent classification schemes became apparent, the researcher modified category sets by merging, splitting, or creating content categories. The researcher inductively combined similar meaning units within categories to form even more specific sub-categories (e.g., specific ways of discussing ASC results with clients) from the common statements of two or more therapists. Sub-topics that were addressed by only one therapist were noted accordingly. Finally, illustrative quotes corresponding to sub-categories were selected.

Stepwise accuracy checks were carried out to promote reliability and validity in the primary researcher's data sorting and categorization (Elliot, Fischer & Rennie, 1999; Schilling, 2006). Three experienced clinician-researchers inspected randomly selected interview transcripts, which had been sorted into predetermined domains (i.e., Actions, Decisions, and

Attitudes) and reduced to paraphrased meaning units. The auditors expressed broad approval of the sorting and data reduction protocols and verified that they had been implemented reliably. When approximately half of the therapist interviews had been sorted by domain and integrated into thematic categories, the primary researcher and the three auditors convened for a second quality check, the purpose of which was to validate the categories which had been derived at that point. The auditing team expressed unanimous approval of nearly all categories. One auditor recommended that two categories under Decisions should be merged, and this recommendation was followed. Taken together, these coding and categorization audits ensured the reliable assignment of raw data to predetermined codes and the valid, inductive development of categories that were based upon common themes addressed by multiple therapists. The procedures involved in data collection, data processing, and thematic analysis are displayed in Figure 1 below.

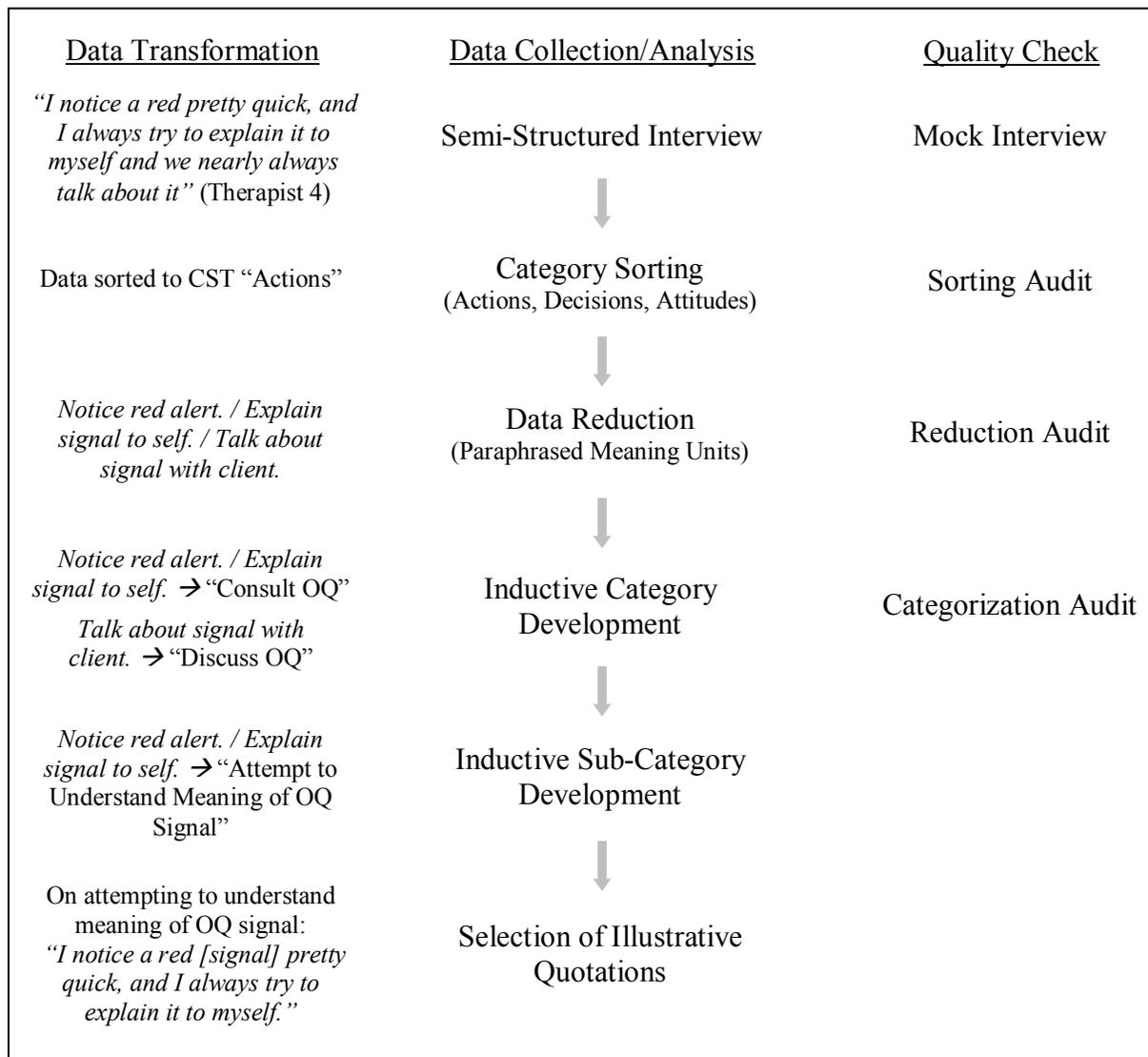


Figure 1. Data Collection and Analysis Procedures.

Program evaluation and CST research. The difference between goals of basic academic research and applied research is integral to understanding the aims of Clinical Support Tools research, throughout previous clinical feedback trials and this implementation study. Patton (1990) has discussed the philosophical divide that separates research designed to build theory and establish cause-effect relationships, from applied methods that are used when

researchers seek deeper knowledge of how to manipulate real-world phenomena. Generally, applied investigations are expected to yield knowledge that answers immediate, practical needs. Within this research tradition, program evaluation has dual aims—the evaluative aim of “summing up” program effectiveness (Patton, 1990) and the pragmatic aim of program development (Green, 1994)—and is compatible with both qualitative and quantitative methods.

Clinical trials are a notable example of an applied, outcome-focused evaluation strategy that quantitatively indexes the practical impact of a treatment program. Clinical trials have constituted the primary research strategy in past efforts to characterize influence and usage of Clinical Support Tools. Some of those studies have also investigated CST utilization, both as a fidelity check and to determine aspects of the program that might be improved.

Greene’s (1994) program evaluation research typology further defines the methods employed in prior CST trials and this current investigation. *Post-positive* evaluation is predominantly quantitative and experimental or quasi-experimental, and typically investigates program effectiveness and cost-efficiency. *Pragmatic* program evaluation selects eclectic research methods to produce practical data, which are ideal for identifying needed program improvements. Most prior CST feedback trials have incorporated elements of post-positive (i.e., aggregate outcomes associated with CST use) and to a lesser degree pragmatic (i.e., CST utilization patterns) evaluation. The current study was designed to serve post-positivist goals by indexing the prevalence of qualitative indicators that suggest CST impact on care, and pragmatic aims by identifying unused program elements that suggest needs for programmatic or systemic modifications. Thus, the goals of the present study were consistent with previous CST feedback trials, and the present study differed only in its use of qualitative data to achieve these aims.

Finally, Kalafat, Illback, and Sanders (2007) have recently modeled a mixed qualitative-quantitative research program that captures aspects of a CST research agenda. Employing a utilization measure that was derived from the qualitative results of a previous implementation study, researchers evaluated implementation-outcome relationships for a multi-dimensional school improvement program. Kalafat et al. (2007) reported that they successfully correlated student educational outcomes to teachers' implementation of program components, as defined by the questionnaire. The present study was likewise designed to support the development of a questionnaire that comprehensively defines CST utilization parameters, in support of future implementation-outcome relationships and dissemination research.

Framework for interpreting study results. It has been suggested that the selection of research methods is best made after the researcher has identified of the essential purpose of the study (Morrow, 2007; Patton, 1990). The primary justification for this study was to document the ways in which clinicians in a university counseling center discuss the Clinical Support Tools program, and thereby determine which Clinical Support Tools components are influencing clinicians' routine practice at this time. Components of Clinical Support Tools that are not widely used and thus cannot be expected to impact therapy outcomes in their present form or clinical context were of equal interest.

To interpret whether the main functions of Clinical Support Tools were active among our sample, we used the inductively categorized interview data to search for qualitative consistencies between utilization patterns and attitudes. Program components (e.g., ASC assessment results) that were both widely utilized and widely viewed as helpful were interpreted to indicate active ingredients of Clinical Support Tools. This profile of qualitative results was interpreted to encourage future efforts to more precisely document utilization rates, and to correlate utilization

data with signal client outcomes. Components that were not reported as utilized and about which clinicians did not express opinions (e.g., ASC Decision Tree), were interpreted to represent potentially inactive CST ingredients, with the express caveat that future research is needed to validate such conclusions. In summary, this study took a mixed approach to program evaluation by asking questions of both evaluative and pragmatic relevance, to identify the current influence of CST's on patient care and proposing changes to CST's and healthcare systems to boost utility and influence.

Results

Results of the content analysis are presented below as categories, sub-categories, and representative quotes, which pertain to the ways in which therapists used Clinical Support Tools, circumstances in which they determined that CST use was either not indicated, and the criteria by which they evaluated the utility of CST's. An overview of the category topics drawn from each domain is presented in Figure 2.

