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THEORETICAL STUDY

Selecting the most appropriate treatment for each patient



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Abstract Reviews the emergence of research on fitting treatment procedures to the unique needs and proclivities of patients. Traditional research on efficacy of psychotherapy focuses on the role of interventions and theoretical brands, minimizing factors that cannot be randomly assigned. This line of research has not realized its initial and desired promise, perhaps because it fails to incorporate into the study of psychotherapy important and effective treatment variations that are associated with therapist and non-diagnostic patient factors. Contemporary efforts to “fit” treatments to patients emphasize the roles of interventions, participant factors, and contextual/relationship factors. For these complex interactions, any of which reflect factors that cannot be randomly assigned, randomized clinical trials (RCT) protocols are inappropriate as a “gold standard”. Several studies are presented which illustrate not only the predictive power of incorporating both treatment mediators and moderators into the realm of psychotherapy study, but the value of a multi-method approach to research. Converging studies moreover, provide a way to incorporate matching algorithms into decisions about assigning optimal treatments.

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PALABRAS CLAVE

Psicoterapia;
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Selección del tratamiento más adecuado para cada paciente

Resumen Se revisa el surgimiento de la investigación sobre procedimientos de ajuste de tratamientos a las necesidades de los pacientes. La investigación tradicional sobre la eficacia de la psicoterapia se centra en el papel de las intervenciones y los modelos teóricos, minimizando los factores que no pueden ser asignados al azar. Esta línea de investigación no ha dado cuenta de su deseada promesa inicial, tal vez porque no incorporó en el estudio de la

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psicoterapia importantes y eficaces variaciones de tratamiento asociadas al terapeuta y a factores no diagnósticos de los pacientes. Los esfuerzos contemporáneos para “encajar” tratamientos a pacientes destacan el papel de las intervenciones, de factores participantes y de factores contextuales/relacionales. Estas complejas interacciones reflejan factores que no pueden ser asignados al azar, ensayos clínicos aleatorizados (ECA) que son inapropiadas como “estándar de oro”. Se presentan varios estudios que ilustran no sólo el poder predictivo de la incorporación de ambos mediadores y moderadores de tratamiento en el ámbito de estudio de la psicoterapia, sino también el valor de un enfoque multi-método de investigación. Estudios convergentes proporcionan una manera de incorporar algoritmos en las decisiones sobre la asignación de tratamientos óptimos.

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Planning and assigning a patient to a treatment that optimizes gains and fits the patient's needs is a shared objective among clinicians. However, selecting the most appropriate treatment for each patient can be a nebulous and unreliable task, varying by the clinician's biases and theoretical training and with uncertain or unmeasured results. There are different ways to identify and select a particular treatment course. Rational approaches rely on the particular formulations of each clinician and are largely based on theoretical posture and personal experience. Alternatively, empirically supported treatments favor diagnosis-specific interventions, chosen from a selection of name-brand approaches that have been proven to be more effective than no- or usual treatment in at least two randomized studies. This approach falls prey to a tendency to ignore both individual patient variations and the importance of contextual and participant factors beyond therapy brand and patient diagnosis. A third method articulates treatment selection as a process that focuses on the identification and application of guiding principles, as opposed to broad theoretical models, that have been found to be related to the efficacy of each unique patient-therapist dyad. These principles are drawn from research findings on the roles of treatment contexts, interventions, and participant factors, and incorporate contributors to an optimal “fit” beyond those found in the brand of treatment and the diagnosis of the patient. The contemporary approach that best represents this method of assigning treatment is Systematic Treatment Selection (STS; Beutler, Clarkin, & Bongar, 2000). STS is an integrative model of assessment and treatment delivery that draws on the roles of individual dispositional factors (patient characteristics) and corresponding or matching interventions. Patient factors and treatment strategies are both drawn from research evidence that certain patterns represent indices of “fit”. In other words, STS provides the clinician with a set of empirically informed guidelines about using different psychotherapeutic strategies depending on a patient's proclivities, needs, and overall profile characteristics. The principles that constitute STS are themselves drawn from research on three domains or classes of variables that mediate or moderate change: participant factors, interventions, and relationship qualities (Beutler & Clarkin, 1990; Beutler et al., 2000; Beutler & Harwood, 2002; Castonguay & Beutler, 2006; Constantino, Beutler, & Castonguay, in press; Norcross, 2002, 2011).

The development of Systematic Treatment Selection (STS) relies on a long history of psychotherapy research conducted throughout North and South America and Europe. STS aims to identify both variables and approaches that are translatable across various cultures and individuals and those that are unique to each treatment or culture. Its foundational research is comprised of findings that have been extracted from studies using a variety of research designs. The compilation of findings from multiple methods is thought to ensure that the conclusion rest on sound scientific principles pertaining to how people are helped psychologically and emotionally.

