DIMENSIONS RELEVANT TO THE HEALTH CARE AND THERAPEUTIC USE OF SELF-CONTROL STRATEGIES: A SYSTEM MODEL FOR APPLIED RESEARCH

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Introduction: Historical Background, Current Plateau

One of the promising areas within both psychotherapy and the health sciences has been the efforts directed toward the development and refinement of self-control strategies. These strategies enable clients and patients to observe, monitor, and alter (if desired) physiological, cognitive, and overt behavior patterns in ways which are more adaptable and health giving. As such, these techniques provide clinicians, physicians, and other practitioners in these fields the ability to begin to bridge the gap between theory, research, and clinical practice, and, in Stunkard’s words, to go “from explanation to action” [1].

A plethora of research studies has shown the clinical effectiveness of these strategies with a variety of affective and physical disorders, including obesity [1], stress [2], hypertension [3], pain [4], depression [5], insomnia [6], etc. Broadly subsumed under the label self-control strategies, these techniques include, but are not limited to, behavioral self-control [7, 8]; cognitive behavior modification [9] and cognitive therapies [10]; meditation [11, 12]; biofeedback [13]; self-hypnosis [14]; progressive relaxation [15]; guided daydreams and imagery [16].

However, although the late 1960s and most of the 1970s were filled with excitement regarding the development, refinement, and utility of self-control or self-regulation strategies, such efforts appear to have reached a plateau.

Recent studies have had almost no success in differentiating efficacies of competing self-regulation techniques as a treatment of choice for

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0031-5982/83/2604-0340$01.00

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a particular dependent variable. For example, Shapiro, in an extensive review of the literature comparing meditation with biofeedback, hypnosis, and progressive relaxation on a variety of physiological and clinical measures, concluded that there were no significant differences among these various strategies [17]—a finding supported by other reviews and more recent studies. In addition, there are difficulties in long-term maintenance and problems of adherence and compliance—and sometimes conflicting results.

Thus, although self-control strategies abound, and there are isolated studies showing the efficacy of different self-regulation techniques with diverse clinical, psychotherapeutic, and health care problems, the question of which particular self-control strategy is a treatment of choice for which client or patient with what type of clinical problem remains, for the most part, elusive and uncharted territory [18].

**Stepping Back: Reassessing and Re-Posing Critical Questions**

Given this state of affairs, it may be an appropriate time to take a step back from isolated empirical investigations, obtain a precise overview of where we are, and posit where we might profitably proceed with respect to applied biobehavioral, psychotherapeutic, and health science research on self-control strategies. This is not to challenge in any way the need for empirical research. Rather, it is to suggest that further research at this point in our knowledge of self-control strategies might be best guided by efforts involving a broad reassessment and reposing of the questions that need to be asked.

Appropriate topics and issues range from a macro to a micro level and include the following: (1) making a concerted effort to develop and formulate a unifying construct (or, if necessary, constructs) of self-control so that the construct of self-control provides a way for organizing and interpreting empirical research rather than a priori and tautologically being assumed and/or embedded with the self-control strategy itself [19]; (2) understanding and grounding self-control strategies within the theoretical and philosophical context and backgrounds from which the techniques arise and within which they are used [20, 21]; (3) exploring value and ethical questions, including a construct of psychological health toward which these self-control strategies might be directed so that we have more than technical and technician knowledge and application and so that unexamined cultural values and mores, as well as the techniques themselves, do not determine the goal and clinical outcome [22, 23]; (4) sensitivity to political, social, organizational, and environmental issues in the delivery and maintenance of self-control strategies [24]; (5) detailing the dimensions relevant to the clinical use of self-control strategies, including the development of a systems and
cybernetic framework within which the interaction of these dimensions might be explored; (6) understanding the components of the various self-control strategies to distinguish inert from active variables, percentage of variance accountable for treatment success within a technique, and a comparison of actual components among techniques (e.g., role of attention, cognitions, imagery, etc.) [8, 12]; (7) refining our understanding of the mediating mechanisms which may account for the effects of these techniques—from a biochemical to an attentional to a psychosocial level [12].

