Encyclopedia of
PSYCHOTHERAPY

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Michel Hersen, Ph.D., ABPP, is Professor and Dean, School of Professional Psychology, Pacific University, Forest Grove, Oregon. Dr. Hersen is a graduate of State University of New York at Buffalo, and completed his post-doctoral training at the West Haven VA (Yale University School of Medicine Program).

Dr. Hersen is past president of the Association for Advancement of Behavior Therapy. He has co-authored and co-edited 133 books, and has published 223 scientific journal articles. Dr. Hersen is also co-editor of several psychological journals, including *Behavior Modification, Aggression and Violent Behavior: A Review Journal, Clinical Psychology Review, Journal of Anxiety Disorders, Journal of Family Violence, Journal of Clinical Geropsychology*, and *Journal of Developmental and Physical Disabilities*. He is editor-in-chief of a new journal entitled *Clinical Case Studies*, which is devoted to description of clients and patients treated with psychotherapy. He is co-editor of the recently published 11-volume work entitled: *Comprehensive Clinical Psychology*.

Dr. Hersen has been the recipient of numerous grants from the National Institute of Mental Health, the Department of Education, the National Institute of Disabilities and Rehabilitation Research, and the March of Dimes Birth Defects Foundation. He is a diplomate of the American Board of Professional Psychology, Fellow of the American Psychological Association, Distinguished Practitioner and Member of the National Academy of Practice in Psychology, and recipient of the Distinguished Career Achievement Award in 1996 from the American Board of Medical Psychotherapists and Psychodiagnosticians. He has had full-time and part-time private practices.

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Dr. Sledge has been a faculty member at Yale University School of Medicine for 25 years. He has written about psychotherapy and psychoanalysis and is a mental health services and health services investigator. In addition, he provides psychiatric consultation to the aviation industry and investigates the neurobiological basis of the thought disorder of schizophrenia.

Dr. Sledge has had a long, distinguished career as an educator, and has functioned as an administrator of a variety of medical educational programs at Yale. In addition to his medical duties, he has been Master of one of the Yale undergraduate residential colleges, Calhoun College, for seven years, and is the chair of the Council of Masters.

Dr. Sledge has been active in the American Psychoanalytic Association and the American Psychiatric Association, primarily in the areas addressing education and psychotherapy. He is former chair of the American Psychiatric Association Committee on the Practice of Psychotherapy and a member of the Commission on the Practice of Psychotherapy by Psychiatrists. He is a member of the Group for Advancement of Psychiatry Committee on Therapy.

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Alan M. Gross, Ph.D., is Professor of Psychology and Director of Clinical Training at the University of Mississippi. He is the former editor of the *Behavior Therapist* journal, and recently served as associate editor for the *Journal of Clinical Child Psychology*. He currently serves on the editorial boards of several scientific journals, including *Behavior Therapy*, *Journal of Clinical Child and Adolescent Psychology*, *Behavior Modification*, *Journal of Family Violence*, and *Aggression and Violent Behavior*.
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Dr. Kay is the editor of 8 books and has published extensively on the topics of medical and psychiatric education, medical ethics, child psychiatry, psychoanalysis, psychotherapy, and psychosocial aspects of AIDS and of cardiac transplantation. He was designated as a 1994 Exemplary Psychiatrist by the National Alliance for the Mentally Ill and is the recipient of the 2001 APA-NIMH Seymore Vestermark Award for contributions to psychiatric education.

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Bruce Rounsaville, M.D., is Professor of Psychiatry at the Yale University School of Medicine and director of the U.S. Veterans Administration New England Mental Illness Research Education and Clinical Center. Since he joined the Yale faculty in 1977, Dr. Rounsaville has focused his clinical research career on the diagnosis and treatment of patients with alcohol and drug dependence. Using modern methods for psychiatric diagnosis, Dr. Rounsaville was among the first to call attention to the high rates of dual diagnosis in drug abusers. As a member of the Work Group to Revise DSM-III, Dr. Rounsaville was a leader in adopting the drug dependence syndrome concept into the DSM-III-R and DSM-IV Substance Use Disorders criteria.
Dr. Rounsaville has been a strong advocate for adopting psychotherapies shown to be effective in rigorous clinical trials. Dr. Rounsaville has also played a key role in clinical trials on the efficacy of a number of important treatments, including outpatient clonidine/naltrexone for opioid detoxification, naltrexone for treatment of alcohol dependence, cognitive–behavioral treatment for cocaine dependence, and disulfiram treatment for alcoholic cocaine abusers. He has contributed extensively to the psychiatric treatment research literature in over 200 journal articles and 4 books.

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Warren W. Tryon, Ph.D., ABPP, is Professor of Psychology and Director of Clinical Training at Ford-ham University, Bronx, New York. He is a fellow of Division 12 (Clinical Psychology) of the American Psychological Association, a fellow of the American Association of Applied and Preventive Psychology,

and a founder of the Assembly of Behavior Analysis and Therapy. He is a diplomate in Clinical Psychology— American Board of Professional Psychology (ABPP). He is listed in the National Register of Health Service Providers in Psychology and is a licensed psychologist in New York State.
Dr. Tryon has published over 130 articles, has authored 1 book, and edited 2 others. He has presented over 115 papers at professional meetings. Dr. Tryon is on the editorial board of *Behavior Modification* and has served as reviewer for for over 30 journals and publishers. Seventy doctoral students have completed their dissertations under his direction.

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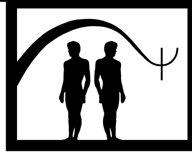


Preface

When we began this project, it would have been beyond our most radical beliefs to think that we would be seeing a nation fraught with intense worry, anxiety, acute stress disorder, post-traumatic stress disorder, grief, and depression less than three years later. So now, as we put our finishing touches on this work, and following the terrorist incursions, we regrettably have been forced to see the graphic proof of the inherent value of psychotherapy. The critical contributions and the value of the psychotherapeutic arts have never been clearer to us than in the aftermath of the terrorist strikes. We say this with much humility, in that we would have preferred to continue to talk about the sometimes small theoretical differences in various psychotherapeutic applications, in what now seem to be needless polemics between such psychotherapeutic camps. Nonetheless, the original intent (which continues today in spite of world events) was to present a compilation of both the science and art of psychotherapy.