The objectives of this paper are to: 1) briefly review the development of Systematic Treatment Selection (STS) within the context of the history of psychotherapy research; 2) identify the primary assumptions and research methods used in this approach compared to more conventional models; 3) describe the measures and methods used to test the model; and 4) present the current status of “matching” research, via examples from our own research program.

History of psychotherapy research in the development of STS

Roughly, one can differentiate among four different epochs that mark the evolution of psychotherapy integration, culminating in the STS system and other integrative approaches. These epochs began with the search for common healing factors (Epoch #1) and then progressed to the exploration of tailoring the use of patient specific procedures or “technical eclecticism” (Epoch #2). The third epoch saw the introduction of integration/eclecticism as a formal school (Lazurus, 1967), and in turn, the differentiation of eclecticism and integrationism. With these changes, there was a return to “schools” (Epoch #4) with a focus on finding evidence based treatments that reliably produced change. It is during this epoch of change, that the field of integrative psychotherapy has achieved a degree of formality as a distinct approach, as interest in it has been shown to be durable and stable.

Each epoch has contributed foundational principles to what became the STS. Some principles identified strategic relationships that are common across approaches and clients; others identified strategies which cut across theories to systematically predict outcome of psychotherapy,

and still others identify important extra-therapy factors that affect change. Ultimately, the principles were extracted and ordered in the most economical way for optimizing individual's ability to engage both in direct behavior change and to cultivate the emotions and perspectives that contributed to indirect (mediated) change.

Epoch #1: Common Factors as an Integrated Approach (1940s-1980s). As psychotherapy approached its 50th anniversary, there had developed a number of different styles and theoretical schools (Beutler, 2009). Each therapist offered his or her own approach as a model for theory and change. Those interested in rapprochement, however, took these theories as evidence of the lack of efficacy and sought to identify common sources of influence among them. The nature of the commonalities centered largely on the faith of the therapist and the quality of the relationship, with the likes of Rogers (1957) asserting that these qualities were universally responsible for virtually all therapeutic change. Research on these common qualities emphasized the similarity of effects among the major theories and offered selective research reviews as evidence for the common factors perspective (e.g., Luborsky, Chandler, Auerbach, Cohen, & Bachrach, 1971; Meltzoff & Kornreich, 1970; Rogers, 1980; Strupp, 1978; Truax & Mitchell, 1971).

Epoch #2: Technical Eclecticism (1960s-1980s). The idea that different procedures could be used for different clients' problems began to be formalized in eclectic theory. Technical eclecticism is the effort to differentially apply a menu of relevant techniques to different patients in the effort to optimize treatments of well-suited clients (e.g., Beutler, 1983; Goldstein & Stein, 1976; Lazurus, 1967; Thorne, 1957). Among the touted benefits of technical eclecticism was that it enabled therapists to use diverse strategies which cut across theories to fit clients' needs. The downside of this assumption as the failure of a systematic framework to emerge by which one could ensure that the various techniques were applied reliably. Also missing was a classification system that identified the indicators and contraindicators for the items on the technical menu. Concurrently, eclectic therapists, professing multiple theoretical allegiances, existed along side of therapists who advocated vociferously for one or another of them. Battles among theories and theorists heated up and the first comparison studies that were undertaken in the 1950s were welcomed and the idea caught fire in the 1960s and 70s.

Epoch #3: Introduction of Integrationism and its variations (1980s-2000s). Integrationism initially was seen through a relatively limited lens. It was represented as the merging of two or more theoretical models into a new theory of psychotherapy which, in turn, was distinguished from eclecticism by its devotion to theoretical foundations (Norcross, 1986). Eclectic therapists maintained that they chose a technique atheoretically, because it was effective, regardless of the theoretical foundation by which it came into being, was understood, or by whom it was used. Integrative therapists, in contrast, investigated the how and why of client change through the merging of two or more theories. A truly theoretical integration is very difficult to achieve, however, since it requires developing a compatible union from two or more different approaches, each of which was wedded to a particular nomenclature and causal assumption. By the same token, eclecticism managed to

prove only that the variations among therapists and their use of procedures precluded the development of workable menus. Ultimately, maintaining a clear distinction between integration and eclecticism was probably doomed from the start.

Epoch #4: A return to "Schools" and a stabilization of interest in integration/eclecticism (2000s-present). The introduction of randomized clinical trials (RCTs), a research model that had been developed in psychopharmacology, has become touted over time as the "gold standard" for psychotherapy outcome research (Kendall & Beidas, 2007). And with the introduction of RCT methods as the standard, so changed the face of psychotherapy research for the next decades. Research programs rapidly shifted their aims from finding commonalities and peculiarities among therapists and their use of interventions to that of the efficacy of disembodied interventions. Psychotherapy no longer saw therapists or clients as parts of the treatment. Instead, psychotherapy was defined in terms of "Evidence Based Treatments" (EBTs) that conceptually existed independently of therapists or clients. In the first example of an RCT being applied to psychotherapy, the Treatment of Depression Collaborative Research Program (TDCRP), assigned depressed patients randomly to four manualized protocols-Interpersonal Therapy (IPT; Klerman, Weissman, Rounsaville, & Chevron, 1984), Cognitive Therapy (CT; Beck, Rush, Shaw, & Emery, 1979), medication plus clinical management, and pill placebo plus clinical management. Perhaps not surprisingly in retrospect, few differences were found among the four treatment groups.