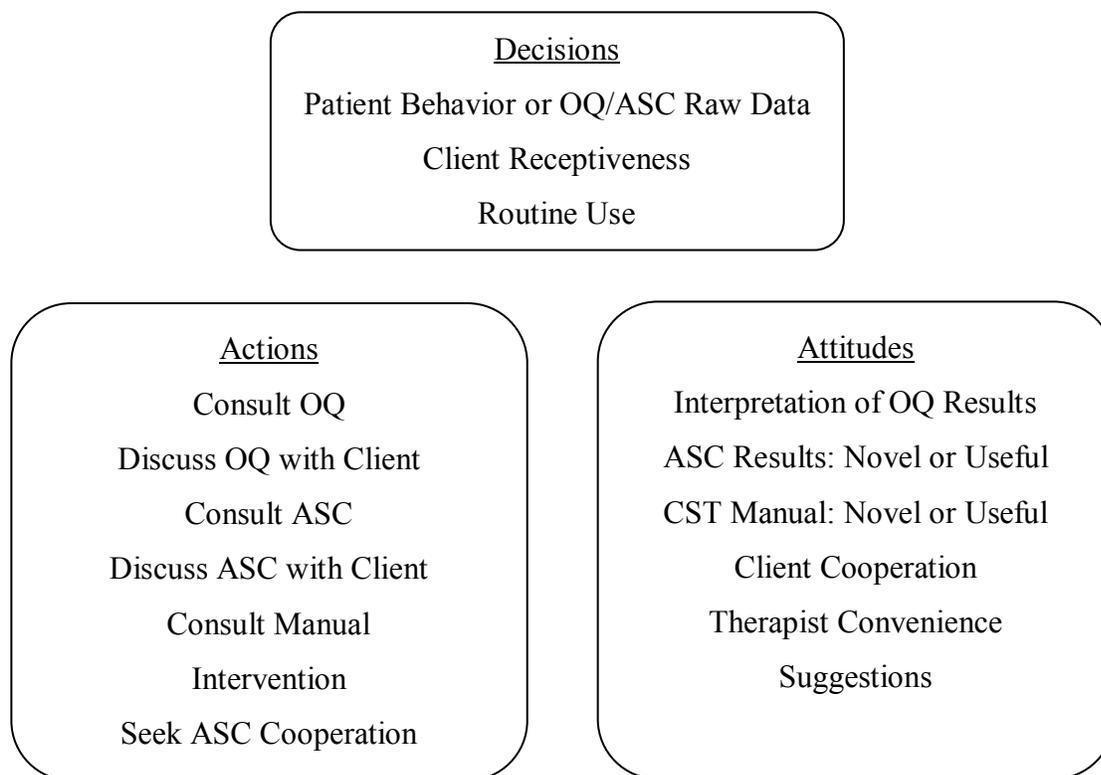


Figure 2. Results of Content Analysis by Domains (i.e., Actions, Decisions, Attitudes) and Categories.

Actions: How Do Therapists Utilize Clinical Support Tools?

Consult OQ results. Eight therapists referred to having viewed and analyzed signal clients' OQ results. Specific actions included examining the client's OQ scoring trend, critical items, and signal status; and attempting to understand the meaning of a client's OQ signal or high score.

The following interview excerpts illustrate ways in which therapists consulted OQ results. On examining a client's OQ scoring trend, critical items, and signal status:

"I'll look at [the OQ report] first, and if there's some items that pop up, if it's generally where I'm expecting it to be, ... then I'm like, "it looks like things are going okay." But if some of those items on there, like the 'suicidal,' or 'I feel like I might do something

dangerous at work, ' or 'act out at work or school', ... those are some of the items that I look at." (Therapist 8)

On attempting to understand the meaning of a client's OQ signal or high score:

"I notice a red [signal] pretty quick, and I always try to explain it to myself" (Therapist 4)

"If it's a little higher, I peruse it a little bit, just to see what is making it a little bit higher." (Therapist 8)

Discuss OQ results with client. Eight therapists reported discussing OQ results with a client in session. Specific actions included discussing the client's OQ score and trajectory and how it compares with their experience, and asking the client how he or she is feeling in regard to critical items (e.g., suicidal ideation).

On discussing the client's OQ score and trajectory and how it compares with their experience:

"I always like to talk about [the OQ report] with them, and say, what does this mean to you? Are things getting better or worse? Subjectively does it compare with what's showing up on the OQ score?" (Therapist 1)

"If you look at her OQ's, you're like, 'you're not indicating a lot of distress on the OQ.' And I tried to talk with her about ... it." (Therapist 3)

"[When] there's a significant change, that the client's reporting fewer or many more symptoms, ... that's useful for me to check out; it gives me a hypothesis or two to check with the client." (Therapist 10)

Consult ASC results. Nine therapists spoke of consulting a signal client's ASC results.

Specific actions included checking for ASC item responses or subscale alerts that suggest

problems; and interpreting a client's ASC responses, in the context of the client's verbal report and OQ signal.

On checking for ASC item responses or subscale alerts that suggest problems:

"If the red [alert] has been a consequence of a therapeutic rupture or an alliance rupture, ... I really want to know and they may not tell me; ... so I always pay attention to that [ASC Alliance subscale]." (Therapist 2)

"So I usually go over ... items on therapeutic alliance ... that I think there might be a breach in the alliance to a certain degree ... If there are any life event things, I look those over, because I think "well, did I miss something, did I not bring that up?" "That might surprise me," or "oh yeah, I'm pretty much aware of what's going on," so I understand why they're marking those critical items. And I always do check for social support." (Therapist 8)

"When I receive [ASC] results, I tend to look ... at the numbers, and then I also look at the items themselves." (Therapist 10)

On interpreting a client's ASC responses, in the context of the client's verbal report and OQ signal:

"When I got the [ASC] feedback I thought, "I know what that is" So my thinking would be: align what I've heard, with this, and see how they go together and if they don't go together, clarify." (Therapist 4)

Discuss ASC results with client. Nine therapists reported having discussed ASC data with a signal client. In nearly all cases, therapists indicated which ASC items or subscales the client had endorsed, and then asked the client to comment upon or clarify their responses:

“I saw that he strongly agreed with a couple of life-event items ... I said, “I just wanted to ask you about a couple of things, check some things out.” So then I just asked him how he felt and clarified his responses.” (Therapist 5)

“There [were] some alerts on ... ‘alliance questions’ or ‘comfort with therapy’ questions ... I asked her how she felt about our connection and how we were working.” (Therapist 6)

“I inquired a little bit about [the client’s ASC Alliance responses], at which time he said, ‘yeah, I kind of have some concerns.’ And then I processed a little bit more, and eventually pulled out of him what it was that he was thinking about as he responded to the items.” (Therapist 7)

Consult ASC manual. Five therapists reported having consulted the CST manual.

Specific actions included referring to the manual for interventions in a specific ASC domain. Also, three therapists endorsed having read the ASC manual in regard to non-signal cases or as a general reference: one therapist has referred to the ASC Manual in non-signal cases where the patient was not making progress and was thought to be under-reporting on the OQ. Another therapist once perused the manual for general information on identifying client problems. Two therapists had reviewed the Decision Tree previously, though not necessarily in reference to a specific client.

On referring to the manual for interventions in a specific ASC domain:

“On motivation, I can get in [the ASC manual] and look for what can I do to help him or her feel more motivated.” (Therapist 2)

“I looked through [the ASC manual section on Therapy Alliance] to get ideas of how to talk with her about it.” (Therapist 3)

Intervention. Seven therapists spoke about taking actions intended to help the signal client, in the context of having reviewed or discussed the client's ASC results. A variety of interventions were described, including using a suggested intervention from the CST manual, and using the client's ASC results to intervene in the client's problems. Also, one therapist reported having referred a signal client for medication consult, consistent with the Decision Tree.

On using a suggested intervention from the CST manual:

"I've used [the ASC manual] for social types of things...Therapeutic interventions in terms of assessing the client's social network, thinking about group therapy, bringing clients' significant others to sessions. With this individual ... we got some suggestions out of there." (Therapist 1)

On using the client's ASC results to intervene in the client's problems:

"One thing he endorsed was that I didn't understand the problem and I shared with him that I thought that was an accurate perception. ... It led to us exploring ... alternative solutions." (Therapist 2)

"I talked with her about social supports ..., that she doesn't seem to have much support. We spent a good part of the session talking about what could she do to broaden her circle of friends, what does it mean that she doesn't trust people. We were really able to talk about how she could broaden her circle of friends, how she could start nurturing herself so that she's not so needy." (Therapist 3)

Seek ASC cooperation. Two therapists reported having discussed the rationale behind CST assessment and encouraging clients to participate:

“I explained to him that one of the reasons why he was given those tools was because he seemed to be feeling worse. And that this was going to be a way of helping me understand him better.” (Therapist 2)

“[I encourage them to complete the ASC], for some of those reasons stated: that they can fill out measures in a relatively short period of time, and I can get a lot of information that would take me more time to ask about.” (Therapist 7)

Decisions: Under What Circumstances Do Therapists Decide Not to Utilize Clinical Support Tools?

Patient behavior or OQ/ASC raw data. Three therapists discussed circumstances, under which they had determined that OQ assessment was not warranted, or, if working with a signal client, that further CST assessment or intervention was not indicated. They reported having based this decision on prior observations, interviewing the client, or their clinical interpretation of raw OQ/ASC data:

“I trust my own judgment ... as to where they're at, more so than immediately get into the OQ and take a look at their OQ score. For most of the clients I see, I don't pull up their OQ score all the time. Unless I have some question, they're giving me a double message, or I'm getting some confused thinking on their part, then I'll go ahead and look at the OQ, but I don't pull it up on every student.” (Therapist 1)

“If they have about 3 sessions that are distress right in the sessions themselves, because everybody can have a bad week like that in between sessions..., [and] things don't seem to be working well, then let's look at their scores on the OQ, let's look at the clinical supports tools now, but if they've just gone along about their average distress level in

therapy, and then they have a bad week, I don't generally look at the Clinical Support Tools." (Therapist 1)

One therapist reported using certain OQ score thresholds (e.g., definitely administer ASC if OQ score >80; not if OQ score is within 10 points of the cutoff for normal range) to determine whether the ASC should be administered (Therapist 1).