The topic of this article, issue 5—developing a systems framework within which dimensions relevant to the clinical use of self-control strategies might be explored—falls somewhere midway along the macro-micro continuum. On a micro level, each dimension listed can become more precisely and more carefully refined. On the macro side, each patient who comes in with a particular problem is a member of a social system—political, economic, kinship, family. Therefore, the systems model described in this paper can both provide a context for more micro systems and be seen as a subset, a dimension of more macro systems.

The topic is an important one for there is not yet a unifying model within which to see how seemingly isolated research studies on the health care and therapeutic use of self-control strategies might fit together. The formulation of such a comprehensive framework can help to more precisely clarify the multiple interrelationships between variables involved in the clinical utilization of a self-control strategy and help provide us more definitive information on treatment of choice questions. The lack of such a framework, it is suggested, hampers broad and sophisticated research by encouraging, de facto, more single variate designs, each of which is important but all of which must be connected within the system as a whole in order to provide a useful bridge to the multifaceted complexity of the clinical situation. Thus, this paper, utilizing a systems approach as a model, attempts the construction of such a framework. Further, the dimensions of the model, based on diverse theories from both the psychotherapy and health care fields, could help elucidate and evolve organizing principles for the clinical use of self-control strategies. These principles should help us add greater explanatory power in our clinical outcome efforts, while highlighting that unimodal and simplistic beliefs about the efficacy of self-control strategies are inaccurate at best and, as we shall see, may be harmful at worst.

An Interactive Systems Theory: Background, Description, Dimensions

Although a detailed discussion of the principles of general systems theory and cybernetic theory is beyond the scope of this paper and is
available elsewhere [25–28], the following points are important for our
discussion because they suggest how systems theory can be helpful in
connecting the different dimensions of our model.

According to systems theory, the first step in the description of a
system is to establish the boundaries of the system and its relationship to a
function or sphere of activities. The second step is to describe the rel-
ationship among the entities or dimensions, a “radically limited selection
from the set of all relations” [29]. A major principle of these theories
suggests that the behavior of a system (whether atomic, biological,
chemical, therapeutic, familial, or social) emerges from the dynamic
interaction of the parts, and, in the case of cybernetic theory [25, 28],
there is concern with how a system becomes self-regulatory.

The model provided here is in accord with the basic principles of
systems theory and its subset cybernetic theory in that multiple di-
mensions for the clinical utilization of a self-control strategy are
identified, and their interconnection and interaction are shown provid-
ing feedback and information at each successive stage of the intervention
process. The use of feedback among multiple dimensions is not meant to
imply that individual studies are no longer needed on single dimensions.
However, it does mean that those single dimensions interact with each
other, and a context needs to be carefully formulated so that efforts
directed toward the development of the entire model can also be
undertaken. Thus, our dimensions here are intended to provide more
than just a listing of relevant issues, in that a model of interaction among
dimensions is suggested which should offer improvement and under-
standing of the treatment process.

Dimensions of the Model

PROCESS OF SELECTION AND CAVEATS

In determining the dimensions of this model, we examined ideas,
suggestions, and research from many fields and theoretical orientations,
some of which have not been previously combined and may, on the
surface, appear antagonistic. However, this article attempts to articulate
a clear framework suggesting how each of these dimensions is relevant to
the clinical use of self-control strategies within a therapeutic and health
care process.

Thus, dimensions are drawn not only from different self-regulation
techniques which come from different philosophical traditions but also
from traditions such as the behavioral which (in addition to an emphasis
on rigorous evaluation) has historically placed great emphasis on inter-
vention techniques [30]; the Rogerian and existential [31, 32] which
focus primarily on the relationship process (sometimes to the exclusion
of intervention techniques) and variables of accurate empathy, trust, warmth, openness, authenticity, and congruence; the psychoanalytic tradition [33, 34] with its emphasis on dynamics of relationships, transference, countertransference, and its even greater emphasis on the problems of resistance; and the medical health care literature which has developed a small but promising body of knowledge on adherence and compliance [35].