And, the Dodo bird effect persisted through the decades of RCT methodologies—all treatments produce very similar effects. For example, In the Vanderbilt Project II, therapists were trained to deliver a manualized treatment of Time Limited Dynamic Psychotherapy (TLDP; Strupp & Binder, 1984), minimizing therapist effects by selection and training and reducing patient variability by selection and homogenization on responses to structured personality tests. Again, treatments were minimally different. Each approach seeks to demonstrate both its efficacy with a particular diagnostic group of patients and its superiority over alternative treatments (e.g., treatment as usual, placebo treatment, or an alternative treatment). But, for the more part, the efforts have been minimally successful. Most psychotherapies obtain equivalent effects to one another; diagnostic groupings account for little of the change, and therapist and patient differences, independently of treatment, still account for most of the changes observed (Norcross, 2011).

Though its value is still assumed in many quarters and still debated in others, it does seem clear that the adoption of RCTs as the research standard has supported a movement back to "pure" theories and horse races among them. Concomitantly, however, the prevalence of the Dodo bird verdict among highly controlled studies has facilitated a stabilization of purpose and approaches within the integrative community. Integration has come to represent a multitude of different approaches. These approaches are bound both by their reliance on research evidence as a stabilizing force and on their assumption that not all therapies are effective for all people. Thus, this coalition forms a Big Tent under which specific integrative and eclectic models share common values and resources in their search for treatments

that are both common and specific, operate according to empirically derived principles, and remain cross-cutting in the applications.

The search for and articulation of principles of change and strategies of implementation represent contemporary integrationism. Identification of cross-cutting and empirically derived principles of change comprise a middle position between the technical focus of early eclecticism and the theoretical focus of early integrationism (Goldfried, 1982). At one end of the contemporary Integrative Spectrum, Assimilative Integration (e.g., based on Psychodynamic Theory (e.g., Castonguay, Newman, Borkovec, Holtforth, & Maramba, 2005), one of the emerging models, for example, blends adherence to a modern rendition of the effort to combine adherence with a particular theoretic model but allows multi-method interventions. At the other end of the integrative spectrum STS eschews the adoption of any particular theoretical model. Instead, a foundation of empirically derived principles and strategies are framed as the means by which models are implemented.

It is in the explication of these principles that Beutler and his colleagues (Beutler, Blatt, Alimohamed, Levi, & Angtuaco 2006; Beutler & Clarkin, 1990; Beutler et al., 2000; Beutler & Harwood, 2002; Constantino et al., *In press*) followed in developing principles of psychotherapy, an integrative model- the STS. Psychotherapy research has an extensive history that extends to the early 1900's. And through most of this history, eclectic and integrative approaches have been part of the scene. Even the early common factors approach to psychotherapy has been touted as an integrated approach to psychotherapy. Between 1940 and 1980 research focused largely on identifying patient, therapist, and relationship factors that accounted for the preponderance of therapeutic change (Luborsky et al., 1971; Meltzoff & Kornreich, 1970; Rogers, 1957; Strupp, 1978; Truax & Mitchell, 1971). This research on common factors-based interventions initially existed alongside psychoanalysis and behaviorism, neither of which gave much credence to relationship and contextual variables. Furthermore, minimal attention was paid to treatment matching techniques that encompassed more than the broad and often arbitrary differentiation of psychoanalytic psychotherapy, supportive therapy, and psychoanalysis. In the last decade, under the influence of the range of integrative perspectives, so-called "integrative" psychotherapy practice has come to reflect multiple ways of bringing psychotherapies together at the theoretical, procedural, or common principle levels. Such integration/eclecticism has become an accepted practice, even entering the fray by which psychotherapy models are tested and applied as Evidence Based Treatments (EBTs).