"What I saw [in the ASC results] agreed with what happened in session, so I didn't feel like we needed to get it out and go over it again. If it disagreed a lot, if what a client said didn't follow assessment [results], did not agree with what I heard in session I would talk it over with the client." (Therapist 4)

"If there had been any concerns as I looked at this information and talked with the [signal] client, I certainly would've used that information, but this feedback ... 'slightly disagree,' [in response to the ASC Alliance question] 'I thought my therapist disapproved of me.' That's not really a big deal at all.... In this case, it made a lot of sense. I would've been a lot more concerned if he had said that, 'my therapist disapproved of me' ... 'agree' or 'strongly agree' ... To have him opening up as well as he is and progressing the way that he is, to me, it feels like the relationship, the therapeutic alliance is fairly strong." (Therapist 5)

Client receptiveness. Three therapists discussed additional situations when they had determined that CST discussion was contra-indicated. They reported having based this decision on their assessment of the client's receptiveness:

"We nearly always talk about [the client's red OQ alert] unless it's someone who signals all the time and the client expresses discouragement or distaste or dislike for some reason." (Therapist 4)

“We’d gone awhile between sessions, and he was really driven by wanting to explore a couple of things, and I felt that moving into [the client’s CST results] might have better long term effects, but that probably would have been hard to focus on given his energy around this other stuff.” (Therapist 7)

Routine use. Four therapists reported having consulted CST results or intervention resources routinely (e.g., “always,” “typically,” or “I just do it”).

Attitudes: What Do Therapists Think of Clinical Support Tools?

Interpretation of OQ results. Five therapists discussed the comparative value of OQ data and clinical judgment, as well as their confidence in OQ scores and alerts:

“I trust my own clinical judgment more than the [OQ alert] program that’s set up....But when I get a double message from them, or what they’re saying seems to be a little different from what they’re feeling, then I like to have the OQ that I can pull up, to see where they’re at on that.” (Therapist 1)

“I don’t think sometimes the OQ really represents what’s happening with the client. So I think it would be a mistake to make all my clinical decisions based on that score. It’s like taking your temperature: You go in the emergency [room] and somebody says “I’m sick,” so they come in ... and the first thing they do is take their temperature. ...

Gathering that information is critical to understanding the well-being and safety of the client. But you can have no temperature and be very ill.” (Therapist 2)

“I’m not as sold on the O.Q. as an outcome measure as many people are. I think it’s one tool, I have to use my clinical judgment as well, but there’s a concern when a client is high and is not progressing according to expected curves, and so it’s important to be vigilant to see what’s happened.” (Therapist 5)

“I don’t put 100 percent confidence in the alert when it occurs...say the “red” signal. I’ll look at that case and consider what’s happening and often knowing the client and discussing scores with clients, ... any number of factors in their lives that influence the score on the OQ ... But the fact that it has now resulted in a red alert doesn’t automatically make me think of what’s happening with therapeutic alliance. Social support might be relevant to consider; life events certainly play in, but I don’t always say there’s a problem with therapy in the case when I see a red alert. ...don’t treat the red alert the way you might treat an extremely high blood pressure or abnormal EKG or something that surely indicates a physical health problem.” (Therapist 9)

ASC results provide novel or clinically useful information. Seven therapists discussed whether the ASC results provide novel or clinically useful information. Therapists discussed a) the ASC measure as a time-efficient means of ensuring that important patient problems are addressed, for situations when the patient has not volunteered this information and when the therapist has not inquired; b) how ASC results facilitate discussion of difficult topics; and c) how ASC results prompted a shift in therapeutic method or focus, or saved time that might have been spent discussing less-important topics.

Several therapists noted instances when a client’s ASC results were unsurprising, because the therapist routinely monitors for problems in a certain domain (e.g., therapy alliance), because the results were consistent with the therapist’s conceptualization, or because the client had discussed related issues in previous sessions. Several therapists also described instances when ASC results were unexpected or surprising.

On how the ASC measure ensures that important patient problems are addressed:

“I've had several cases where it's really opened up my eyes as to why my client was stuck. I remember one ... the alliance was really good, but the social support the bottom fell out. And he had never brought that up in therapy. He had never said that “part of my continuing unhappiness is lack of social support.” (Therapist 2)

“I view the [CST's] as a good way to check out these different areas of the client's life and to make sure that you've got your bases covered... kind of a safe-guard in a way that you're not missing something.” (Therapist 5)

“One client had [relationship concerns] that we hadn't attended to in therapy, and had he not filled out that form, I don't think we would have ever gotten around to talking about it. It was important enough to him to make a statement with the support tools, but not something that he was motivated enough to overcome his concern about saying it in therapy. ... and so to be able to have those kind of variables, it was a really useful thing in therapy.” (Therapist 7)

“Does this seem to give me a lot of information that I wouldn't get otherwise, or does this get me information in a shorter, more expeditious way? ... For me it does, yeah. They can fill out measures in a relatively short period of time, and I can get a lot of information that would take me more time to ask about.” (Therapist 7)

“That's probably the measure, the therapeutic alliance, I would guess most of the time I can read. But if I weren't accurately perceiving how the client felt about me or about therapy I'd really want to know.” (Therapist 10)

On how ASC results facilitate discussion of difficult topics:

“...it helped to have the data to give to him, to open the door to discuss it, rather than me opening the door to discuss it.” (Therapist 2)

“This whole social support thing, to have it on paper, and to know what she’d actually said about social support was really good because it was an issue we had been talking about. ... I really liked being able to use this feedback to get us back into talking about social supports.” (Therapist 3)

On how ASC results prompted a shift in therapeutic method or focus, or saved time that might have been spent discussing less-important topics:

“Motivation [ASC subscale] sometimes explains a lot to me ... if they’re down there in that pre-contemplative stage, they’re not really sure if they want to get better, so it’s helpful to me to not to push them too hard.” (Therapist 2)

“[Discussing ASC results] probably saved us a lot of time in not continuing to meander through these other things that weren’t as valuable.” (Therapist 7)

CST manual provides novel or clinically useful information. Five therapists expressed attitudes about whether the ASC manual provides information that is novel or clinically useful. Therapists discussed how the ASC manual has reminded them of practices the therapist is familiar with but might not have considered using with the signal client. One therapist noted that the interventions suggested in the ASC manual are practical and provide references for further reading. Another participant noted that, as an experienced therapist, he or she knows how to respond to critical items without referring to the Decision Tree, but suggested that this intervention resource would be helpful to less experienced trainees.

On how the ASC manual reminds therapists of familiar practices:

“On motivation, I can get in and look for what can I do to help him or her feel more motivated. Because sometimes I see where they’re stuck or what’s going on, but I don’t always know, “What can I do with this?” (Therapist 2)

“It’s a reminder of good practices that I just might not be cued to at the moment.”

(Therapist 4)

“I would, depending on the kind of feedback, open the manual. But it’s kind of a good reminder thinking, “have you done this?”, but it’s not like there’s much in there that would be outside the ordinary realm of practice.” (Therapist 5)

Client cooperation with CST procedures. Five therapists described the reactions previous clients had towards Clinical Support Tools procedures. Therapists related experiences with clients who had been compliant with, openly uncooperative about (e.g., giving random or misleading responses on the OQ), or who declined to complete CST questionnaires. One therapist noted some clients have been curious about why they are asked to complete CST questionnaires. Another therapist remarked that some clients like to see OQ graphs that validate their progress in therapy.

Therapist convenience. Three therapists evaluated the convenience of accessing, interpreting, and acting upon Clinical Support Tools. The ASC manual was alternatively described by different therapists as more accessible due to its brevity and clear presentation of content, or as less accessible because of its length. One therapist noted that paper copies of ASC results tended to be misplaced. One therapist noted that the ASC norms were not readily available, making the ASC results difficult to interpret.

Suggestions. Four therapists offered suggestions to improve the Clinical Support Tools. Examples of therapist suggestions included a) more frequent ASC administration (e.g., to keep CST results in therapist’s awareness) or at the therapist’s discretion, b) increased emphasis on use of the Decision Tree, c) issue brief reference materials that make the ASC manual more accessible by clinicians, d) create hyperlinks between the computerized OQ and ASC results, and

e) make ASC normative data (e.g., score cutoffs or ranges) available to clinicians to assist in data interpretation.

Discussion

Experienced therapists reported a variety of ways in which they have utilized Clinical Support Tools. Few therapists reported situations in which they had decided not to use some component of the Tools; three therapists reported instances when they used clinical judgment to determine there was no need for further CST assessment or problem solving. Also, three therapists reported having not used CST resources when a client seemed unreceptive to CST procedures. Still other therapists reported that they routinely use a component of the Clinical Support Tools. Clinicians additionally reported a variety of attitudes on how Clinical Support Tools factor into their routine practice, most of which were favorable. Below, we consider what the categorized data indicate regarding each main function of Clinical Support Tools, and whether it currently plays a role in therapists' work.

Does the OQ System Influence Clinicians' Measurement of Patient Status?

Nearly all therapists in this study reported that they consulted a signal client's OQ results. Some therapists noted that they attempted to interpret the meaning of a client's OQ score. Others checked for clients endorsing critical items such as suicidal ideation. Many therapists reported sharing OQ results with clients, and some asked clients to interpret the meaning of their OQ score or to clarify responses to critical items. Consistent with expectations (given that OQ administration is standard procedure among the therapists we interviewed, and that consulting OQ results may be considered prerequisite to other CST-related actions), these findings indicate that the OQ is widely used in our sample as a patient progress measure. Indeed, three therapists remarked that they "always" or "nearly always" checked their clients' OQ scores or discussed

results with their clients. Only one therapist reported having routinely relied on subjective assessment to monitor client status; this therapist consulted OQ results primarily when questioning the validity of the client's self-report. The same therapist also expressed the view that OQ data do not typically provide more information than is gathered by working with the client. One therapist who routinely consulted OQ results expressed the view that positive OQ results (e.g., that the client is on track for a good outcome) should be interpreted with caution, as the OQ may not be sensitive to underreporting clients.