Psychotherapy has been a vital treatment in health care since development of the great innovative and technical approaches embodied by psychoanalysis and behaviorism at the beginning of the 20th century. In the course of its development, many questions have been raised about this treatment: What is psychotherapy? How does it work? Which forms are cost effective? Who can do it? How does it fit into a comprehensive approach to health care? What is its scientific basis? How does theory drive treatment? What is the role of complementary treatments such as pharmacotherapy in combination with psychotherapy?

The *Encyclopedia of Psychotherapy* strives to answer the aforementioned questions. It is a comprehensive reference to extant knowledge in the field and written in clear expository language so that it will be of value to professional and lay persons alike. Within its pages, this encyclopedia addresses over 200 topics by experts in psychotherapy. Topics were selected in order to give broad coverage of the field (albeit not exhaustive) so as to encompass the most contemporary schools and approaches that have clearly defined techniques, some form of systematic study, and measurement of outcomes. Eclectic and integrative approaches have also been considered. Additional topics that transcend all schools, such as the impact of culture and the importance of the therapeutic relationship, have also been included as well as discussion of the treatment for some specific disorders.

Psychotherapy is an extremely complicated process that is difficult to fully capture even in a work of large scope, such as this encyclopedia. The interplay between scientific confirmation of particular strategies and the actual implementation of a given therapeutic technique is not always isomorphic. Also, how theory drives practice and ultimately the empirical confirmation of such practice, is not always clear cut. Moreover, how cultural, financial, legislative, and forsensic issues act in confluence further complicate the intricacies of what we refer to as psychotherapy. However, it is these very intricacies and complexities which make psychotherapy such an interesting field to examine. In many ways, this work may raise more questions than it does provide answers, and that, perhaps, is the way it should be.

The *Encyclopedia of Psychotherapy* is designed to serve the needs of a multi-faceted audience. As a reference work, we see it being used by students and professionals from counseling and clinical psychology, psychiatry, psychiatric nursing, and social work. Certainly, other disciplines will make reference to it as well. But the encyclopedia will also be of use to interested lay individuals seeking information about this burgeoning field. Topics are arranged alphabetically. As appropriate, a good many of the entries have case

descriptions to illustrate the specifics of theory and technique. The topics addressed span clinical, theoretical, cultural, historical, and administrative and policy issues, as well as the matters of schools and specific patient conditions. Most importantly, a comprehensive user friendly Index is provided.

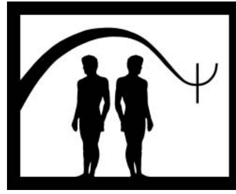
Early on it was apparent that a project of this magnitude would require associate editors and an advisory board to ensure broad coverage of issues and topics. The inclusion of these colleagues has added immeasurably to the fruition of this work. The associate editors (Alan M. Gross, Ph.D, Jerald Kay, M.D., Bruce J. Rounsaville, M.D., Warren W. Tryon, Ph.D.) were chosen in order to represent the cross-fertilization between the medical and the psychological, adult and child, theoretical and pragmatic, research and practice, and behavioral and non-behavioral. Similarly, the 18 advisory board members (both M.D.s and Ph.D.s) were selected because of their broad range of interests and expertise in all aspects of the psychotherapeutic endeavor.

The iterative process began with a large list of topics selected by the two editors-in-chief, which was then refined by the associate editors and the advisory board members. Excellent suggestions for authors were made and the solicitation process began. When received by Academic Press, each entry was evaluated by an appropriate associate editor, revised to the editor's specifications, and then sent on to one of the two editors-in-chief for approval and/or further modification. All entries were reviewed on the basis of accuracy, completeness, clarity, brevity, and the absence of polemics. The resulting *Encyclopedia of Psychotherapy* is a product of complete collaboration between the two editors-in-chief, and hence the order of editorship is alphabetical.

We are grateful to the many individuals who helped make the *Encyclopedia of Psychotherapy* possible. Thank you to the four associate editors who performed in an exemplary fashion. Thank you also to our 18 members of the advisory board for their wise counsel and excellent suggestions. Thanks also to our contributors who took time out from their busy schedules to become part of our project, sharing their expertise as well as articulating their views on where this field stands. We thank Alex Duncan, Angelina Marchand, and Angelina Basile for their research efforts. We appreciate Carole Londeree's technical assistance. We thank all at Academic Press who were involved in the production effort, especially the acquisitions editor, George Zimmar, and the coordinator of the *Encyclopedia*, Anya Kozorez, for helping us to conceptualize this work and overcome obstacles to see it through to publication.

We dedicate this work to our colleagues who work on a daily basis to relieve the suffering of their clients.

Michel Hersen
William Sledge



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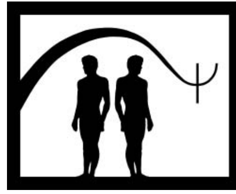

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Acceptance and Commitment Therapy

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I. Theoretical Bases of ACT
II. Description of ACT Treatment
III. Empirical Studies of ACT
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GLOSSARY

cognitive fusion The act of perceiving private experiences such as thoughts and feelings from the perspective structured by the private event itself rather than the perspective of an observer of that event as a process. Reducing fusion is a key target of meditation, mindfulness, and deliteralization interventions in ACT.

cultural change agenda The culturally sanctioned model most clients bring into therapy holds that the goal is to gain control of and eliminate negative personal content. This agenda for changing from an unhealthy person with "issues" to a healthy person without "issues" has the paradoxical effect of increasing suffering.

literality The capacity of representational thought and language to take on literal meaning and for the derived stimulus functions of referents to dominate over other sources of behavior. An example is "anticipatory panic attacks," which result from simply imagining being in a panic associated situation, such as a mall or elevator, and then taking those thoughts literally.

relational frame theory (RFT) A post-Skinnerian account of the structural and functional properties of human language and thought that is based in contextual behaviorism. RFT views language and thought as relational behavior that is controlled by learning factors.