The assumptions underlying Empirically-Supported Treatments (ESTs) vs. Evidence-Based Principles (EBPs) of STS

What are empirically supported treatments (EST)? It is assumed by most who would hear this term, that these treatments are based on rigorous empirical support. However, in reality the term has been defined to restrict evidence of efficacy to studies that have applied a RCT methodology. Accordingly, it is assumed that only this methodology will

allow one to construct causal chains by which treatment can be seen to produce change. This is an overstatement of the value of RCTs as applied to psychotherapy research and an understatement of the role of other scientific methods to determine causal chains. However, while RCTs have provided clinical psychology with the assurance that psychotherapy works and is better than nothing, a reliance on this one methodology introduces limitations in clinical decision making (Beutler & Forrester, 2014). In reality, the use of RCTs in psychotherapy have had to be modified to eliminate many of advantages of randomization. For example, in pharmacological research, neither the patient nor the clinician is aware of the treatment being offered. This kind of control is necessary to preserve the value of the randomization process. But, in psychotherapy, it is impossible for the principle participants to be blind to the treatment used. Likewise, in pharmacological research, each element of the treatment can be randomized, but in psychotherapy where the treatment is embodied within the persons giving and receiving it, the task of randomization is out of the question. Can one randomly assign therapists to different belief systems? Is culture a random event? Are preferences capable of being randomized across samples of patients and therapists? Yet all of these factors are embedded in the participants within psychotherapy and constitute aspects of the "treatment". Clearly, not all—and maybe not even many—aspects of treatment can be randomly assigned to therapists and patients.

Specifically, the RCT methodology tends to ignore the wide differences that exist among patients who have similar diagnoses. Many of these differences influences the types of interventions that will be acceptable and not acceptable. Thus, RCT methodologies are insensitive to many of the very factors that define a patient's receptivity to the interventions uses. The diagnostic grouping emphasized by RCT methodology, are implicitly assumed to embody most of the factors that determine one's responsiveness to treatment. Any remaining differences, are likewise, assumed either to be irrelevant to symptom change or are such that random assignment will control their differential influences (Beutler & Forrester, 2014). Under this perspective, persons with a diagnosis of Major Depression are considered to be substantially all the same as one another on treatment related predictors and are inherently different from those with another a diagnosis (the control group). In reality, disorders exist on a continuum, and with many facets; depression looks different across individuals, and even "healthy" persons can experience depression.

In addition, the extrapolation of RCT findings to practice calls for clinician's to select among over 200 treatment manuals and then to maintain strict adherence to that one selected (Beutler, 2009). This seems like an onerous, if not impossible task. Not only are there countless treatment manuals, under the weight of which clinicians would surely be crushed, many of the treatment brands contain nearly ubiquitous features.

These factors alone could account for why RCTs have failed to demonstrate treatment specificity or superiority for any of the major brands (Norcross, 2011; Wampold, 2001) and why EBTs account for only a small percentage of the total, observed changes (Beutler, Malik et al., 2003; Norcross & Lambert, 2006). The limitations of RCTs

as a “gold standard” could be avoided if one thinks both of “psychotherapy” as including the healing role of factors that may be used by therapists but that are not, strictly speaking, interventions in their own right (e.g., preferences, expectations, proclivities, etc.) and of psychotherapy research as a process rather than a single study.

It should be recognized that while RCTs call for clinicians in the study to adhere to the very tight guidelines espoused in the treatment manuals (assuming they are actually able to do so) in order to bolster reliability and internal validity, in reality, clinicians do not just read from the manual and add nothing further to therapy (Beutler, 2009). Psychologists who advocate applications of EBPs (e.g., effectiveness research) should question to what extent the results of RCTs based on these narrow guidelines can be applied to the diverse, multi-faceted and complicated reality that exists in an actual client-therapist setting.

Instead of accepting the claim made by many clinical scientists that RCTs are the only way to establish causation, researchers and psychologists should expand their perspectives to include other methodologies and statistical procedures in their effort to establish causal links (Beutler, 2009, 2014; Beutler, Moleiro et al., 2003). Assigning a single research methodology to the role of gate keeper to the assignment of causal relationships ignores additional factors such as context, patient and therapist characteristics, characteristics of the therapeutic relationship and other factors that contribute to the effects of psychotherapy (Beutler, 2009; Beutler & Forrester, 2014). Clinical Science could learn much from other sciences which are faced with the limitations of RCTs and who have then made huge breakthroughs (such as the “Big Bang” and evolution theories) by adopting the use of multiple converging methods and computer models to extend their conceptualizations of causation (Beutler, 2009).

Systematic Treatment Selection (STS) is an example of an EST that arose in response to the aforementioned criticisms and which has amassed considerable empirical support. STS research rejects the categorization of participants based on diagnosis; instead favoring a formulation that emphasizes the fit of the patient and the treatment within the context of individual factors that impact the efficacy of psychotherapy (Harwood & Beutler, 2008). STS research also integrates different views by asserting that there are clusters of interventions whose methods differ but whose objectives and demand characteristics are similar (e.g., there are lots of ways to be directive) that can serve to assess cross-cutting treatment fit (Harwood & Beutler, 2008).