In summary, nearly all therapists discussed using OQ results in routine therapy. Three therapists reported that they sometimes interpreted OQ results with caution; however, only one therapist reported utilization practices (i.e., routinely not consulting OQ results, even when these were available) that are incompatible with routine use of the OQ as a patient status measure. These findings confirmed that patient status monitoring is an active component of Clinical Support Tools in our participant sample. Further investigation to quantify the frequency of use is indicated.

Does the OQ System Influence Clinicians' Detection of Change?

This study provided evidence suggesting that clinicians use the OQ signal-alarm to initiate treatment changes in psychotherapy. Some therapists specifically reported having discussed the OQ signal with their clients, in order to explain that the client's status was not improving or seemed to be worsening. Most clinicians reported having taken action after they have received an OQ alert, such as discussing OQ results, consulting ASC results, and intervening according to their findings. Therapists also discussed the OQ signal as an indicator that the therapist should inquire about common therapy obstacles. Taken together, these results support the conclusion that clinicians react to the signal-alarm, and suggest that therapists

interpret it to indicate that there is a problem hindering the client's progress in therapy. These findings are consistent with findings reported by Hatfield and Ogles (2006); in their clinician survey, over 80% of therapists reported that they would modify treatment after finding out that a client was deteriorating in therapy.

Regarding the more specific question of whether clinicians use the OQ significant change indices to determine whether recovery, reliable improvement, or worsening has occurred at a given point in therapy, therapists' actions and attitudes toward this practice were unclear, and we did not directly inquire about this issue. Thus, it remains for future research to determine whether therapists consider the client's OQ change index (i.e., recovered, improved, unchanged, worsened) in making treatment decisions.

Does the OQ System Influence Clinicians' Prediction of Change?

The OQ signal-alarm system, which indicates when clients are not on track for a favorable therapy outcome, clearly prompted therapists to problem solve and intervene, as has been discussed. Regarding the more specific question of whether therapists use the signal to make prognostic conclusions, it was unclear from therapists' reported CST experiences, whether they used this function of the Clinical Support Tools or had an opinion regarding it. We observed that, although many clinicians reported having discussed the OQ signal with clients, and told clients that the signal indicates they are not making expected progress, none of the therapists interviewed were known to have advised a signal client that the progress alert downgrades expectations for a favorable therapy outcome (i.e., to have communicated the client's prognosis). Further investigation is needed to confirm these observations and their significance. It may be that therapists engaged in these practices, but did not discuss them because we did not ask them directly. Thus, the question remains: do therapists employ not only

problem-solving strategies, but also prognostic assessment when therapy clients are not responding to treatment? Research on how psychotherapy providers use prognosis in their routine practice is warranted.

Do ASC Resources Influence Clinicians' Identification and Resolution of Therapy Problems?

A majority of clinicians in this study reported having analyzed or discussed ASC results with their patients. Furthermore, many therapists endorsed positive views on the clinical usefulness of ASC results, which at times revealed undisclosed problems the therapist had not detected, redirected the focus of therapy toward more potent concerns, and helped therapists initiate difficult problem-solving conversations. Thus, these findings provide support for the conclusion that the ASC influences experienced therapists' ability to pinpoint factors that may obstruct therapy progress.

Although most therapists consulted ASC results to better identify problems, relatively few referred to the ASC manual to select a corrective intervention. Many therapists remarked that they routinely monitored for subjective indications of ASC-related problems, and as one therapist commented, the interventions presented in ASC represent standard practices. Thus, we suspect that of the therapists who did not refer to the ASC manual, many did not because they consider themselves knowledgeable in the intervention strategies found there. A minority of therapists in our sample had referenced interventions in the ASC manual, however, and not necessarily while working with a signal client. Thus, access to ASC manual resources may have influenced the utilization of empirically-supported problem-solving interventions, even among some experienced therapists. Notably, many of the therapists interviewed, including some who did not refer to the ASC Manual, reported having initiated problem-solving interventions after

consulting ASC results. Thus, whether or not therapists actually referred to the ASC manual, many have actively responded to problems revealed by ASC assessment, which constitutes further evidence for the impact of ASC resources on routine care.

It is informative to contrast therapists' utilization of ASC problem-solving resources, with the results of Hatfield and colleagues (2010). According to their chart reviews of 39 clients that therapists had identified as deteriorated, therapists documented having discussed the therapy alliance with 1 client (3%), discussing motivation with no clients (0%), and discussing social support with 5 clients (13%). Their study was limited by its reliance on past documentation and lack of therapist follow up, yet its figures suggest that clinicians do not routinely respond to client worsening by assessing for potential problems commonly associated with therapy failure (i.e., motivation, alliance, etc.). In this study there was a high prevalence rate of ASC-related assessment and intervention among therapists interviewed, although we did not document the actual frequency with which therapists engaged in these practices in routine care. Nonetheless, our results seem to support the conclusion that CST's, specifically the results of an objective problem-detecting measure, influenced experienced clinicians' use of problem identification and corrective intervention with failing clients. This finding warrants further investigation of how frequently therapists utilize problem solving resources with their failing clients.

Of seven therapists who were queried directly about the Decision Tree, only two recalled having reviewed it at some time. One participant observed that, as an experienced therapist he or she had not found it necessary to refer to the Decision Tree. This therapist suggested that trainees might benefit from its use, by learning to select interventions based on clinical assessment data. Another therapist reported having referred a signal client for medication consult. None of the study participants reported having changed a signal client's diagnosis, nor

having formally altered the patient's treatment plan, although some therapists remarked that discussing a client's ASC results led to a shift in therapy focus. Because very few of the therapists were familiar with its contents, it is apparent that the Decision Tree has not impacted experienced clinicians' utilization of these additional problem-solving strategies. Because we did not ask directly about these practices, however, it is uncertain whether therapists utilize them in the context of CST use. Hatfield and colleagues' (2010) chart review suggests that therapists consider some of these strategies with non-responding clients, some of the time. Of 39 clients that therapists correctly identified as deteriorated, therapists initiated medication referral or consultation for 14 clients (36%), changed treatment goals or treatment implementation for 11 clients (28%), but did not re-evaluate diagnosis for any clients.

By sampling only doctoral-level psychologists, this study excluded practicum supervisees, interns, and post-doctoral associates. Trainee-level clinicians might perceive greater benefit in having readily available information on empirically-supported problem-solving strategies than advanced clinicians. Thus, this Clinical Support Tools component may exert more influence on patient care among therapists with less experience; this is a question to be addressed in future research.

Underutilized Components? Future Directions for Clinical Support Tools

A majority of experienced therapists in the study sample reported having utilized major features of Clinical Support Tools, including progress measurement, problem identification, and problem resolution strategies. Therapists' responses to open-ended questioning about their CST experiences did not confirm that they use Clinical Support Tools to formally determine whether their clients have experienced reliable change or to prognose whether their clients will leave therapy improved. Further research is needed to corroborate this observation and its

significance, if any, for client therapy outcomes. It is possible that potential benefits of these CST functions have not been fully realized; accordingly, avenues for modifying Clinical Support Tools to facilitate greater utilization are discussed below.

Progress monitoring and computer-based clinical decision support. In their study of clinical decision making using client vignettes, Hatfield and Ogles (2006) asked therapists to rate the relative influence of clinical data from various sources upon their judgment of a client's progress. Together, client verbal report and clinician observations accounted for 67% to 74% of clinicians' decision-making, compared to just 7% to 13% influence by scores from a routinely administered progress measure. Although clinicians reported that progress measures carry much less weight in their decisions, their case vignette ratings revealed that both the objective measure and the client's report was equally influential on clinicians' judgments of client change (Hatfield & Ogles, 2006).

A simple way to explain why objective progress data and interview data carried equal value is that clinicians in this study were exposed equally to both sources of information—in terms of the modality in which the information was presented (written format), the quantity of information reviewed (a concise progress statement), and the timing of delivery (progress statements were both reviewed at the time the clinician made a decision). Does presenting two clinical data sources in the same modality, quantity, and at the same time affect clinical decision making? This interesting finding suggests a novel point of delivery for patient progress information: at the point when the therapist documents the therapy session.

To even clinicians' exposure to subjective and objective data, or "level the playing field," in clinical decision making, record-keeping software could be modified to request that a clinician provide a summary rating of whether the client is recovered, improved, unchanged, or worsened,

based upon the clinician's observations and client verbal report. The program could then import a comparable summary rating of client progress that is based upon objective monitoring results, presenting them side by side with the clinicians' subjective conclusions. In a manner similar to the Hatfield and Ogles (2006) survey, the documentation program could then request that the clinician indicate a plan for further treatment (e.g., continue treatment, alter treatment, further assessment needed). These operations (i.e., results delivery at the point of service documentation, documentation prompts, and pre-figured response options) are recognized features of *computer-based decision support systems* (CDSS) that have been used to improve quality in medical healthcare settings (Sim & Berlin, 2003).

By prompting therapists to document their information sources and essential treatment decisions, CDSS have potential to increase quality in behavioral healthcare by assisting clinicians to integrate their best available clinical data (APA, 2006). Furthermore, because these support systems would document decisions within clinicians' normal workflow, no researcher-observers would need to be involved in data collection, high completion rates could be expected, and demand characteristics would be effectively eliminated. Large-scale data on clinicians' treatment monitoring practices with non-responding clients could significantly advance patient-focused research. These investigations would build upon Hatfield and Ogles' (2006) work, by offering a discreet view into the "black box" of clinical decision making as it occurs in naturalistic care.

Prognostic assessment and shared decision making. Hawkins and colleagues (2004) evaluated the OQ monitoring program in an outpatient hospital setting, and examined for additional effects of communicating status, treatment progress, and prognostic updates to patients, as delivered in a written report. One half of patients in the study received these OQ

progress reports. The report given to patients who were identified as non-responders, encouraged them to discuss their lack of progress and potential treatment modifications with their therapist. Patients' utilization of this feedback, or whether they initiated problem-solving discussions with their therapists, was not assessed. A further limitation of this intervention was that therapists did not have access to newly developed ASC problem-solving resources.