Acceptance and commitment therapy (ACT) is a contextually based cognitive behavioral treatment. The ACT model holds that culturally supported attempts to control and eliminate unpleasant private experiences (i.e., negative emotions, thoughts, memories) result in personal suffering, behavior disorders, and a lack of vital and purposeful living. ACT attempts to teach clients to accept, rather than control or eliminate, private experiences that are not amenable to first order change. Acceptance is accomplished through teaching the client to see these private experiences as conditioned verbal responses, rather than literal truth. ACT emphasizes that the client approach, rather than avoid, valued life goals, even though pursuing such goals may stimulate "uncomfortable" private experiences.

I. THEORETICAL BASES OF ACT

Acceptance and commitment therapy is unique among the cognitive behavioral therapies in that it is theoretically derived from relational frame theory (RFT). RFT is a post-Skinnerian behavior analytic account of the functional properties of human language and thought, developed by Steven Hayes and other behavior analytic researchers around the world. Hayes and colleagues conducted two decades of basic research to validate the core principles of RFT before introducing the ACT therapy model. As we shall see, many ACT interventions are based in RFT principles and are designed to influence the contextual and functional characteristics

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of language and thought. There are several principles of RFT that are directly relevant to both the development of human suffering and psychopathology, as well as clinical interventions.

First, it is not functionally useful to separate the functions of human language and thought from the contextual field in which the human organism operates. These processes are learned, reinforced, and reciprocally governed in the same fashion as any other learned human behavior. In RFT, language and thought are a special form of relational behaviors that enable the human organism to relate events bidirectionally and in combination, whereas direct experience is only unidirectional. For example, learning that a ball is called "ball" enables the human to look for and orient toward the ball when later hearing "ball." This simple process is apparently absent in nonhumans, but occurs in human infants by about 14 months.

A second critical RFT principle is that the context or "field" of language and thought involves both externally and internally generated verbal relations. The external context is the verbal community, consisting of verbally transmitted cultural practices (i.e., the language called "English" is what you will speak), social influence and consequence (i.e., you need to justify with the correct set of words why you hit someone, otherwise you get punished), and interpersonal influence (i.e., if you don't give a good reason why you hit Johnny, you will get a spanking). The development of a culturally compliant human organism is dependent on this process. The main vehicle of cultural transmission is the process of language acquisition and refinement. Eventually, language is experienced covertly in the form of thinking. The internal context is the relationship between the thought and the thinker. Humans have the ability to "receive" thoughts, weigh their merits (using other thoughts) and produce an action justified in terms of the second set of thoughts. The complexity of this constantly evolving set of relationships, combined with a constant reciprocal interaction with the verbal community, requires that humans engage in hundreds of thousands of language and thought transactions daily, much of them beneath the level of conscious awareness. The result is that humans become so dependent on these symbolic processes that they cease to recognize them for what they are: arbitrarily derived relations between verbal stimuli. When this occurs, the dominance of language and thought can become so excessive that the organism ceases to adapt to the demands of the environment and, instead, is controlled by symbolic representations of the environment. In ACT, this is referred to as the hegemony of language.

A third key principle of RFT is that there are distinct functional properties of language and thought that explain not only the tremendous evolutionary advantage of human thought, but also its "dark side." The bidirectionality of human language enables humans to produce pain simply by remembering past pain or anticipating it in the future. For that reason, humans cannot regulate their psychological discomfort by escaping aversive situations, and instead begin to attempt to avoid or modify emotions. Thus, emotional avoidance is built into human language. Many unique forms of human behavior (e.g., humans are the only species known to commit suicide), seem to be a side effect of this process.

Relational behavior in turn enables rule-governed behavior: the generation of verbal formula to use in guiding human action. Unlike contingency governed actions, which are shaped systematically through direct trial and error (e.g., learning to ride a bicycle), rule-governed behaviors are developed through the verbal specification of contingencies, rather than through direct contact with them. This form of learning greatly expands the potential for learning important rules without having to make direct contact with the contingencies specified by those rules.

There are many different types of rule-governed classes that have clinical significance. Augmentation involves a rule that changes motivation, typically by relating some immediate situation with a verbally constructed set of future contingencies. For example, a young college student might be highly motivated to study by having images of getting a high-paying job several years hence (i.e., a motivative augmental). Getting an "A" on an important exam is reinforcing because of the augmenting effect of the future contingencies. The consequence is the persistence of studying behavior. Pliance is a more basic form of rule-governed behavior. "Plys" are rules that influence the person to behave in culturally sanctioned ways. Telling a crying child, "Be a good boy now and stop crying," is in effect saying to please the parents by stopping the act of crying. The child may stop crying, even though significant physical discomfort is present. Tracking is another common form of rule following that involves establishing a relationship between a rule and a set of nonarbitrary contingencies. A track might involve responding to a weather report that calls for record cold temperatures by securing a heavier coat, because past history has established a relationship between the

temperature outside and the type of clothing that produces warmth.

Because of the general utility of rules, a pervasive consequence for rule-governed behavior is sense making. It appears that humans are highly motivated to organize derived relations within an overarching framework that helps them "make sense" of these relationships. Independent of whether the relationships are factually correct, humans will create this type of conceptual order. In ACT, this is referred to as the "context of reason giving."