Measures and methods used to test STS

The methodology of STS was developed by the application of Aptitude Treatment Interaction (ATI) research designs which center on identifying client variables that mediate (i.e., facilitate) and moderate (i.e., differentially facilitate) the effects of interventions (Beutler & Clarkin, 1990; Beutler et al., 2000). The STS principles which are encompassed in identifying the optimal “FIT” of treatment for a particular patient, is highly dependent upon having a reliable and valid measure of: a) the patient’s standing on the critical dimensions that mediate or moderate treatment, b) the

active ingredients of the treatment as it is applied, and 3) outcome. Achieving the measurement tools required, proceeded in four steps, each one of which was linked closely to the derivation of factors that constitute Optimal Fit and Meaningful Change.

Step #1: Identifying patient factors that mediate change

The first step in deriving measures was to identify client factors that predict change (Mediators). Multiple comprehensive reviews of outcome literature on Major Depression and subsequently, Anxiety Disorder and Chemical Abuse were looked for cross-theory and cross-population predictors of change (Beutler & Clarkin, 1990; Beutler et al., 2000; Castonguay & Beutler, 2006; Norcross, 2002, 2011). Repeated consensual ratings were used to reduce the list of client variables and develop a taxonomy of factors within and outside of the treatment itself that mediate change.

Beutler et al. (2000) consolidated the research findings into four major clusters of clients’ traits which correlated with change: 1) functional impairment (i.e., co-morbidity, chronicity, social support, and symptom intensity); 2) coping styles-preferred response to change/stress (i.e., externalizing patterns and internalizing patterns); 3) trait-like resistance from avoidance to reactance; and 4) subjective distress. Castonguay and Beutler (2006), through a series of independently conducted reviews, added four more client factors from extant research. These included stage of readiness for change, preferences for “type” of therapist, demographic variables (e.g., age, education, culture, gender etc), and symptom groupings (i.e., dysphoria, anxiety, substance use and personality).

The Systematic Treatment Selection-Clinician Rating Form (STS-CRF; Fisher, Beutler, & Williams, 1999) was a research instrument that asked clinicians to assess the patient’s status on each of the dimensions identified. This measurement constituted one side of the treatment “fit” algorithm. It included ratings of aspects of symptoms that reflect concepts of change, thus, permitting the clinician to chart patient progress as well as to predict treatment efficacy based on the role of various personal moderators (e.g., coping style, resistance traits, etc.) of treatment.

Step #2: Identifying corresponding treatment factors

The second step in the process of developing the STS system was to identify common and specific characteristics of treatment whose effects are moderated by patient qualities. This step included the initial efforts to identify and measure distinguishing and resulted in the development of profiles that distinguished among treatments and sub-types of Cognitive Therapy. In addition to treatment factors that emerged in the literature reviews (e.g., Beutler et al., 2000; Castonguay & Beutler, 2006), efforts to define characteristics of treatment that distinguish different models of treatment, we also sought to develop treatment profiles.

This task started with the same review of literature that resulted in identifying patient characteristics (Beutler et al., 2000). As the psychotherapy literature was reviewed,

we noted specific procedures as well as clusters of procedures that mediated the processes of change as well as those whose effects were moderated by the identified patient characteristics. The initial list was then subjected to a process of discussion among the research teams, the aim of which was to cluster the techniques into groups with common identifying characteristics. This resulted in the development of the Process Rating Scale (PRS).

In initial research, the PRS proved capable of differentiating among treatments and therapists as well as of identifying important treatment-based correlates of change (Malik, Beutler, Gallagher-Thompson, Thompson and Alimohamed, 2003). Malik et al. (2003) compared 8 manualized treatments and one treatment as usual (TAU), using samples that had been used in prior psychotherapy research studies. The treatments were rated via video and audio tapes using the PRS research instrument. The 8 manualized treatments included psychodynamic therapy, experiential/gestalt therapy, prescriptive therapy, self-directed therapy, pharmacotherapy plus support, and cognitive therapy in three different formats—group, couple, and individual. The procedure revealed consistent profiles that distinguished the treatments as well as correctly classifying the degree of similarity (e.g. the formats of Cognitive Therapy). They identified six major dimensions which comprised the profiles or patterns by which treatments could be identified. These dimensions included: 1) intensity (duration, frequency); 2) format (multi-person vs individual); 3) treatment mode (pharmacology, psychosocial, community); 4) focus (insight/awareness vs symptom-oriented); 5) therapist directiveness (directive vs evocative); and 6) means of affective regulation (affect control vs affect discharge/cathartic). These dimensions were incorporated as scales in the PRS.

From the results of initial tests of therapy and patient factors that predicted change, it was now possible to articulate the principles that represented these relationships. Research findings in which the classes of patient and treatment variables directed us to the patterns that characterized their interactions. From these patterns, iterations and re-iterations resulted in the articulation of 18 principles related to the treatment of depression (Beutler et al., 2000). These principles expressed, in common language, the relationships among patient, context, intervention, and outcomes.