Despite the limitations of the patient feedback condition, communicating progress monitoring results to patients was associated with the highest rates of reliable improvement (64%) observed among all study groups. Although between-group outcome differences were not significant (i.e., relative to no patient communication), the improvement rate in the patient communication condition yielded an effectiveness rate that compares favorably with those observed in clinical research trials (Hanson and colleagues, 2002). Furthermore, Hawkins and colleagues (2002) also observed that patients who received written communication about their treatment progress expressed interest in this information and seemed able to tolerate it, even when it indicated treatment was not helping. Despite the encouraging findings of Hawkins et al., (2004), overall results for written progress communication to patients have been associated with equivalent outcomes to OQ monitoring without patient reports in a meta-analytic review (Shimokawa, Lambert, & Smart, 2010).

Since Hawkins and colleagues (2004) first introduced OQ progress updates to patients, we have learned that adding problem solving resources to progress monitoring results in greater patient improvement (Shimokawa et al., 2010). Perhaps it is time to integrate the patient communication strategy introduced by Hawkins and colleagues (2004) with ASC resources to develop a more constructive method for communicating progress information to non-responding patients—one that considers the results of the clinician's ASC-based problem assessment, the

therapist's selection of problem-focused interventions, the patient's preferences for continuing care, and a plan to determine how the interventions will be applied and whether they have made a difference.

It seems reasonable to expect that patients would find prognostic information to be most useful when their therapists are able to offer recommendations for improving treatment. Thus, the ideal time to communicate prognosis to non-progressing patients may be after the clinician has conducted a problem assessment, has a working theory to explain why therapy is not helping, and has selected recommended interventions. To make this process of remediating treatment truly patient-focused, the patient should also have the opportunity to provide input on the corrective measures to be taken, and to participate in ongoing progress monitoring that will help both parties decide whether their strategies are having an effect. If initial problem solving efforts prove unsuccessful, therapists would help non-responding patients understand their treatment options, which might include intensified efforts to problem-solve, modification of treatment goals, treatment postponement, or treatment referral.

Both the observation of Hawkins et al. (2004), that patients were interested in receiving updates about their therapy progress, and the principles of shared patient decision making and informed consent (Frosch & Kaplan, 1999; Knapp & VandeCreek, 2006; Loh, Simon, Wills, Kriston, Niebling & Harter, 2007; Rokke, Tomhave & Jovic, 1999; Schwartz & Meslin, 2008) suggest that patients might welcome this proposal. However, there is currently little systematic research to guide clinicians in this regard. Thus, investigation is warranted.

Specific benefits from patient-centered progress communication may arise from its potential effects on patients as informed psychotherapy consumers (Morrison, 1979) and clinicians as problem solvers. It is a well-established finding that some therapists are

consistently less effective in helping clients in general (Okiishi, Lambert, Nielsen, & Ogles, 2003) or clients who present with certain types of concerns (e.g., violence, substance abuse; Kraus, Castonguay, Boswell, Nordberg, & Hayes, 2011). Some debate has surrounded the issue of how to protect patients from “pseudo-shrinks” or therapists whose patients, on average, leave treatment deteriorated. Patient-centered progress communication and problem solving potentially adds a useful layer to existing consumer protection strategies in mental healthcare. Updated treatment progress and prognosis, if communicated appropriately, would help non-progressing patients make informed decisions about their continuing care. It is not difficult to imagine that many clients, when given progress information and a remediation plan, could make a timely exit from therapy if diligent attempts to course-correct prove unsuccessful.

Perhaps, the routine practice of actively communicating progress information to patients will also serve as a more powerful form of performance feedback (Sapyta, Riemer, & Bickman, 2011) to less-effective clinicians, than simply reviewing progress information alone. Increased transparency and accountability with non-responding patients may spur therapists to increase their skills as problem solvers, seek peer consultation or supervision, or pursue further training to increase their effectiveness treating specific patient concerns (Kraus et al., 2011).

Strengths and Limitations

A limitation of this study is that it was unable to determine how frequently therapists utilize Clinical Support Tools in their typical practice. The need to characterize therapist differences in both quality and quantity of CST utilization is underscored by the results of a recent clinical trial of CST’s in an outpatient hospital setting. Harris (2011) found that CST effects on patient outcomes were therapist-specific, in that the signal patients of some therapists were significantly benefitted, while patients treated by other therapists were not. Future

investigations should assess naturalistic CST utilization patterns and utilization frequency to clarify the relationship between Clinical Support Tools and patient outcomes.

The breadth and nuance of clinicians' CST-related actions, decisions, and attitudes documented by this study, as well as the proposed research and clinical applications that spring from its findings, are this study's most notable strengths.

One methodological feature responsible for this study's strengths was also a source of a significant limitation. To encourage clinicians' unrestricted responding and cover a comprehensive range of topics, we did not ask clinicians for frequency ratings, or how often they have previously used CST's in the ways they had reported. In a few instances, a therapist informed us that he or she "always" or "almost always" performs a particular action in response to CST results, and we noted these results within our Decisions domain. Otherwise, the frequency of therapists' specific CST uses in routine practice was not measured. Therapists generally reported that their recent CST experience was qualitatively similar to past CST experiences, which suggests that the study data represent therapists' more commonplace rather than exceptional experiences. This observation should be confirmed, however, through prospective investigation of individual therapists' CST utilization.

Given the limitations of semi-structured interview methodology, the prevalence rates reported for specific CST factors must be interpreted cautiously. The semi-structured interviews were lengthy, and the researcher attempted to thoroughly canvass each interviewee's recollections of CST-related experience. Interview content was primarily generated as clinicians responded to open-ended questions, and the interviewer employed frequent follow-up probes to clarify the meaning of participants' statements. This method increases confidence that, within the targeted domains of Actions-Decisions-Attitudes, a) we sampled the broadest range of

meaningful CST topics within the realm of our participants' experience, and that b) we understand the meaning of what our participants communicated. Thus, a clinician's reported CST action, decision, or attitude can be considered a valid, positive prevalence indicator.

However, this conclusion does not necessarily apply to actions, decisions, or attitudes that a therapist did *not* report in the interview. For instance, the Decision Tree seemed to be an obscure CST component among the therapists we interviewed, as suggested by the observation that none of the therapists had specifically mentioned the Decision Tree in response to the open-ended prompt, "*Tell me about your experience using the CST's.*" We might have concluded a prevalence rate of zero based upon this observation. However, upon direct inquiry ("*What has been your experience with the Decision Tree?*"), two of seven therapists indicated that they had some, albeit limited experience with the Decision Tree. This example suggests that therapists primarily discussed CST themes that were relevant to their experience and omitted themes that were irrelevant to them. Conversely, it demonstrates how a low prevalence rate can reflect interviewee non-responding to a question the interviewer did not ask. To recapitulate, this study reports a count of how many therapists discussed each of the themes within Actions, Decisions, and Attitudes, and the reader should regard these tallies as "minimum" prevalence rates for each utilization factor. Because we did not specifically ask every therapist about all CST themes of interest, prevalence rates that were lower than expected in this study need to be confirmed in future research through direct inquiry, such as a clinician utilization questionnaire. Alternative data gathering methods might include directly observing therapists in-session or interviewing signal clients. These strategies could open additional sources of information that might not be available from therapists' self-report alone.

As in prior studies of Clinical Support Tools, we did not investigate the CST utilization patterns or attitudes of trainee-level therapists, nor the relationships between supervision, trainee utilization, and client outcomes. In the university counseling center where our study was conducted, the positive contribution of progress monitoring results to the supervision process has been recognized by both supervisors and trainees (Worthen & Lambert, 2007). Thus, there is reason to suspect that the more comprehensive Clinical Support Tools program is also being used and appreciated as beneficial to supervision. How CST's influence the supervisory process remains less clear. It is notable that some of the supervisor-clinicians in our sample reported having little familiarity with ASC Manual resources, including the Decision Tree and problem-solving interventions. As more than one clinician-supervisor in our study remarked, these very components of the Clinical Support Tools may be particularly useful for trainees. Moreover, it seems unreasonable to expect that supervisors will facilitate trainee adoption of resources, with which the supervisors themselves are unfamiliar. Thus, supervisors' CST training might be improved by devoting extra attention to CST components that experienced clinicians are less likely to adopt for their own use.

Considering our primary research target of clinicians' CST experiences, we did not attempt to investigate several questions of theoretical and practical interest. Among the signal clients of participating therapists, we did not monitor OQ scores beyond the initial alert to assess for CST-related change, nor did we investigate clients' experiences during the ASC feedback session. Information on how signal clients react to CST assessment procedures, results, and interventions may shed further light on how Clinical Support Tools impact patient care. Correlation of patients' CST experiences with clinical change indicators would likewise be valuable (Essock, Covell, Shear, Donahue, Felton, 2006). Also, by focusing on CST utilization

among doctoral-level therapists who serve a university student population, we were unable to examine the experiences of therapists who practice in a variety of other care settings, with different patient populations, and who have different training backgrounds (i.e., non-psychologist therapy providers). Understanding how different patient demographics and care settings are more or less conducive to Clinical Support Tools procedures in their current form will be essential to the effective dissemination of EBTM practices.

Research Applications: Quantitative Assessment of CST Utilization

Future Clinical Support Tools utilization studies should apply quantitative methods that survey clinicians on their use of objective progress monitoring, problem identification, and course-correcting strategies. Adapted from the qualitative results of the present study, the Clinical Support Tools Utilization Questionnaire (CST-UQ) assesses the individual clinician's use of OQ results, ASC results, problem-solving interventions, and collaborative remediation with signal clients.

The Prospective version of the CST-UQ (see Figure 3, below) documents therapist utilization with a specific client, and the Retrospective version assesses utilization with past signal clients in general. The Retrospective CST-UQ (see Figure 4, below) is best suited for efficiently surveying large practitioner samples, and would be appropriate for comparing utilization across multiple care settings and among clinicians of varied experience level or professional affiliation. The Prospective CST-UQ is ideal for more intensive research applications that require precise measurement, and would support studies that relate specific CST usages to patient outcomes.