The ACT account of human pathology applies RFT principles to the larger rule-governed context of human behavior. First, RFT research has established that, for all their evolutionary utility, rule-governed behaviors are extremely resistant to the mitigating effects of direct experience. At the same time, these change-resistant features are hidden in the very structure of language and thought. A brief clinical example will highlight how basic RFT principles directly convert into clinical dysfunction:

> A woman who was sexually abused as a child reports persistent problems with extreme fearfulness when engaging in any kind of intimate behavior with a new boyfriend. She reports having the same kinds of experiences she remembers having when she was being sexually victimized (based on a "frame of coordination" between the two events). She reports being unable to trust her male friend even though there is evidence that he is different than her abusive father (a "transformation of functions" through that frame of coordination). She has been taught that the key to a fulfilling life is to form a positive intimate relationship, and has continued dating so as not to disappoint her mother (pliance). She is frustrated and angry with herself because she believes she is "defective" due to her childhood abuse history. The proof of this is healthy people are able to trust others in intimate relationships and she cannot (sense making). She has decided to stop dating because she believes her fear, mistrust, and disappointment will just get worse (augmentation). She wonders what she ever did to deserve being abused.

When a person encounters negative personal content such as in the sexual abuse vignette, culturally transmitted, verbally based responses are activated that determine both the outcome to be achieved and the processes needed to achieve it. Basic social programming suggests that "health" is measured by the absence of negative psychological content. In western culture, psychopathology and suffering are viewed as deviations from a natural state of psychological health. When confronted with negative personal experience, the socially sanctioned response is directly analogous to the process used to handle challenges in the external world. Specifically, first one identifies the cause of the problem, then employs strategies designed to eliminate the cause and, through the causal chain, the problem itself.

In contrast, the ACT approach holds that suffering and dysfunction arise from following these culturally sanctioned, but ineffective, rules for coping with distressing experiences. Paradoxically, the use of control and elimination strategies leads to greater suffering and an apparent loss of control of the symptoms to be eliminated. In ACT, this is termed the "rule of mental events." Specifically, the less one is willing to have a problematic private experience, the more one gets of it. There is significant research to support this core feature of human experience. For example, the thought suppression literature demonstrates that suppression and control strategies produce an upsurge in unwanted thoughts, and increased distress. Ironically, the strategies that have produced so much success for the human species in the external world are the cause of suffering and psychopathology when applied to events "between the ears." The reasonable, normal, sensible things people do to address suffering in fact generates suffering. In ACT, this is referrred to as the problem of unhealthy normality. Clients do not present for treatment because they are "broken," but because they are trapped in an unworkable culturally supported change agenda.

The cultural change agenda is supported by basic rule-governed behaviors that normally are not within the awareness of the client. In ACT, these core dysfunctional responses are described in the FEAR model of suffering:

Fusion: This is the tendency of humans to merge with the content of their private experiences, leading to the problem of literality. Literality means that the distinction has been lost between symbolic activity and the event that acts as its referent. In the example above, the woman is fusing historically learned physical and emotional symptoms (from the original trauma) with a conceptually similar current event (intimate relations with her boyfriend) and attributing her reactions to the current event. She has fused the emotional and physical properties of a distant event with a minimally similar current event. Hence, her verbal formulation suggests she has trust issues, whereas the core issue is her fusion with historically conditioned responses.

Evaluation: This is the tendency of humans to categorize and attribute qualities to referents, as though they are primary properties of the referents. An example of major evaluative themes in psychopathology and human suffering are "good-bad," "right-wrong," or "fair-unfair." Through the process of fusion, evaluations become inseparable from the events they are intended to qualify. In the example above, the woman states she is defective, as if defective was a primary property at the level of being. In truth, she is a woman who is having the self-evaluative thought called, "I am defective." She indicates that healthy people do not have these issues, a form of good-bad attribution. She wonders what she did to deserve the abuse, essentially imbuing life with some independent property of fairness.

Avoidance: Due to the impact of bidirectionality and rule-governed behavior, humans are inclined to avoid the situational or representational "triggers" for unpleasant consequences. Paradoxically, this type of experiential avoidance may stimulate feared or unwanted private experiences such as thoughts, feelings, memories, or bodily sensations. There is a significant empirical literature demonstrating the unhealthy effects of experiential avoidance, even in nonpsychiatric samples. It is implicated as a primary mechanism in numerous mental and chemical dependency disorders. Experiential avoidance is almost always predicated on the mistaken belief that, by avoiding participation in challenging life events, one will not have to experience the uncomfortable private experiences associated with participation. In the example above, the woman indicates she has decided to stop dating, rather than experience continued fear, mistrust, and relationship failure. Paradoxically, it is precisely by withdrawing from the "field of play" that her childhood trauma exerts its maximum negative influence over her life. Each day spent not participating lends credence to her notion that she is "defective," elevates her anticipatory fear response about accidentally meeting a soul mate, and deprives her of the opportunity to practice being intimate while being afraid.

Reason Giving: This is the tendency to present reasons that explain the cause of particular forms of private experience and/or behavior. In essence, the cultural context of language and thought teaches humans to give socially sanctioned reasons for behavior, especially behavior that is out of the perceived cultural norm. The most common reason-giving strategy is a two-step process: First, describe a set of historical influences that hypothetically explain a predisposing private experience such as a negative thought, feeling, memory, or physical sensation: Second, describe the predisposing private experience as a cause of the resulting behavior. In the example above, the woman presents her problem as being linked historically to her sexual abuse. The sexual abuse is used to explain her fear experiences during intimacy. She then justifies her lack of intimacy behavior by setting her private experiences in opposition to the desired outcome (i.e., one cannot be intimate while being afraid; fear causes the loss of intimacy). In the end, she has "justified" why intimacy is impossible and why she is entitled to cease efforts in that area.