In a subsequent, more extensive review that covered research on personality disorder, chemical abuse, depression, and anxiety, as well as 45 independent authors, 61 principles were identified (Castonguay & Beutler, 2006). These principles required the addition of a number of variables which, in turn, were classified as participant, interventions, and contextual factors.

Step#3: Finalization of clinically useful measures

In the third step in the developmental process, in this step, the STS-CRF (now the STS/Innerlife) was modified and updated and the PRS (now the TPRS) were modified, standardized and ultimately tested for accuracy of clinical predictions. The STS-Clinician Rating Form (STS-CRF; Corbella et al., 2003; Fisher et al., 1999) initially developed

to identify client presenting problems and client mediating and moderating traits which were identified in the step one was updated. The revised scale, the STS/innerlife (Beutler, Williams, & Norcross, 2008) offers reliable measurement of the surviving constructs with proven ability to predict change. The STS/innerlife (Beutler et al., 2008) uses a self-report format to identify patient status on 22 symptom scales and the variety of moderating and mediating variables identified by Beutler et al. (2000) and by Castonguay and Beutler (2006), drawing from a wide body of research that has focused on relationship and individual differences as predictors of change (Castonguay & Beutler, 2006; Norcross, 2011).

Specifically, the STS/innerlife measures 22 symptom scales, five symptom subscales, a risk of self-injury scale, as well as a "lie" scale to evaluate a patient's level of candidness. The particular questions included in this tool assess for patient-treatment fit as well as the patient's level of readiness for change. An additional eight questions address patient demographics while 13 items help to gauge the client's preferences and interests with respect to self-help resources. The result of this measure is the production of two reports, one for both the patient and the practicing clinician. A graphic and narrative output and outcome tracking of symptoms is also offered following completion of this tool.

The Process Rating Scale (now called the Therapy Process Rating Scale—TPRS—was also revised. The original PRS was factor analyzed (Kimpura, Regner, & Beutler, 2013) to yield 5 stable cross-cultural. The current TPRS is relatively short and via participant ratings of sessions, yields five factors whose patterns define differences that matter in psychotherapy of application: 1) therapist style (from directive to evocative); 2) facilitating change through insight/awareness, 3) facilitating direct symptom change; 4) therapist skillfulness; and 5) inducing emotional arousal to support.

The TPRS has been used along with the STS patient measure to test the predictive validity of the principles underlying the STS and to cross validate the predictive power of the identified matching variables (Beutler et al., 2000; Beutler, Forrester, Gallagher-Thompson, Thompson, & Tomlins, 2012; Beutler, Moleiro et al., 2003). The use of these instruments in clinical practice is modeled in relevant research on the predictive power of STS-derived measures of predictors of optimizing "fit" of therapy and patient factors.

Step #4: Validation of treatment predictors using converging methods

In order to achieve the aim of identifying particular patient factors that predict change, STS researchers have conducted multiple comprehensive reviews of outcome literature on Major Depression, Anxiety Disorder, and Chemical Abuse, with the hope of finding cross-theory and cross-population predictors of change (Beutler & Clarkin, 1990; Beutler et al., 2000; Castonguay & Beutler, 2006; Norcross, 2002, 2011). Many new variables have been incorporated into the algorithms that comprise the STS assessment and treatment planning system. The inclusive nature of the STS system

ensures that it remains up to date. The core or original concepts of matching and the principles deriving from these concepts have been widely supported in individual studies (Castonguay & Beutler, 2006) as well as meta-analyses (Norcross, 2011).

Researchers have also conducted a series of independent studies, constituting over 100 research papers and books, using a variety of different methodologies (e.g., Beutler et al., 2006; Beutler, Harwood, Alimohamed, & Malik, 2002; Beutler, Harwood, Kimpara, Verdirame, & Blau, 2011; Beutler, Harwood, Michelson, Song, & Holman, 2011; Beutler, Moleiro, & Talebi, 2002) to further refine the STS concepts and to integrate them with findings from other research groups. These acculturating studies have been aimed at validating STS principles by inspecting patterns of client, treatment, relationship, and "PT X Tx fit". Rather than reviewing the body of literature exhaustively, in the next section of this paper, we will review three studies to illustrate a) the predictive validity of the mediators and the moderators that constitute the concept of treatment "Fit"; b) the value of using converging, multi-method studies to validate the principles postulated in the STS system, and c) the current status of the field.

The current status of empirical support for the STS

The three studies outlined below exemplify what is known about the validity and current status of the STS system. They are part of a larger number of studies that are aimed at identifying patterns of patient, treatment, relationship, and "fit" and of the value of using converging methods of analysis.