Drawing dimensions from diverse traditions and utilizing them in another context may cause adherents of each tradition to feel that the intent and purpose of the particular dimension extracted from their school have been inaccurately presented. While we are sensitive to the issue [36], there is no simple reply other than that the heuristic utility of a system composed of these dimensions has to be justified by whether it can help a field more effectively coordinate its empirical efforts. To move toward a complete understanding of the clinical utilization of self-control strategies, an expansion of boundaries, drawing from multiple fields and different theoretical orientations, may be necessary. Certainly, this article does not intend to be a final step, but to point the way, provide a foundation model, and supply the beginning of catalytic efforts toward the final step.

CONTENT OF THE DIMENSIONS

There are six different dimensions discussed. These include, on the input side, (1) a therapist, physician, health provider. Issues here include the variables of expectation and demand characteristics, therapeutic orientation. The second input side of the equation is the (2) client or patient—the person with the clinical concern. Relevant variables include motivation, expectation effects, beliefs about ability to learn self-control, individual responsibility, and personality profile (prediction for treatment success, dropout variables, and adverse effects). (See fig. 1.)

Initially, the above two dimensions are independent inputs into the system, but their interaction forms the third dimension, (3) relationship, including issues of nontechnical definitions of transference and countertransference, resistance, trust, and empathy.

Further, both therapist and patient initially have independent views that they bring to bear upon the clinical problem, the (4) assessment of clinical concern, its nature, etiology, etc. The fifth dimension is (5) selection of a self-regulation technique, including a theoretical and clinically based rationale for the technique as independent variable and the clinical concern as dependent variable. The next dimension includes (6) the method of teaching the strategy, with particular reference to issues of adherence and compliance.

Additional factors in the total use of a self-control strategy include evaluation and follow-up. These are not considered as dimensions of the
system but are relevant to any research and clinical effort and, therefore, are included as part of the systemic model. This allows for an interactive approach in which the multiple dimensions are tied together following general systems theory, providing feedback and information at each successive stage of the intervention process.

To ground this discussion, the empirical literature on the self-regulation technique of meditation is often utilized as a case in point. (Although meditation has been shown to be an effective self-regulation technique in clinical areas relevant to psychosomatic medicine, behavioral medicine, and health care [12], this article is not intended to be a methodological review of the clinical and physiological effects of meditation, for which the reader is referred elsewhere [11].) The use of one particular self-control strategy as an illustrative example is intended to provide detail and specificity to the model so that others may see its efficacy and use it to ground additional self-control strategies and thereby help to guide research both within and between self-control techniques.

![Diagram]

**Fig. 1.** Dimensions relevant to the clinical use of a self-control strategy—an interactive systems theory model.
Effects of a Self-Control Strategy on a Clinical Concern: Dimensions 4 and 5

We begin our discussion with dimensions 4 and 5 because these are the dimensions upon which most of the research on the clinical efficacy of self-control strategies has focused. Early first-round research on these two dimensions focused on the application of a particular self-regulation technique to a specific clinical problem. These first-round studies evaluated the technique's efficacy by comparing, in \( N = 1 \) design, the intervention to baseline observation, or, in group design, to a no-contact control group. As noted, results were promising on a wide variety of clinical, psychosomatic, and stress-related concerns [1-6].

At this point there is a certain excitement in the field based on these results and an enthusiasm and hope that a given self-control strategy might in fact become a major breakthrough, significantly different from and more effective than competing strategies [37]. To test this, a second-round literature on self-control strategies compared techniques with each other to try to determine which was better for a particular dependent variable. Techniques compared include meditation, progressive relaxation, Benson's relaxation response, self-administered systematic desensitization, cardiovascular and neuromuscular feedback, and hypnosis. However, at this point in our knowledge, one technique's overall effectiveness has not been unequivocally borne out [17]. This is true for clinical dependent variables such as general anxiety [38]; alcohol consumption [39]; insomnia [40]; or borderline hypertension [41]; and for physiological variables such as GSR, EEG synchronicity; and biochemical indices including plasma, epinephrine and norepinephrine, and lactate [42].