Reason giving is a pervasive issue in human dysfunction for many reasons, but two are worth noting. First, not only do humans have extremely limited access to the vast multitude of influences that shape their learning history, but also there is no convincing evidence that private events "cause" behavior. The client's story is an arbitrary set of internally consistent, culturally shaped and sanctioned reasons that probably bears little resemblance to a complete historical analysis. Second, most forms of therapy are rooted in the verbal community and consequently a premium is placed on giving "good" reasons for being distressed and dysfunctional. Not only is the abused woman giving an inaccurate account of her learning history (focusing on the sexual abuse and ignoring a multitude of other learning factors), proposing an unlikely cause–effect relationship (her fear "causes" her to stop being intimate), but very likely will have this "story" tacitly endorsed by the therapist.

II. DESCRIPTION OF ACT TREATMENT

ACT seeks to accomplish several major results. The first is to help the client use direct experience, instead of rule following, to discover more effective responses to the challenges of being alive. The second is to discover that control and elimination strategies are the cause of suffering, not the cure for suffering. The third is to realize that acceptance and willingness are viable alternatives to struggle, control, and elimination. The fourth is to understand that acceptance is made possible by learning to detach from the rule-governing effects of language and thought. The fifth is to realize that the basic, unchanging self as consciousness is a place from which acceptance and committed action can occur. The final result is the understanding that

the road to vitality, purpose, and meaning is a journey consisting of choosing valued actions that are performed in the service of valued life ends. In ACT, the response to the life-limiting effects of FEAR is:

Accept
Choose
Take action

To many clients, the notion of turning around and embracing feared memories, hidden insecurities, perceived shortcomings, and negative personal history is frightening. The grip of self-limiting, rule-governed responses is so complete that clients cannot even see the system they are trapped in. Most clients know they are suffering, but are completely immersed in the private logic of their verbal conditioning. To attack this basic problem, ACT tries to engender a healthy skepticism about the role of language and thought in managing negative personal content. Ironically, therapy is an enterprise that occurs within the context of the verbal community. To attempt to undermine dysfunctional rule-governed behaviors through the use of verbal concepts such as "belief," "understanding," and "insight" is analogous to fighting a small fire with a can of gasoline. The ACT therapist must use words, images, metaphors, and experiential exercises in ways that undermine the client's confidence in the utility of language and thought. This must occur without ACT concepts being coopted into the client's system of "understanding." It is not unusual for an ACT therapist to say such things as, "If this makes sense, then that's not it" or "Don't believe a word I'm saying." By attacking the hegemony of language and thought through the nonliteral use of verbal concepts, the therapist is fighting fire with fire. The trick is to avoid being burned.

ACT can be separated into basic thematic components that often occur in a somewhat predictable sequence. However, it is important to understand that the relative prominence of different themes drives both the focus and strategies of therapy. It is frequently unnecessary to expose a client to all the stages of ACT. Some clients already have applied experience with acceptance and mindfulness strategies and may readily employ them when supplied with the proper framework. However, the same client might struggle mightily with committed, valued actions. With this type of client, more focus would be placed on values clarification, distinguishing life processes from life outcomes and so forth. For present purposes, we shall describe the core themes as "stages," because there is a sort of logic to how human suffering unfolds and, consequently, to how ACT might unfold.

A. First Thematic Stage: Creative Hopelessness

The goal of creative hopelessness is to help the client determine that the cultural change agenda is unworkable. The change agenda the client typically brings into therapy is to determine the cause of suffering and then to eliminate the cause, so the problem will dissipate. This typically converts into a cause and effect statement: "If I had more confidence in myself, I wouldn't be so anxious in new social situations." The goal of therapy is to provide me with more confidence, so my anxiety will go away. The notion of "workability" is central to ACT. Generally, clients have tried these commonsense change strategies repeatedly, even in the face of repeated disconfirming experience (the more you try to get confidence, the less confident you are). The client's rule following has all but eliminated the corrective effects of direct experience. The client tries the same strategies over and over again, even though direct experience suggests these strategies are doomed to fail. In ACT, the therapist is likely to ask, "Which are you going to believe here? Your mind or your experience?" Often, the clinical goal of this stage is simply to get the client to stop using strategies that are not workable. At the same time, the therapist is attempting to create a readiness to see the problem in a larger context.

B. Second Thematic Stage: Control Is the Problem, Not the Solution

In this thematic module, the client is exposed to the unworkable, paradoxical nature of control and elimination strategies and their natural offshoot, experiential avoidance. The client is exposed via metaphor, story, and experiential exercise to an essential feature of control and elimination strategies: The more one attempts to control undesirable content, the more undesirable content occurs. The rule of mental events, described earlier, is a cornerstone of this stage. In this stage, the negative effects of experiential avoidance are drawn out for the client. Generally, this involves determining what situations and/or experiences the client is avoiding in the service of controlling negative experiences. Next, the client will evaluate whether the avoidance is "paying off" in terms of promoting positive psychological events or reducing

negative ones. For example, the sexually abused woman might be asked to gauge whether avoiding dating has increased or decreased her sense of mistrust of men, increased or decreased her sense of relationship failure, and so on. Generally, the concept of "willingness" will be introduced, as an alternative to control, elimination, and avoidance. Willingness is the choice to have unpleasant private content at the level of awareness, but without evaluation or struggle. Often, clients will be asked to maintain a "willingness-suffering-workability" diary that lets them collect data on the relationship between levels of willingness, intensity of suffering, and perceived workability of their lives.

C. Third Thematic Stage: Defusing Cognitive Fusion

The Latin root of fusion means to "pour together." As discussed earlier, clients suffer when they pour together direct experience, representations of direct experience, thoughts, feelings, and so forth. They become lost in the maze of private events, such that it becomes difficult to separate what is real from what is being represented. The goal of this stage is to help the client detach from the literal meaning of private experiences and instead to see private experiences as separate from the basic self. This goal is critical because it is very difficult for clients to accept the most provocative, negative forms of private experience without the ability to see private experiences from the perspective of an observer. ACT employs a wide variety of "deliteralization" strategies in this stage. Deliteralization strategies generally seek to reveal the functional and/or representational properties of language, stripped of their concealment in the system of language. This allows the client to see thoughts as thoughts, feelings as feelings, reasons as reasons, evaluations as evaluations, and so forth. The result is that the client is able to defuse fusion. This might involve showing how easily behavior can be programmed through simple, obvious augmentation strategies. Alternatively, the client might be asked to produce multiple, different autobiographies or to say the word "milk" over and over again until the word "goes away" and a gutteral, chopping sound is all that is experienced. Throughout this stage, clients are exposed to the FEAR algorithim, as it is expressed through cognitive fusion. A host of metaphors, stories, and experiential exercises are typically employed to attack the literal attachment to cognition, emotion, memory, and other private representations of experience.