1. The Additive Effects of Patient, Therapy, Relationship, and Treatment Fit (Beutler, Moleiro et al., 2003). This study focused on a sample of co-morbid depressed and chemical abusing patients who were seen in outpatient therapy. The study followed the conventional RCT design in which three manualized treatments were compared (Prescriptive Therapy, Cognitive Therapy, Narrative Therapy). However, the design also incorporated the suggestion (Beutler & Forrester, 2014) to include measurements of additional moderating and mediating variables in order to assess the role of treatment fit if interventions failed to prove different from one another. Thus, for this study, the methods included 4 therapy factors, 4 corresponding patient factors, relationship quality, and 4 measures of fit comprised of therapy X patient measures. All of the factors comprised measures of the fit with treatment based on the 18 principles identified by Beutler et al. (2000). The results revealed, as expected based on EBT research, that the formal, manualized treatments yielded equivalent and very similar results, with treatments explaining less than 10% of the variance in outcomes. However, when the data were reanalyzed to inspect the incremental value added by the four patient, treatment, relationship, and treatment X patient "fit" domains as defined by Beutler and colleagues, the results were startling. Each of the four variable domains (and their articulated principles) added
2. Exploring Patterns of Influence among Mediators and Moderators (Beutler & Forrester, 2014). In this study, raw data (videotapes, audiotapes, intake assessment, videotaped sessions, and outcomes) for five data sets (4 RCTs and 1 Quasi-Experimental design) were subjected to a common procedure. The procedure was designed to mimic that undertaken in a typical outpatient clinic. Patients intake materials, for example were distributed to a set of blind doctoral level clinicians who had received training in the use of the STS assessment system. Acting as proxy therapists, they reviewed the intake material and videotaped intake interview and then made ratings of patient impairment levels, social support, coping style, resistance, and levels of distress. They subsequently observed two therapy sessions and made notes about the therapy sessions and treatment relationship. Independent and blind raters also reviewed the videotapes and completed the TPRS to identify and rate the quality of the relationship, available support systems, the severity of the problem and the types and qualities of interventions utilized within the sessions. Objective outcomes (changes in depression and well-being) were based on objective self-report instruments and translated to standard score equivalents. The role of mediators and moderators of treatment, based on the principles driving the STS, were assessed in an analysis of 13 postulated relationships. These relationships were based on the assessment of 4 patient factors, 4 treatment factors, a measure of relationship, and 4 cross-tabulations of patient and treatment matching variables. The patient, treatment, and relationship factors were expected to (collectively) act as mediators of change while the matching algorithms (patient x treatment variables) were expected to serve as moderators, differentiating the optimal type of intervention. Largely, this expectation was confirmed. The overall effect sizes were $d = 1.8$ and $d = 1.2$ for the prediction of a good working alliance and amount of improvement, respectively. It is notable, that some of the intake variables (e.g., Functional Impairment) not only served as mediators of change, as postulated, but also served as moderators in which the score level served to differentially predict outcomes. Postulated moderators of treatment were not all equally active. Those that reflected the fit between Impairment and mode of treatment, resistance traits and directiveness of the intervention, and coping style x symptom change/insight objectives, contributed

strongly to the development of the therapeutic relationship as well as to change. Relationship itself, served largely as a mediator of change but its influence was subsumed by the power of the matching variables. This latter study confirmed the role of mediators and moderators and largely paralleled the results of Study #1. As such, it led quite naturally to the development of the third study on therapist training.

3. Supervision As A Means Of Training Therapists To Apply Cross-Cutting Principles (Holt et al., 2015). This study focused on the question of whether therapy outcome could be improved if the therapists were supervised by someone using the STS principles and providing feedback via the STS reports. Two samples of patients comprised the subsamples on which treatment efficacy was assessed. The patients were seen in a University training clinic that served the Palo Alto, California community and the therapists were PhD students in an APA approved program. Eight supervisors provided STS-assisted supervision to the students. A similar number of clinician supervisors and their student therapists comprised the Supervision as Usual condition. The patients seen by STS-assisted student therapists were initially assessed with the STS/innerlife as well as outcome and personality measures. They were followed through the first 8 to 16 weeks of treatment at which time outcomes were assessed. The control group of therapists were yoked to the STS-assisted group by virtue of seeing a patient who was admitted just before or just after the patient in the STS group. Seventeen experimental and 47 control group patients were followed. Supervisors in the experimental condition were trained in a series of 8, two hour seminars. The sessions identified and discussed the 8 principles that were selected from among a final list of 37 as being among the most robust and researched. Case material also was used to help supervisors learn to use the STS report and cloud-based program. Each supervision session for student therapists consisted of a discussion of one of the principles, followed by a discussion of the relevance of the principle for both the formulation of the patient's problem and for the treatment plan. Feedback from the computer-generated treatment report and the graphs presenting patient factors was used to assist the student's comprehension. The principle on the role of functional impairment was presented first, followed in turn by 3 principles on developing, maintaining and healing the alliance, dealing with resistance, adjusting to the patient's coping style, and using stage of readiness to plan ongoing work and termination. Videotapes of therapy session were also observed by students and supervisors, and periodically, these were used to rate the nature and frequency of interventions using the TPRS. Results (Stein, unpublished dissertation) revealed strong effects of STS-assisted supervision on patient outcomes. The patients seen by student therapists in this group obtained nearly twice the mean improvement ratings as the control group. Overall, the difference between effect sizes for STS assisted and Supervision as usual patients was .67, a strong effect. Both student therapists and their supervisors were very satisfied with the procedures used and with the efficacy of the STS.