It is at this point that the second-round research efforts have reached a plateau; here third-round efforts, requiring more precision and sophistication, become critical.

These third-round efforts, rather than trying to pursue the question of whether one particular strategy is unique and more effective than other strategies in general, involve an attempt to evolve more precision in terms of when to utilize a particular strategy for a particular person with a particular clinical problem.

On the independent variable side (the self-control strategy—dimension 5), there need to be renewed efforts to ensure that the selection of the self-control strategy involves as clear a theoretical rationale as possible between the independent and the dependent variable. The development of this rationale has often been hampered by lack of an operational definition of what we mean by a self-control strategy. On the basis of the definition, we can then develop a component analysis of the various techniques such as has been done with behavioral self-management
[8], biofeedback [43], hypnosis [44], or meditation [12]. This can help us determine what are the active and what are the inert criteria which may be affecting treatment outcome (as well as the interactive effects between the components of the self-control strategy).

By breaking a self-control technique into its various components, we may be able to determine when there are actual differences among techniques and when differences are only semantic distinctions. In so doing, we may then be able to determine whether a single technique or combination of techniques might be useful in treating a particular clinical problem, as in the frequent use of combining autogenic training with biofeedback.

In addition to the refinement of the self-control strategy, refinement of the dependent variable or clinical concern becomes increasingly important. Information not only on length and severity of prior clinical history but also on how the clinical concern (disease etiology) is conceptualized will determine the primary focus of the intervention: historical causality versus here and now; attentional factors, cognitive variables; whether behavioral interventions and rehearsals are needed; environmental change strategies versus support groups, etc.

Examples of earlier work suggesting the importance of refinement of the dependent variable was done by Budzynski [45] and Glueck and Stroebel [46]. The former found that EMG biofeedback was the treatment of choice for tension headaches, and temperature training, for migraine. Glueck and Stroebel noted that clinical problems such as migraine headaches or Raynaud's disease are not as amenable to amelioration by meditation as by temperature and EMG biofeedback for eliciting vasodilation and muscle relaxation. On the other hand, it appears that for "general relaxation" meditation is the treatment of choice; and for a specific stress area, biofeedback [47].

Two additional promising pieces of work have been done on the dependent variable which deserve mention. Kirkland et al. [48], looking at the dependent variable of test anxiety, reported that individuals in the skills acquisition group did significantly better than individuals in the other three groups (cue controlled relaxation, meditation, or repeated practice). This study highlights the importance of specifying and refining the dependent variable to determine more precisely the problem behaviors, which, in this example, appear to be less test "anxiety" than actual skill at test taking. There have also been efforts to differentiate the dependent variable of stress between cognitive and somatic anxiety, suggesting that cognitive focusing strategies (e.g., meditation) are more effective with cognitive anxiety and somatic strategies (e.g., jogging, exercise) for dealing with somatic anxiety [49].

In addition to the refining of the independent and dependent variable, further efforts at refinement have included looking at the two
input sides of the equation carefully—the patient and the health care provider.

_The Input Sides of the Model: Dimensions 1 and 2_

The term input sides of the equation is used because perceptions of the health care provider and the patient are the filters through which all subsequent information is determined. By having dotted arrows (fig. 1) from the patient to the clinical concern and intervention selection, I do not mean to abnegate therapist responsibility for assessing clinical concern and intervention selection—only to point out the importance of the patient's perception in helping to understand and formulate both assessment and interventions.