In short, the CST-UQ represents a comprehensive set of specific practices reported by CST-experienced clinicians, paired with supplemental practices that are compatible with

principles of shared clinical decision making. The CST-UQ could easily be adapted as a utilization measure to meet a wide variety of research goals. For instance, it could potentially be modified to document utilization profiles across Clinical Support Tools and other procedurally similar quality assurance programs. Findings of such investigations would indicate whether certain design features (e.g., abbreviated versus comprehensive outcome measures; Campbell & Hemsley, 2009) are associated different utilization rates among clinicians in various practice settings.

OQ Results

I examined my signal client's OQ alert status, scoring trend, or critical items.	Yes	No
I attempted to understand the meaning of my signal client's OQ signal or high score.	Yes	No
I discussed my signal client's OQ score or trajectory.	Yes	No
I discussed my signal client's elevated critical item(s)	Yes	No

OQ/ASC Compliance

I have discussed the rationale of OQ/ASC assessment or otherwise encouraged my client to participate.	Yes	No
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ASC Results

I checked for ASC results that might indicate problems.	Yes	No
I interpreted my client's ASC results (e.g., in light of the client's behavioral presentation, verbal report, or OQ results).	Yes	No
I discussed my signal client's ASC results.	Yes	No

ASC Intervention

I used my client's ASC results to select an intervention from the CST manual.	Yes	No
I used my client's ASC results to devise an intervention (i.e., not necessarily obtained from the CST manual).	Yes	No
I used other interventions consistent with the Decision Tree	Yes	No
Please indicate which interventions were used:		
Referred client for medication consult	<input type="checkbox"/>	
Altered client's diagnosis	<input type="checkbox"/>	
Altered client's treatment plan	<input type="checkbox"/>	

Therapy Remediation Planning

I advised my signal client of his/her worsened prognosis	Yes	No
I shared the findings of my problem assessment with my signal client (i.e., my theory about why therapy is not helping)	Yes	No
I developed a remediation plan with my signal client (i.e., how we will adjust therapy and monitor for improved prognosis)	Yes	No

Figure 3. Clinical Support Tools Utilization Questionnaire: Single-Case Utilization

N = Almost Never R = Rarely S = Sometimes O = Often A = Almost Always

OQ Results

I examine my signal clients' OQ alert status, scoring trend, or critical items.	N	R	S	O	A
I attempt to understand the meaning of my signal clients' OQ signal or high score.	N	R	S	O	A
I discuss my signal clients' OQ score or trajectory.	N	R	S	O	A
I discuss my signal clients' elevated critical item(s).	N	R	S	O	A

OQ/ASC Compliance

I discuss the rationale of OQ/ASC assessment or otherwise encourage my clients to participate.	N	R	S	O	A
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ASC Results

I check for ASC results that might indicate problems.	N	R	S	O	A
I interpret my clients' ASC results (e.g., in light of clients' behavioral presentation, verbal report, or OQ results).	N	R	S	O	A
I discuss my clients' ASC results.	N	R	S	O	A

ASC Intervention

I use my clients' ASC results to select an intervention from the CST manual.	N	R	S	O	A
I use my clients' ASC results to devise an intervention (i.e., not necessarily obtained from the CST manual).	N	R	S	O	A
I use other interventions contained in the Decision Tree					
Please indicate which interventions used:					
Referred client for medication consult	N	R	S	O	A
Altered client's diagnosis	N	R	S	O	A
Altered client's treatment plan	N	R	S	O	A

Therapy Remediation Planning

I advise my signal clients of their worsened prognosis	N	R	S	O	A
I share the findings of my problem assessment with signal clients (i.e., my theory about why therapy is not helping)	N	R	S	O	A
I develop a remediation plan with my signal clients (i.e., how we will adjust therapy and monitor for improved prognosis)	N	R	S	O	A

Figure 4. Clinical Support Tools Utilization Questionnaire: General Utilization

Practice Applications: Integrating CST Procedures within Routine Care

The research of Lambert and colleagues has consistently demonstrated that objective monitoring of patient status across therapy sessions leads to improved outcomes for therapy non-responders. The dissemination of monitoring principles, strategies, and tools outside the research setting presents many challenges. Thus, steps in three strategic domains are recommended for CST's to adhesively interface with routine behavioral healthcare. First, a comprehensive set of practice guidelines for the universal application of objective progress measurement is advocated (See Appendix A). The rationale for progress measurement and ideal characteristics of monitoring instruments has been addressed in greater detail elsewhere (APA Presidential Taskforce, 2006; Lambert & Hawkins, 2004; Strupp, Horowitz & Lambert, 1997). The following list shares properties with previous recommendations, while also addressing utilization and dissemination issues that have historically received less attention in the progress monitoring literature. Also, these guidelines recognize the use of a wide range of objective measures in routine practice; to the extent that these possess essential properties of progress measures, they are likely to improve patient care. The guidelines identify a role for documentation in patient monitoring, communication of worsened prognosis and therapy remediation planning with non-responding patients, and supporting dissemination efforts, state the need for training standards for behavioral health professionals (Mours, Campbell, Gathercoal & Peterson, 2009), including clinicians who do not possess a background in outcome measurement.

Second, it is this author's opinion that regulatory initiatives are needed to make both private/managed care and public/community mental health systems more amenable to quality assurance programs. Finally, it is noted that regulations alone are insufficient to secure greater

participation among clinicians, who may have limited resources to commit to implementing monitoring systems. Accordingly, several technological and training initiatives are proposed to support the dissemination of CST's and related systems (see Appendix A).

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Appendix A: Suggested Guidelines, Regulations, Technology and Training Initiatives

The following guidelines, regulations, and initiatives are presented with the intent of stimulating professional discussion and debate. As views of this author, the following recommendations do not necessarily represent the positions of professional associations or consensus panels, nor do they proceed in a linear manner from the results of the present study.

Suggested Guidelines for Evidence-Based Treatment Monitoring in Routine Practice

1. Therapists routinely administer measures of symptom severity and adaptive functioning, selected from among general outcome measures and measures specific to the patient's presenting concerns and symptoms.

At a minimum, patient tracking measures should be psychometrically sound, valid for the purpose of progress monitoring (i.e., sensitive to therapy-related change), and brief to facilitate repeated administration. Even simple, objective monitoring measures of symptom severity (e.g., an insomnia patient's weekly sleep diary, monitored across sessions) and functional impairment (e.g., weekly work attendance by a depressed patient) meeting these basic requirements are likely to provide some benefit.

Ideally, clinicians also utilize instruments with advanced measurement properties that enhance the detection and interpretation of change:

- a. Standardized outcome measures provide normative data, thus permitting the patient's scores to be compared to clinical and community-based reference samples. Clinicians consider patient characteristics to select normative data that serve as appropriate points of reference.

- b. Outcome measures that index change by its statistical and clinical significance enhance the clinician's ability to determine whether a patient is reliably improved, unchanged, or deteriorated.
 - c. Outcome measures that incorporate an alert system apprise clinicians when a patient's scores have deviated from an expected progress trajectory. This enhances the clinician's prognostic ability by warning that the patient's current course of therapy is likely to result in a poor outcome.
2. When clinicians determine that the patient's course of treatment is likely to result in no progress or deterioration, they assess for potential therapy obstacles. Ideally, clinicians will consider both subjective and objective measures to identify contributing factors, and select research-supported interventions. Clinicians also consider that stagnant therapy may indicate an incomplete diagnostic formulation, inadequate treatment plan, or need for augmentative medical care.
 3. Clinicians advise their non-responding patients of their worsened prognosis. When clinically appropriate, therapists cite research that estimates the risk of poor outcome if therapy continues on its current course. For example, in a university counseling center sample, 80% of clients whose Outcome Questionnaire-45 scores triggered a warning alert left therapy unimproved or deteriorated (Hannan et al., 2005).
 4. Having discussed the patient's prognosis, clinicians present the results of their problem assessment, identifying factors thought to explain why therapy is not helping. With patient input, clinicians develop a therapy remediation plan, outline the problem solving steps to be taken, and identify the assessment methods they will use to determine whether corrective efforts have been successful.

5. When corrective efforts do not result in improved prognosis, clinicians discuss the client's current treatment options, which may entail intensified efforts to identify or resolve underlying obstacles, revision of treatment goals, or consideration of alternative care arrangements.
6. When documenting patient care, clinicians report and interpret the results of both subjective and objective progress assessment. They routinely document their assessment of the patient's current distress level, reliable change, prognosis, results of problem assessment with failing clients, communication of deteriorated prognosis, and discussion of corrective treatment modifications.
7. Clinicians who do not possess a requisite background in psychometric assessment methods should receive training in the selection, administration, scoring, and interpretation of appropriate progress monitoring measures.

Suggested Regulatory Methods for Evidence-Based Treatment Monitoring

1. Private/Managed Care: Insurance providers institute a billing code for objective outcome monitoring. Clinicians may bill for use of objective measures according to criteria established by the insurance provider. Given their financial interest in improved patient care, insurance companies support technological and training initiatives that facilitate the integration of objective progress monitoring into patient care.
2. Public/Community Mental Health: Objective measurement is mandated by clinic/agency policy and is supported by technological and training initiatives that facilitate the integration of objective progress monitoring into routine care.