D. Fourth Thematic Stage: Self as Content, Self as Context

Acceptance is most likely to occur when there is an unassailable point from which to observe and make room for distressing private content. Similar to various forms of meditation, ACT seeks to help the client locate a sense of self that is larger than the experience of the products of brain behavior. This is done in the service of making willingness and various forms of acceptance less emotionally hazardous for the client. In ACT, there are three types of self: (1) Self as conceptualized content is analogous to a "self concept." It is the verbally evaluated summary statement of characteristics and attributes (i.e., I have always hated fighting). This form of self is quite rigid and is frequently a problem in therapy. Many clients will vigorously defend their "self concept," as if their life depended on it, even when the content of the self-concept is negative; (2) Self as ongoing process reflects the ability to report current mood states, thoughts, verbal analyses, and other products of direct experience. This form of self is necessary for psychological health. It is the vehicle for experiencing what is to be experienced in the "here and now." Avoidance of this form of self tends to produce the most basic and severe forms of psychopathology; (3) Self as context is the most basic sense of self that is possible. It is awareness and consciousness itself. There are no limits or boundaries to basic consciousness. It contains everything within it. It is immutable and, unlike other forms of self, never changes in character. It is the context in which all private events take on reference. Whatever their form or content, the client's struggles are acted out on the stage of consciousness itself. Yet, the integrity of consciousness is not at issue. If accessed, this space puts the client in a position where private experiences can be observed, without struggle. In ACT, this is referred to as the "you that you call you." Learning to make contact with this form of self is a skill that can be learned with practice. Consequently, ACT employs a wide diversity of mindfulness, awareness, and meditation exercises to develop this connection.

E. Fifth Thematic Stage: Willingness as a Chosen Action

Given the conditioned, rule-governed nature of private experience, little direct control can be exerted over the instantaneous reactions triggered by various stimulus events. In a previously described stage of ACT, willingness is used to describe a nonjudgmental

awareness of disturbing private content. However, there is a more basic form of willingness that is central to ACT. Willingness the action is the choice to enter into valued life activities, with certain knowledge that feared, private responses will be stimulated. These "monsters" generally are associated with the control, elimination, and avoidance behaviors that have previously trapped the client. This form of willingness is a qualitative act, driven by choice, rather than by persuasion or reason.

Choice is a core concept in ACT. It is an action taken with reasons, but not for reasons. It is a form of volunteerism, or voting with one's feet. This is the resting potential of any client; the ability to transcend learning, history, and logic and simply take an action that can produce vitality, meaning, and purpose. A variety of ACT exercises teach the client that willingness is both a chosen action and almost invariably involves making room for feared experiences. Choosing willingness is made more difficult when cognitive fusion is extreme and the sense of self as context is weak. Thus, willingness and choice generally become therapeutic foci when cognitive defusion and self-identification strategies have had some degree of success. In the sexual abuse example, the willingness question might be, "Would you be willing to continue dating in the service of your dreams of developing intimacy, knowing that you will have to make room for mistrust, conditioned fear responses, and self critical thoughts?"

F. Sixth Thematic Stage: Values, Goals, and Committed Action

Although ACT is heavily focused on dismantling ineffective rule-governed behaviors, this process is important only to the extent that it results in the client living a more vital, purposeful life. This can only be achieved through committed actions that are in pursuit of valued life outcomes. Often clients have lost sight of their dreams, because of the pernicious effects of control and avoidance behaviors. They have slipped into a haze where it is difficult to imagine a life much different from the one they are living. ACT attempts to "jump start" the process of committed action by helping the client define core life values, associated goals and develop specific committed actions. A basic ACT intervention is called, "What do you want your life to stand for?" This involves having the client imagine that he or she has died and is listening to eulogies from different significant others at the funeral. The question to be answered is, "What do you want to be remembered for, by those you leave behind?"

There are many nuances involved in developing committed action. One is helping the client differentiate between values as process rather than values as outcomes. To this end, ACT employs a variety of exercises that emphasize committed action as a journey, rather than a destination. A basic ACT principle is, "Goals are the process by which the process becomes the goal." Vitality is produced by seeking, rather than by reaching valued outcomes. Further, some values cannot be "achieved," only enacted on a continuing chosen basis. An example is the value of being a loving spouse. One never "reaches" love; there is always more love to experience. Similarly, a loving act often occurs when the feeling of love is missing. A second issue is that, in the name of seeking vitality, the client may have to jettison a well-practiced story that rationalizes why vitality and meaning are impossible to attain. Frequently, this story involves traumatic personal history and the need to remain dysfunctional to prove that a transgression occurred. The client may have to let go of the sense of trauma, shame, and blame in order to pursue vitality. In ACT, this form of forgiveness is construed to mean, "Giving oneself the grace that came before the transgression." A common ACT question is, "Who would be made right, or who would have to be let off the hook of blame, if you committed yourself to living a valued life?"