_The Patient: Dimension 2_

By careful attention to the "patient input" side of the equation, we can develop a greater sensitivity to what has loosely been termed the "whole person" described in psychosomatic medicine [50] as well as in behavioral medicine [51] and holistic medicine [52]. Attention to the whole person, rather than attention just to manifest disease represented by the clinical concern, is more than a philosophical or abstract statement. In terms of health care treatment, it is a functional question and influences treatment outcome as evidenced in the following discussion of the third-round literature on patient variables.

BELIEF IN ABILITY TO CHANGE, RESPONSIBILITY, AND ATTITUDE TOWARD A SELF-CONTROL TECHNIQUE

The first area involves the patient's belief in his or her ability to change [53]. The second issue is individual responsibility, and the third is the belief in the efficacy of a particular treatment technique.

Since the literature is quite convincing that expectation effects, as a placebo, can influence treatment outcome [51], before teaching any self-control strategy we would want to assess the individual's beliefs about the possibility of learning a self-control technique and thereby changing his behavior, attitudes, images, cognitions. This would include general locus of control issues [54, 55] but become more precise and domain specific.

A second issue implicit in the area of self-control strategies is the one of individual responsibility. In order for an individual to learn a self-control strategy, he must be willing to take responsibility for the practice of it [56-58]. Again, in teaching a self-control strategy to an individual, it would seem important to assess the client's "level" of individual re-
sponsibility as one important antecedent context for the eventual teaching of the self-control strategy itself. (The very words "teaching of the self-control strategy" may be considered paradoxical. However, in utilizing this phrase, I view it as a continuum in which throughout the course of therapy more and more of the "control" is given to the patient. Further, as discussed in dimension 6, the actual practice of the technique rests solely with the patient.)

The client's view of a particular self-control strategy also needs to be assessed. For example, Barber [59] noted that calling a technique hypnosis improved the likelihood of successful outcome. As we select our different self-control strategies, it is important to look closely at the client's affect toward the verbalization which describes our technique, whether that word by hypnosis, meditation, or biofeedback.

MOTIVATION/RESISTANCE

An additional patient variable that needs to be further investigated is motivation—why and to what extent do people want to change or grow? How intensely committed do they perceive themselves as being to work for this change? Preliminary evidence [60] suggests that motivation—the subject's initial desire to learn the technique—is an important issue with respect to treatment outcome.

A related issue to motivation involves resistance. Although a technical term first used by Freud to describe the two aspects of the person warring between life (eros) and death (thanatos), resistance can be conceptualized and defined by a functional analysis of the patient's environmental consequences. For example, a useful question here is "What aversive consequences might occur if the technique works successfully and helps the individual change?" that is, consequences which would cause the patient to resist change during the learning process? Anecdotal clinical experience suggests that often resistance to utilizing a self-control technique can be addressed by trying to understand the consequences if the technique is successful [61] and what currently is maintaining the behavior in the here-and-now environment (i.e., secondary gain).

PATIENT PROFILE

The final patient variable issue involves developing a subject profile which includes the following four questions: Are there differences between those interested in learning a self-control strategy versus those who are not [62]? For those interested, how do subjects who drop out compare with those who continue (i.e., those who adhere and comply) [46, 63]? What are the qualities of those who continue to a successful outcome, for example, high internal locus of control [55], belief in ability

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to change [53], better attentional focus [64]? What are the qualities of those who continue with the practice of a self-control strategy and yet have adverse effects [65]?

Finally, it should be noted that studies on subject profile for the most part utilize predictors of success involving trait and personality descriptions. Given the rather convincing review of the situational specificity of behavior [66], it might be important to define nontrait skills (attentional skills, ability to sit quietly, and/or cognitive beliefs and their ability to predict successful outcome).

A final promising approach may involve matching a person’s perceptual response mode to a cognitive focusing strategy. For example, if a person’s response mode is primarily auditory, then when using biofeedback, a visual stimulus may be preferable [67]. When using meditation or hypnosis, an auditory stimulus may be preferable [49].

These refinements are only a beginning step showing the relevance of dimensions 2, 4, and 5 in matching treatment to person to clinical problem. However, they are at least a start in the right direction, and provide beginning framework for additional research refinement and sophistication.