Suggested Technology Initiatives to Integrate Evidence-Based Treatment Monitoring in Routine Care

1. Results of CST measures should be automated to deliver feedback at the point of client contact (i.e., prior to the therapy session). Using the most current software (OQ Analyst), clinicians can access OQ results through a web-based application. Perhaps this step could be eliminated by adapting the Analyst software, such that results appear automatically on the therapist's screen as a "pop-up" immediately after the questionnaire is completed. Obviously, different delivery methods are required for therapists who do not have computer-internet access nearby when they see patients.
2. Results of CST measures should be delivered to clinicians not only at the point of client contact (i.e., prior to the therapy session), but also at the time of clinical documentation, to maximize their potential influence on clinician decision making. This would be accomplished best by bridging CST software with the applications that clinicians use to create therapy notes. Electronic medical records (EMR) programs are becoming a preferred means of healthcare documenting, and it seems likely that behavioral health will adopt EMR's in many practice settings. EMR-CST integration would make accessing progress results convenient and timely. When a clinician is unable to access CST results prior to meeting with the patient, this second access point would serve as a reminder of available CST results needing to be reviewed. Depending on institutional or provider needs, EMR-CST hybrids could be programmed to generate various levels of supportive prompting (e.g., reminding clinicians to evaluate patient status, significant change, and current prognosis, or presenting a Decision Tree to assist in treatment planning). For clinicians who rely on standard word processing applications (e.g., Microsoft Word), a CST "add-on," or link to

CST results from the processing application, would serve a similar purpose in improving access to CST's at the point of service documentation for many users.

3. To further increase the attractiveness of routine objective monitoring, domain- or diagnosis-specific instruments that possess excellent properties and with which clinicians are widely familiar should be adapted for electronic administration, scoring, and automated reporting, and linked to electronic health records software, as has been recommended for the CST package. Ideally, these measures would be accessible through the same software applications as the CST package. Clinicians would then have immediate access to an electronic inventory of records-compatible measures to track progress in patients with varied diagnoses and functional concerns. In this scenario, clinicians could order the administration of a customized patient battery and receive testing results with minimal time demand.

Suggested Training Initiatives to Disseminate Evidence-Based Treatment Monitoring

1. Guidelines for training behavioral health professionals should be established by the major accrediting bodies of clinician programs (e.g., clinical psychologists, clinical social workers, master's-level counselors). Guidelines should attend to the role of clinical supervision in preparing trainees to competently and routinely use objective outcome monitoring.
2. Current clinicians and clinical supervisors who lack background in therapy progress monitoring should receive training in the selection, administration, scoring, and interpretation of appropriate measures.
3. Continuing Education programming on current practices in quality assurance systems should be directed to clinicians of all relevant professional affiliations. Licensing boards should consider mandating that psychotherapy providers attend a CE course on evidence-based treatment monitoring (EBTM) every 2-3 years.

Appendix B: Figures

Figure B1. Sample Assessment for Signal Clients report

Client Name:	Sara Student
ID:	0123456789
Therapist:	R.U. Better
ASC-40 Completed:	3/12/2008
Signal Session:	2/27/2008

Subscales:	Score	Alerts
Therapeutic Alliance	49	
Social Support	43	
Motivation	30	RED
Life Events	33	

Therapeutic Alliance:

Items:

3. I thought the suggestions my therapist made were useful.
 4. I felt like I could trust my therapist completely.
 5. I was willing to share my innermost thoughts with my therapist.
 11. My therapist and I had a similar understanding of my problems.

Responses:

- Slightly Agree
 Slightly Agree
 Neutral
 Neutral

Social Support:

Items:

19. I had support from social groups (like: church, school, AA, clubs, etc.)
 21. I felt connected to a higher power.

Responses:

- Strongly Disagree
 Strongly Disagree

Motivation: RED

It is advisable that you address your client's motivation to engage in therapy.

Items:

25. I am not really sure what to work on in therapy.
 28. I have no desire to work out my problems.
 29. Although I am currently unhappy with life, there is nothing I can do about it now.
 30. Through therapy I am taking more responsibility for changing my life.
 31. I am in therapy because someone is requiring it of me.

Responses:

- Slightly Agree
 Slightly Agree
 Slightly Agree
 Neutral
 Slightly Agree

Life Events:

Items:

34. I made a mistake that I can't undo.

Responses:

- Strongly Agree

Figure B2. Decision Tree

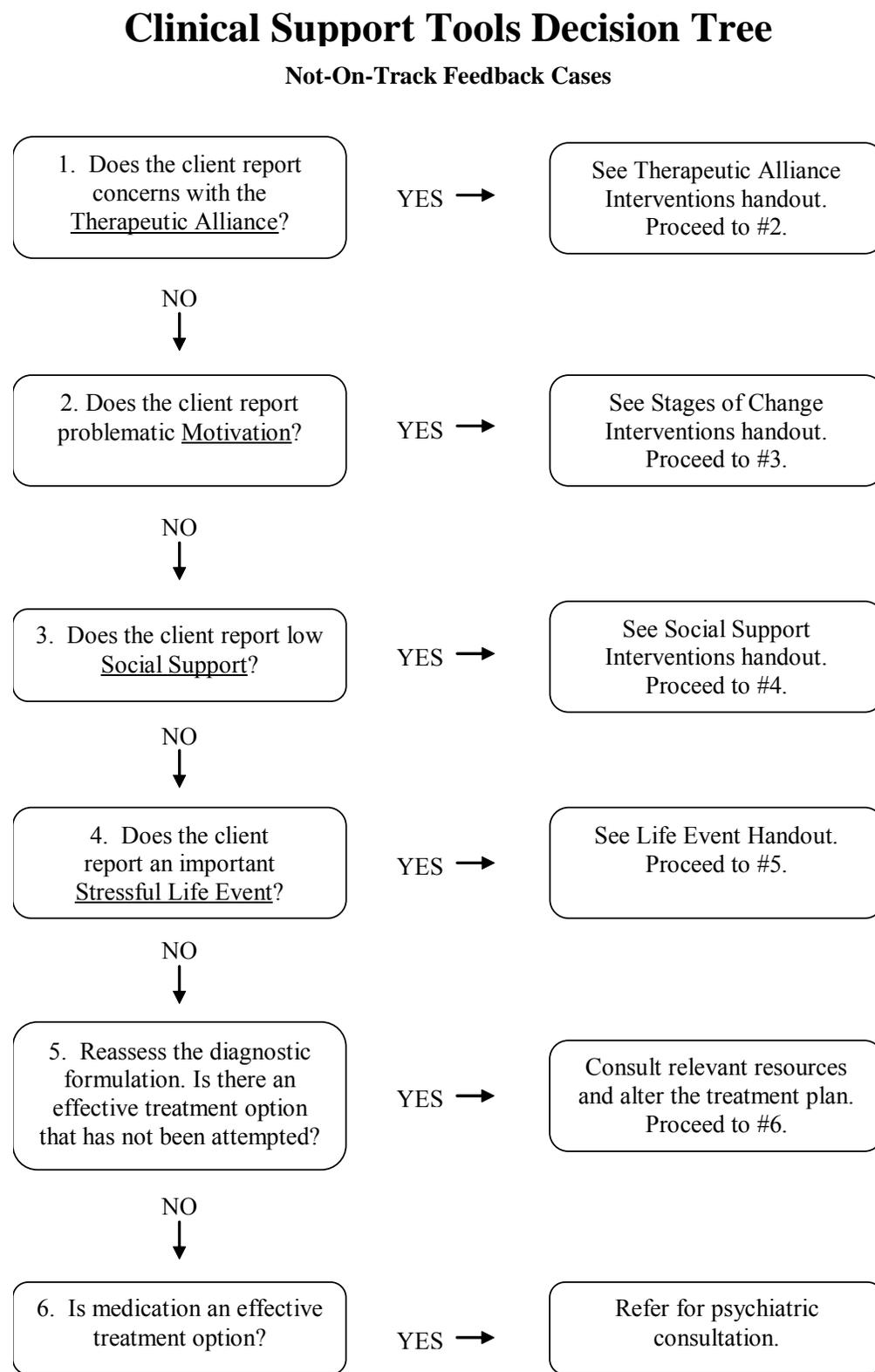


Figure B3. Informed Consent Document

Consent to be a Research Subject

Introduction

This research study is being conducted by Jason Southwick and Dr. Michael Lambert at Brigham Young University to determine how clinicians implement and evaluate the Clinical Support Tools intervention. You were selected to participate because you are a doctoral-level therapist at the Career and Counseling Center with a sufficiently large caseload and with prior experience using the Clinical Support Tools.

Procedures

You will be asked to track your use of the Clinical Support Tools with a CCC signal client. You will keep brief notes on your use of the CST's with this client. You will also participate in a 50-minute interview, to be held within 24-36 hours of your post-signal session with the client. In the interview, you will be asked to describe your experience using the CST's with the client, your attitudes toward this experience, as well as your past experiences with and attitudes towards the CST intervention. After this interview, you will be asked (with periodic reminder emails) to keep brief notes on continued use of the CST's with this client. After the client has completed 6 additional sessions or terminated, you will participate in a brief, 5-10 minute follow up interview to review any continued CST use. Should you choose to participate, you will receive a document containing detailed instructions for your study participation.

Both of the research interviews will be audio recorded and transcribed. You may review the transcription and omit comments you do not wish to be included in published research findings.

Risks/Discomforts

There are minimal risks for participation in this study. However, you may feel emotional discomfort when answering interview questions about your CST-related attitudes. You may elect to discontinue the interview at any time.

The published findings of this study may include paraphrases or direct quotations from your participant interviews. Only pseudonyms will be used to attribute these statements. Nonetheless, because your Counseling Center colleagues may already be aware of your CST-related attitudes, it is possible that they could correctly identify published statements as yours. You may review your interview transcript if you desire. It is recommended that you demarcate interview statements that you would not want your colleagues to know about or that could result in negative repercussions (e.g., social or professional). At your request, such statements will not be included in published research findings.

Benefits

There are no material benefits to you. You may enjoy exploring your clinical experiences with and attitudes about the Clinical Support Tools or find it professionally useful to do so.

It is hoped that through your participation researchers will learn more about how the CST's are used and received by therapists. This may allow developers of the intervention to improve the intervention's clinical utility and thus benefit clients it is intended to help.

Initials _____

Confidentiality

All information provided will remain confidential and will only be reported as group data or in paraphrases/quotations that attribute pseudonyms. Colleagues familiar with your attitudes may be able to correctly identify individual statements from your interview. All data will be kept in a locked storage cabinet and only those directly involved with the research will have access to them. After the research is completed, audio recordings will be destroyed and transcripts will be secured in a locked office.