III. EMPIRICAL STUDIES OF ACT

ACT is a relative newcomer to the family of cognitive-behavioral treatments and therefore does not have a highly developed empirical literature at this point. However, the initial empirical results have been positive. There have been two controlled studies looking at the relative efficacy of ACT and cognitive therapy with depressed patients. In one controlled study, ACT produced significantly greater reductions in depression than cognitive therapy. A second controlled study with depressed patients showed the two treatments to have equal efficacy. However, analysis of depressive thinking process measures suggested that ACT had a significantly greater impact in reducing the believability of depressive thoughts. A recent study examined the effect of providing a psychoeducational intervention or ACT with a randomly assigned group of hospitalized patients with schizophrenia. The interventions were designed to target the disturbing effects of visual and auditory hallucinations. Results were intriguing: ACT

patients reported a greater self-reported frequency of hallucinations, but rated the hallucinations as less distressing than the psychoeducational intervention patients. In contrast, the patients undergoing psychoeducational treatment reported significantly fewer hallucinations, but significantly more distress associated with the hallucinations. ACT interventions have also been shown to have a significant effect with such diverse problems as chronic pain, occupational stress, and high medical utilization.

ACT is one of the few cognitive-behavioral treatments to undergo a field-based clinical effectiveness study. Strosahl and colleagues developed an ACT training package for a group of masters' level therapists in an outpatient HMO mental health system. Compared with a control group of therapists who did not receive the training, ACT therapists produced greater clinical benefits as reported by patients, had less referrals for psychiatric medicines, and were more likely to complete cases earlier with the mutual consent of the client. In an uncontrolled clinical effectiveness study, Strosahl found that chronically depressed personality-disordered patients treated in the ACT model reported significant reductions in depression and an increased rate of achieving important personal goals. There are several large clinical trials underway examining the effectiveness of ACT with severe drug addiction, tobacco cessation, and social phobia. Hopefully, results of these and future studies will help delineate the clinical effectiveness of ACT, as well as describe the process mechanisms that underpin the treatment.

IV. SUMMARY

Acceptance and commitment therapy is one of the new generation of cognitive and behavioral therapies that utilizes acceptance and mindfulness strategies, in addition to first-order change strategies. The emphasis on acceptance strategies may be attributed to the growing recognition that first-order change is not always possible, or even desirable. There are many aspects of human experience that cannot be directly altered through psychotherapy or any other type of change effort. As we have discussed, the human nervous system works by addition, not by subtraction. Rule-governed responses never really disappear, they are simply placed in a different relational frame under the dominance of new rule-governed behaviors. When ACT is successful, clients understand that there is no need to shun undesirable personal history, temperament, spontaneous emotions, thoughts, and so forth. These are unique and healthy human qualities. Indeed, the human organism is perfectly made to experience each of these qualities, and therein lies the potential for vitality, purpose, and meaning.

See Also the Following Articles

Avoidance Training ■ Language in Psychotherapy ■ Relational Psychoanalysis

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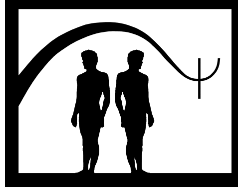

Addictions in Special Populations: Treatment

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GLOSSARY

cultural competence The belief that treatment providers should recognize and respect other cultural groups and be able to effectively work with them in a clinical setting.

special populations People with special treatment needs related to age, gender, ethnic background, or health status that are underserved by alcohol and drug treatment resources.

I. INTRODUCTION

The origin of the term "special population" can be attributed to several U.S. government agencies involved in health and human services in the mid-1970s. The term is reserved for groups whose need for substance abuse treatment programs has been underserved. The purpose was to identify subgroups in order to help with planning and evaluating the national treatment system for alcohol and drug problems. The goal was to provide funding for specialty programs, or to ensure that mainstream programs were structured to provide appropriate treatment services. Special population groups are most often defined in terms of age, race/ethnicity, gender, and health status. This article focuses on the treatment of addictive behavior in racial/ethnic minorities and women. These groups present unique treatment issues such as pregnancy and culture-specific beliefs and attitudes regarding substance use. In addition members of minority groups report higher rates of substance abuse problems than do whites, and the number of women entering treatment for substance abuse problems has increased in the past two decades.

II. RACIAL/ETHNIC MINORITIES

A. Description of Treatment

Ethnic and racial diversity is increasing in the United States, and according to the 1991–1993 National Household Survey on Drug Abuse members of various ethnic minorities report higher rates of substance use and related problems than do Whites. Although a need for treatment services exists, special populations often encounter barriers to obtaining treatment for alcohol and drug problems. The Office for Substance Abuse Prevention includes the following common barriers to treatment:

- *Cultural barriers:* Many programs lack staff who share the cultural background of those being treated. In addition, staff may lack sensitivity and/or training regarding the cultural beliefs and practices of their clientele. Language barriers also may exist.

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- *Funding:* Many members of minority groups lack insurance or personal funds to pay for treatment.
- *Availability:* Waiting lists are common at affordable programs.
- *Child care:* Often not available at treatment sites. Some people may fear losing custody of their children if they seek treatment for an alcohol or drug problem.

These factors make it less likely that minorities will enter mainstream treatment programs. Of those who do enter treatment, the outcome data are mixed with some studies showing minority patients to have treatment outcomes equal to those for Whites, and other studies showing that minority patients have poorer outcomes and are less likely to complete treatment.

The high rates of substance use problems among many ethnic and racial minorities, combined with the barriers encountered by these individuals in mainstream treatment programs, raise the issue of whether or not to develop culturally sensitive treatment programs. Typically, these programs employ staff from varied cultural backgrounds and/or provide training to staff members in cultural issues. Culturally sensitive treatment programs may improve access to treatment for some individuals, but there are few scientific studies that examine or support their ability to produce improved outcomes. Therefore, the benefits of such programs are not yet thoroughly understood. Moreover, there is often considerable heterogeneity within specific ethnic or racial groups. Major sources of such heterogeneity include

- *Subgroups within a major ethnic group:* For example, there are approximately 300 different American Indian tribes. Many of these have their own unique culture and have developed specific norms regarding substance use, help-seeking behavior, and healing. Similarly, Hispanics who are Cuban American, Central American, Puerto Rican, and Mexican American have different attitudes toward substance use and treatment for substance-related problems.
- *Personal characteristics:* Members of the same minority group vary on several dimensions that have implications for treatment outcome. Included here are socioeconomic status, education level, and employment status.
- *Acculturation:* Members of the same minority group may differ in terms of their acculturation or assimilation to the majority culture.