The Health Care Provider: Dimension 1

The other input side to our model is the health care provider. Interestingly, this dimension has been studied even less than the patient and so reflects a paucity of data [68].

ORIENTATION, BELIEFS, AND “DEMAND”

At least one aspect of the question of whether a self-control strategy is effective seems to depend upon the therapist’s or researcher’s theoretical orientation, and what he decides to measure as the criteria for “successful outcome.” Therefore, we, as therapists, researchers, and educators, when we use a self-control strategy, need to be as aware as possible of our own professional and personal preconceptions, values, and biases toward therapeutic treatment. In particular, it has been argued elsewhere [36] that all of us have, implicitly or explicitly, a vision of positive health, a view of normality, a view of the person’s possibility of changing, a view of disease etiology, and a view of interventions appropriate to reach the goal of positive health. These views will determine how the health care provider assesses the patient’s concern and what interventions are deemed appropriate (evidenced by the dotted lines from dimension 1—the therapist—to dimensions 4 and 5 in fig. 1). These views, which are really loosely constructed theoretical orientation, create a certain demand on the client. This “demand” postulates implicitly or explicitly the following: (a) belief in a vision of positive physical and/or mental
health; (b) belief in a procedure, set of values, or series of techniques which can enable an individual to reach that vision; (c) the belief that if the patient believes as the therapist believes and practices as the therapist practices and/or advocates, he will achieve the desired vision. This demand has an effect on treatment outcome, moving it, as we would suspect, toward the effect postulated by the therapist [69].

The importance of differences of focus of dimension 1 becomes clearer when we look at how individuals from different theoretical orientations utilize the self-regulation technique of meditation. From a psychoanalytic standpoint, meditation, for example, has been conceptualized as an "evocative" strategy which allows repressed material to come from the unconscious and facilitates controlled regression in the service of the ego [70]. Those individuals, when utilizing meditation with their patients, see it as a positive vehicle for inducing what Freud called primary process thinking (i.e., thinking that avoids or bypasses rational defense mechanisms) and for recollecting memories of traumatic events, criteria which Freud himself has posited as necessary for developing psychological health and overcoming pathology [33].

Those humanistically oriented psychologists [71] who use meditation in their practice view it as a technique for helping a person become sensitive to his innate self-actualizing nature [72] and for helping an individual turn from an external to an internal orientation. (Humanistic psychology, as represented by Rogers [31], is used here as a summary term for the ego psychologies. This lumping together, although convenient and suitable for purposes of the discussion here, obscures some of the differences between the neo-Freudian psychoanalytic ego development psychologist and the humanistic psychologist [36].) From the perspective of holistic medicine [52], meditation is viewed as a way of enhancing individual client responsibility and of teaching the client to develop nonpharmacological approaches to self-care. Meditation is considered to be a successful strategy if the client is able to become more in touch with his "true" self, become more inner-directed, take more self-responsibility, and be more psychologically and physically centered.

A third school of therapy which utilizes meditation is the transpersonal approach. This approach is probably most clearly aligned with the original spiritual intent of meditation practices of the East. From a transpersonal perspective, meditation is conceptualized as a technique

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1 From a clinical standpoint, there is an interesting philosophical and ethical dilemma regarding demand characteristics. On the one hand, we are aware of the power of belief systems and the self-fulfilling nature of those belief systems. Thus, as clinicians, we want to maximize expectations and beliefs in the patient; however, we want to do this only within the limitations of honesty and integrity. Further, we want to try to be sensitive to insure that we did not hold our "demands" so strongly that we are unwilling to question them and/or have them altered by invalidating evidence. For then the orientation, rather than being a useful method for organizing information and hypotheses about the world, becomes a blinder to new information and may cause a type of evangelical fervor to convince others of the rightness of one's views.
that helps individuals let go of thoughts, become relatively egoless, yielding, present centered [21, 73]. The individual learns how not only to build a strong sense of self but, as Maslow [72] pointed out, how to surrender the ego and to develop a high degree of perceptual clarity about one's thought patterns, habits, behaviors without the accompanying affect—an awareness of each moment.