Compensation

No compensation will be provided for your participation in this research study.

Participation

Participation in this research study is voluntary. You have the right to withdraw at anytime or refuse to participate entirely without jeopardy to your status with the Career and Counseling Center or the University.

Questions about the Research

If you have questions regarding this study, you may contact Jason Southwick at jssouthwick@gmail.com, Dr. Michael Lambert at 422-6480, michael_lambert@byu.edu, Dr. David Smart at 422-6291, dave_smart@byu.edu or Dr. Vaughn Worthen at 422-2723, vaughn_worthen@byu.edu.

Questions about your Rights as Research Participants

If you have questions you do not feel comfortable asking the researcher, you may contact BYU IRB Administrator, A-285 ASB, Brigham Young University, Provo, UT 84602, 801-422-1461, irb@byu.edu.

I have read, understood, and received a copy of the above consent and desire of my own free will to participate in this study.

Signature: _____

Date: _____

Figure B4. Therapist Scheduling Letter

Dear Therapist,

Your study client, ID# [...], has signaled and completed the ASC (the feedback from this measure is attached and a hard copy was placed in your box). The next session with you is scheduled for [DATE] at 10 a.m. Please select a time when you will be available to meet for the 50-minute research interview.

Suggested times are listed below.

[Same day], between 11 a.m. and 5 p.m.

[Next day], between 7 a.m. and 5 p.m.

Figure B5. Semi-Structured Interview Procedure

Introductions and Orientation:

“What is your understanding of what we’ll be talking about?” “We’ll be talking about the Clinical Support Tools—your experience using them with this study client and your general experiences with them”

“I will be recording this interview. You will have an opportunity to review the transcript.” Obtain renewed verbal consent

“When do we have to wrap this up? I’ll be checking the clock from time to time to make sure we don’t go over time”

“My role is essentially to ask you questions. Your role is simply to share your experiences with the Clinical Support Tools. I may change the subject from time to time to make sure we cover a topic.”

Obtain permission to contact the therapist with any follow up questions I may have.

Interview

(Standard) General Question #1: *“Tell me about your experience using the CST’s with [particular client]”*

(As Needed) Probe response to Question #1 for more detail: e.g., *“Tell me more about that,”* or *“Could you be more specific about what you mean?”*

(As Needed) Prompt therapist to discuss actions, decision-making, and evaluations.

Decision-making prompts: e.g., *“Sounds like you had a process of making some decisions there. Tell me more about that.”*

Attitude prompts: e.g., *“What do you think of the CST’s from using them with this client?”* If prompting attitudes about specific CST components, *“How was the feedback/decision tree/manual/etc.?”*

(Standard) *General Question #2*

#2a: After therapist has discussed the current signal client, ask, *“How was this present experience using the Clinical Support Tools like or unlike your other experiences with them?”*

#2b: *“What are your general experiences with using the CST’s? What do you think of them?”* *How do you decide whether to use them?”*

(As Needed) Inquire about use of CST components that they omitted when discussing their current experience. Have they ever used that component? If so, how?

(As Needed) Prompt for specific experiences, e.g., *“Tell me about a time when you found the CST’s helpful for a client.”* Or *“When do you first recall thinking the CST’s were unhelpful?”*

(As Needed) Probe for nuance in evaluation, e.g., *“Could you tell me what you mean by ‘useful?’”*

(As Needed) Alternate Attitude prompts: *“What about the Clinical Support Tools would you change? Why? Or,”* *Tell me more about your thinking on that,”* (Ask about specific experiences). *“Have there been any important changes in the CST’s in the past that you thought were positive or negative?”*

Figure B6. Ethical Measures Involved in Conducting this Study

All participants signed Informed Consent documents (see Figure 3), of which they were provided a personal copy, indicating their understanding of study procedures and voluntary participation.

As planned at the outset of the study, only the Primary Investigator and research associates responsible for scheduling the therapist interviews were given access to personally identifying participant information. In the Results section, which incorporates direct quotes from the therapists, participants are identified anonymously as Therapist 1, Therapist 2, etc. A database that links participant names with their Therapist number has been accessible only to the primary investigator. Audio recordings and original interview transcripts have remained in the possession of research personnel have been stored in a secure location, and will be destroyed after the dissertation defense. The PI offered all participating therapists the opportunity to review their personal interview transcript, and did not receive any participant requests that such be revised.

Following transcription, interview statements that could plausibly identify an individual participant (e.g., statements describing previous collaboration with members of our research team) were stricken from the record by the PI. Edited transcripts will be retained until they are no longer needed by the researchers, at which point they will be destroyed. Prior to the study, it was predicted that some therapists could feel mild discomfort while explaining their experiences with CST's. No adverse interviewee reactions to the interview procedure of significance were noted during the course of the study.

Figure B7. Methodological Changes Enacted during the Study

Modifications to the originally proposed study methodology included the following changes: a proposed research question was whether and how Clinical Support Tools might have a longitudinal effect on the care of signal clients. This was to be investigated prospectively by interviewing participating therapists a second time, several weeks after the ASC signal, to determine whether the therapist had further utilized CST procedures with the client. Therapists were given a log sheet and asked to maintain notes of any subsequent CST use with the client. Two such follow-up interviews were conducted: neither therapist reported any subsequent use of CST procedures with the signal client. Both therapists had reported a history of consistent CST use, which prompted consideration of the expected costs versus benefits of follow-up interviews. After consultation with the dissertation chair, the decision was made to abandon follow-up interviews, on the grounds that they were not expected to generate sufficiently useful data.

Minor adjustments to the interview protocol were made subsequent to interviews with Therapists 1 and 2. These mainly consisted of adding probing questions intended to elicit therapists' past experiences with Clinical Support Tools. For example, near the end of the interview, the researcher inquired whether therapists had prior experience with specific CST components (e.g., ASC Manual), if the topic had not been raised earlier in the interview. Other than as stated above, the procedures for interviews, data preparation, and content-thematic analysis were unchanged. Before interpreting the results of our content-thematic analysis, the PI modified the aims of the study to more closely align with goals of CST research. The PI then designed an analytic framework that would support the development of hypotheses informed by our category-thematic results.

Figure B8: Investigator Profile

Jason Southwick, 5th-Year Clinical Psychology Doctoral Student: My first introduction to Clinical Support Tools came as a first-year graduate research assistant to Dr. Michael Lambert, who invited me to conduct a CST implementation study. Throughout the process of collecting, processing, and reporting on clinicians' interviews, diligent effort was made to understand and faithfully represent the meanings they conveyed. The process of interviewing experienced therapists about Clinical Support Tools influenced and expanded my own views on clinical practice.

While considering clinicians' views on CST's and developing my own model to explain what Clinical Support Tools are, I have come to prefer some terms over others. First, I discuss OQ results in terms of "progress" monitoring instead of "outcome" monitoring, because to me *outcome monitoring* carries connotations of programmatic clinical research or administrative performance monitoring, neither of which are the purpose of Clinical Support Tools nor very attractive to some clinicians. Often, I use the term "prognosis" rather than "prediction" in regards to therapy patient outcomes, because to me a *prognosis* is medically relevant information that clinicians share with patients, whereas a *prediction* does not carry that clinical connotation and may not prompt shared decision making with patients.

I also frequently name CST procedures in terms of the routine clinical tasks to which they correspond. As I learned from the clinicians in our study, using subjective methods they already perform some of the assessment functions served by CST's. To make the distinction between routine clinical assessment and CST assessment clearer, I often refer to OQ and ASC methods as *objective progress monitoring and problem identification*. Similarly, I have mostly stopped using the term "feedback" in relation to clinicians. As I understand some of the clinicians I

interviewed, *feedback* could be taken to imply that clinicians are not already gathering clinically useful data on patient progress. Although the results of this study do not unanimously support this point of view (i.e., that clinicians routinely gather or interpret data pertaining to some key aspects of patient progress), I believe it is a mostly accurate perspective, emphasizes clinician-CST compatibility, and is an ideal platform for introducing Clinical Support Tools.

A final note on terminology: *patient* and *client* are sometimes thought to communicate different values about the relationship between psychological treatment or psychotherapy and healthcare. In the university counseling center where this study was carried out, clinicians customarily use the term *client*, and I have of course retained this label to report clinicians' statements. In other parts of this manuscript, the two terms are used interchangeably.

Finally, I have no financial conflicts to declare in relation to this study. My first stake in the program evaluation of Clinical Support Tools is to satisfy requirements for the doctoral degree. During the study design, data collection, and content analysis phases of the study, I found myself for the most part disinterested in the outcome of the study. As I began my interpretive analysis of the categorized data, I integrated my new awareness of clinicians' CST experiences, findings from prior CST research, and awareness of my own development as a clinician. Based on these reflections, I came to believe that early failure detection and patient-centered problem solving have significant promise for improving behavioral healthcare. I have also adopted the assumptions that CST's can be adapted to clinician needs and that healthcare systems will benefit from accommodating more widespread adoption of CST's.

Figure B9. Coding Protocol

(Green) CST Actions

Descriptions of CST related acting (i.e., includes or follows use of OQ/ASC data, manual). Include the stated purpose of the action.

Include non-CST actions that the therapist identifies as an outgrowth of CST use (e.g., therapist-originated interventions prompted by review of ASC data.)

Descriptions of intentional non-use of the CST's (e.g., deciding to continue with session rather than access ASC or discuss it with the client)

(Pink) CST Decisions

Statements in which the clinician describes when, or under what circumstances he or she used/intentionally did not use the CST's (e.g., if-then statements; always or never statements)

To reduce complexity, only code statements referring to how the therapist decides *whether* to use CST's, not how therapist decides the particular *way* in which to use CST's.

(Blue) CST Attitudes, Evaluations, Reactions

Evaluations, positive or negative

Other therapist reactions to the CST's

Suggested changes