Conclusions

The STS is a prototype of Integrative Therapy that is based on the identification and application of multiple empirically derived principles of change that reflect the role of mediators as well as the moderating effects that comprise therapy fit. This model is founded upon the argument that no particular treatment model works well universally, across all patients, and most interventions work well on some patients (Beutler & Harwood, 2002). Logically, therefore, if the therapy environment and procedures can be tailored to each patient, higher improvement rates should be observed. However, it is also acknowledged that by defining psychotherapy broadly to include external moderators and mediators in addition to interventions, the parameters of influence, cannot be established if one relies solely on a single research methodology. RCT, widely considered the "gold standard" for validating psychotherapeutic influences accounts for a relatively small percentage of the change occurring among treated patients and has failed to elucidate clear differences in efficacy when RCT based therapies are compared to treatments as usual or even with one another (Norcross & Lambert, 2006; Wampold, 2001). These failures alone underline the conclusion that other factors besides interventions and diagnosis alone inform optimal psychotherapy outcomes. Thus, multiple methods designed to reveal unveil effects are required to adequately test psychotherapy. We have reviewed three studies with diverse methodologies, all of which converge on similar results and offer these convergences as examples of how such studies can reveal causal chains.

For instance, Study #1 reviewed in the previous section, was a randomized control trial comparing three different treatments (i.e., cognitive therapy, narrative therapy, and prescriptive therapy) on comorbid depressed and chemically dependent patients that found no significant differences among the three manualized treatments studied (Beutler, Moleiro et al., 2003). Clinicians might, therefore be left wondering what particular components are responsible for psychotherapeutic success, if such gains cannot be attributed to type of therapy alone. Study #1 supported the contention of Beutler, Moleiro et al. (2003) that it is not the interventions alone that produce treatment effects. Patient, treatment, relationship, and patient-matching variables offer independent contributions to the prediction and development of positive treatment outcomes. The roles of these factors are usefully expressed as principles, which define the strategic decisions by which one conducts effective psychotherapy. Study #1 highlighted the additive effects of compliance with different principles in effecting and maintaining change. Following empirically derived principles rather than theoretical models, moreover, were revealed to increase the power and effects of treatment, particularly during long term follow-up.

STS principles identify the common moderators that are inherent to successful treatment regimens and matches these predictors or moderators of change with patient assets and treatment strategies that typically result in positive change. In other words, by identifying how a patient fares in terms of particular factors of change, STS helps clinicians to adapt treatment such that it is more tailored to

the patient's particular presentation, rather than adhering to the diagnosis alone or the particular orientation of the therapist. STS affords the therapist freedom to apply various procedures, regardless of their theoretical origin, such that they do not initiate patient resistance, with the awareness that therapist creativity may be a useful way to construct ways of altering treatment to enhance fit. Study #2 illustrated the flexibility of the STS approach as a cross-cutting approach. Therapists working in different clinical trials and representing six different treatment brands initially failed to demonstrate the superiority of any. However, when the data were analyzed in terms of their compliance with the principles, which emphasize strategies rather than specific techniques, patients across the treatment spectrum responded positively. Outcome was strongly related to level of therapist compliance with the STS principles, even when they did not intend to do so. Accidental pairings or therapist skill, the results indicate that the STS principles are cross-cutting and induce change among several different modalities and models.

Although the clinician can use STS, it can also be employed as a supervisory tool to help enhance the overall process of supervision as well as subsequent patient treatment outcomes. The nature of supervision for training psychotherapists has remained somewhat unstructured, and the majority of supervisors employ an integrative approach to treatment. STS, therefore, offers additional structure to such integrative practice by using common dimensions to help standardize the objectives and outcomes of supervision for training clinicians and serve as a foundation for theory-specific training regimens. Drawing upon the previous studies and the list of principles defined by Constantino et al. (In press), Holt and colleagues (Study #3) extracted 8 STS principles and trained clinical supervisors in their use in practice and supervision. This study addressed the disparity between the evidence-based practice focus of theories and the various personal models of therapy, demonstrating that STS principles transcend theoretical differences as well as supervisory styles to facilitate patient change. Indeed, STS assisted supervision outperformed Supervision as Usual and facilitated patient change.

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