Behaviorally oriented individuals who use meditation in their research or practice view it primarily as a self-regulation strategy for dealing with clinical, health-related, and stress-related concerns. Thus it has been conceptualized as a self-regulation strategy with potential applications in behavioral medicine [51] or as a clinical tool for the management of anxiety and the addictions within a behavioral framework [8]. From this perspective, meditation is considered to be a successful treatment if it proves effective in significantly reducing the target behavior problem [74].

Thus, from reviewing the above orientations, we can see that one critical aspect of developing a complete systems framework for understanding self-control strategies is to look at how the different orientations view the strategies, what the expectations are for outcome, what is considered positive outcome, and how the strategies are then utilized.

**Relationship: Dimension 3**

Self-control strategies are generally taught within a context involving the two input sides of our systems model (physician and patient, therapist and client, researcher and individual). Different orientations place varying emphasis on the importance of the interaction and ultimate relationship that develops between these two dimensions. For example, classical Rogerian client-centered therapy [31] views the relationship as the critical variable in successful therapeutic outcome. As he noted, among the seven necessary and sufficient variables for therapeutic personality change to occur, there must be two people in close interpersonal contact, and the client must perceive the therapist's nonjudgmental, accurate, empathetic understanding of the client's frame of reference and unconditional positive regard for the client.

Traux and Carkuff later developed scales for measuring congruence and genuineness, nonpossessive warmth, and nonjudgmental accurate empathy and concluded from their research that these three variables are characteristics of human encounters which are therapeutically beneficial [75].

The analytic perspective also views the relationship as an important variable, particularly in the area of transference and countertransference. Technically, transference is defined as the experience of feelings, drives, attitudes, fantasies, and defenses toward a person in the
present which are not characteristic of that person but, rather, are a
repetition of reactions originating in regard to significant persons of
early childhood, unconsciously displaced onto figures in the present
[34]. In the context of this article, the terms refer more generally to the
relationship between the client and therapist: how the client perceives
the therapist (transference), for example, does the client want an au-
thority figure, male or female therapist, warm individual, etc.? And how
the therapist perceives the client (countertransference), for example, can
he work with this client? Does he dislike the client? These are variables
which may clearly effect the therapist's ability to teach the client a self-
regulation technique.

The transpersonal, or spiritual, perspective has two different views
with regard to the role of the teacher/therapist and relationship. Initially
it is seen as critical in the therapeutic process to have someone as a guide.
As in classical psychoanalysis, this person should be someone who has
undergone the practice (i.e., the spiritual discipline). However, ultimate-
lly, in many traditions, although the role of the teacher is acknowl-
edged, eventually the individual must leave the teacher and experience
for himself.

The role of the therapist and therapeutic relationship is emphasized
much less in the behavioral tradition. Instead, the emphasis is on the
utility of the strategy, and therefore tape-recorded or other semi-
automated methods of disseminating techniques to individuals are con-
sidered appropriate and useful. (However, even from a behavioral per-
spective, it has been noted that to have an individual close his eyes [e.g.,
in order to learn a relaxation technique] can be a frightening experience,
and therefore it is important that the client trust the therapist enough
to follow the techniques.)

Teaching of the Technique: Skill Acquisition Plus Issues of Practice,
Adherence, and Compliance: Dimension 6

As can be seen from figure 1, the other important interactive dimen-
sion is the means by which the self-control techniques are taught—what
are the best methods of communicating techniques between health care
provider and patient in such a way that skill learning is maximized and
adherence and compliance facilitated?

Adherence to treatment is an important aspect of any self-regulation
strategy, whether that strategy be for assertiveness training, relaxation,
or medical compliance [35]. Important questions with respect to self-
control adherence include, Is there an optimal maximum amount of
time per day for practice? Can one practice too much? What is the
relationship between length of experience and effectiveness? Recent
studies, for example, suggest that the effectiveness of self-regulation
techniques such as meditation as a treatment depends on both steady and prolonged practice of the technique; that the longer the practice, the greater the increase in concentration; and the more experienced the meditator, the more physically stable the posture and the greater likelihood of treatment success [12].

Past studies, however, have shown a large percentage of individuals do not maintain the practice of their self-control strategies. As Zuroff et al. noted in the 2½-year follow-up of meditation and muscle relaxation, fewer than 20 percent were practicing as much as once a week [73]. Glueck and Stroebel noted that all subjects in their biofeedback and autogenic training group dropped out, as well as at a later time a sizable number of their meditation group [46]. Marlatt et al. [39] monitored adherence to different relaxation strategies and noted that, after the intervention phase, when given a choice, individuals almost without exception chose to discontinue all types of treatment ranging from pleasurable reading to meditation (Benson’s method) and progressive relaxation. Figures ranging from 25 to 50 percent and sometimes higher are not uncommon with respect to individuals who drop out of meditation [12].

There are three critical issues with respect to adherence and compliance: (a) whether subjects say they practiced, (b) whether they in fact practiced, and (c) how to maintain adherence. In response to issue c, we need to look at modeling, successive approximation, and reinforcement in terms of skill building. Ways of increasing adherence and compliance may also involve providing preparation before the teaching of the technique as well as follow-up checking after the technique has been taught [46]. Other ideas include having the client develop a self-contract, working with the client to determine time and place of practice, building in an initial reinforcement, providing for successive approximations to the desired time limit, carefully understanding the client’s initial motivation and desire to learn meditation, and using positive images of desired consequences as ways of facilitating and increasing motivation to continue the practice. Research needs to look precisely at the relationship between ways to increase adherence and treatment outcome.

**Evaluation: The Interactive System**

Evaluation of clinical efficacy is a standard part of any good psychotherapeutic and health care treatment, regardless of orientation. And it is at this point where a systems model, involving feedback loops between our different dimensions, becomes critical (see heavy dark lines, fig. 1). The systems model that we have described and the various dimensions which we have explicated can now be put within an overall framework, illustrated by figure 1.
If evaluation is positive (therapeutic success), termination and follow-up are again appropriate standard aspects of treatment. However, if not, feedback loops from the evaluation to each of the various dimensions can help us determine very precisely which ones may be facilitating treatment outcome and which not.

If the technique does not appear to be successful for the client, a reassessment of the clinical concern, the therapist “teaching” style, and/or the strategy itself may be in order. An additional strategy or combination of strategies may be indicated. By following this feedback model in an intensive case study approach, clinicians can contribute invaluable information toward helping generate more sophisticated hypotheses for future research.

Unfortunately, given the state of our current art, in many cases we do not know which treatment strategy is the most effective for a particular client. Therefore, at this stage, clinicians often have to use their “intuition” in making a decision. Insofar as possible, this decision should be based on the research literature; but where the literature is not yet adequate, the clinician should try to evaluate as honestly and accurately as possible the effects of the intervention, including how effectively the technique(s) utilized generalize to nonpractice times.

The systems model as illustrated, in addition to providing clinical utility in intensive design studies, should also help us more clearly indicate directions in which future research needs to go. Using more complex multivariate designs, and specifying replicable components within each of the dimensions as described in this paper, we can design more precise and sophisticated studies to determine relative variances from each related dimension contributing to treatment success. Further, through multiple regression techniques, we may determine potential predictors of treatment success (e.g., level of motivation, responsibility, self-efficacy, etc.). By building up our information base within the dimensions of this framework, we should develop the requisite knowledge about patient, intervention, and clinical concern. This knowledge should, in turn, help us be in a much more sophisticated position to understand our own biases as health care providers and can subsequently contribute to optimal utilization of self-control strategies in order to maximize treatment success for our patients.

REFERENCES

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