It is unlikely that a single treatment approach could be developed that would suffice in addressing such variability. Alternatively, it would not be realistic nor cost effective to develop separate programs for each distinct subgroup. This is not to say that the development and cross-cultural validation of such programs be discontinued. However, while these programs are being developed and evaluated, it seems reasonable to utilize existing approaches that have been demonstrated to have relative efficacy with other populations of substance abusers. Such treatment approaches include, but are not limited to, brief motivational interventions, cognitive-behavioral approaches, behavioral couples therapy, and the community reinforcement plus vouchers approach.

1. Brief Motivational Interventions

Brief interventions (e.g., motivational enhancement therapy, guided self-change) have been shown to be as effective as long-term inpatient treatment for alcohol problems. Core elements of these interventions include objective feedback regarding the nature and severity of the problem, acceptance of personal responsibility for change, providing a menu of change strategies, and an empathic therapist style.

2. Cognitive-Behavioral Approaches

A set of strategies including social skills training, behavioral self-control training, relapse prevention, and cognitive therapy. Core elements often include assertiveness training, coping with high-risk alcohol and drug use situations, managing urges and cravings, managing thoughts about drinking and drug use, problem-solving training, drink and drug refusal skills, and managing negative thinking and negative moods.

3. Behavioral Couples Therapy

This approach aims to improve communication and conflict resolution skills to help achieve and maintain abstinence. It assumes that family members can reward abstinence and that alcohol and drug abusers with healthier relationships have a lower risk of relapse. According to Timothy O'Farrell and William Fals-Stewart a core element of this approach is the daily sobriety contract in which the patient expresses his or her intention not to drink or use drugs on a given day, and the spouse provides support for efforts to remain abstinent.

4. Community Reinforcement Plus Vouchers Approach

This approach includes a number of skills-training components similar to those mentioned earlier. It also includes prompt reinforcement for drug abstinence by

using vouchers. The points accumulated can be spent for anything that contributes to furthering the patient's treatment goals. All purchases are made by the treatment staff.

Given the absence of research on the application of these and other treatment approaches for ethnic minorities, how should one proceed in tailoring existing treatment approaches to culturally diverse groups? The following steps have been proposed by clinicians and researchers alike. First, mainstream substance abuse treatment programs can ensure a degree of cultural sensitivity by hiring minority staff and/or providing training to increase the cultural responsiveness of staff members. Although there is limited evidence to support the overall treatment effectiveness of culturally sensitive therapists (CSTs), there is somewhat more evidence to support the role of CSTs in engaging and retaining minorities in treatment. Second, it would be important to identify the unique cultural aspects of a particular group, including those that may be affecting the person's recovery. For example, a client whose culture teaches her to be passive may feel it is wrong to express her feelings, even though such feelings may be a reason for continued substance use. Third, existing treatment approaches can be modified to include culturally relevant material. Comas-Diaz and Duncan included a cultural component in an assertiveness training program for low-income Puerto Rican women. In addition to standard assertiveness training, the women identified cultural factors prohibiting the development and expression of assertive behavior. They also identified potential conflicts that might arise as a result of their assertiveness and were taught strategies for managing these conflicts.

Although most writers call for culturally relevant treatment, there are few models that operationally define how clinicians and researchers should proceed. Clearly, there is a need for the systematic development and evaluation of such treatment programs. However, while waiting for such programs to be developed, ongoing efforts should be made to adapt existing, empirically supported treatments to specific cultural groups and to enhance the cultural competence of therapists in mainstream treatment programs.

B. Theoretical Bases

Theoretical models of substance abuse among ethnic minorities are lacking. Reasons for substance abuse are more common and are typically based on one or more key characteristics of a given cultural group. Despite the lack of theoretical development in this area, many accounts of substance abuse within a specific cultural group may be explained by existing models of addictive behavior. For example, a popular cognitive-behavioral model of addictive behavior is the stress-coping model. This model views substance use as a coping response to life stress that can function to reduce negative affect or increase positive affect. *Stress* refers to the problems or tensions that people encounter throughout life, and *coping* refers to the behavioral or cognitive responses that people use to manage stress. Although the nature of the stress may vary across cultures (e.g., PTSD among Southeast Asians), the underlying mechanism—that alcohol and drugs reduce stress—may generalize from culture to culture.

High rates of substance abuse in some ethnic minorities have been attributed to relatively greater experiences of stress. Major sources of stress include

- *Environmental stressors:* Several major stressors include substandard housing, overcrowding, and unsafe living conditions.
- *Social stressors:* Factors included here are poverty, greater exposure and access to drugs, discrimination, and unemployment.
- *Personal stressors:* A few examples include depression, helplessness, and low self-esteem.

In addition to increased stress, ethnic minorities may lack the personal and social resources necessary to support effective coping responses. In the absence of good coping skills individuals may use alcohol and other drugs to cope with stress. The view that substance abuse is a dysfunctional coping response to stress led to the development of psychosocial interventions focused on strengthening an individual's coping skills. With regard to substance abuse treatment for minorities, the objective for coping skills interventions is to incorporate culturally relevant content when addressing the stressors unique to specific cultural groups.

Acculturation theory has also been linked to substance abuse in ethnic minority groups. Briefly, this theory refers to the three phases of contact, conflict, and adaptation through which members of both minority and majority cultures move, before assimilation is achieved. The ability to align equally with values, attitudes, and behaviors of both the minority and majority culture is called "bicultural competence." With regard to substance use, a person with a monocultural orientation is likely to experience more stress than a person with a bicultural orientation, and therefore is more

likely to use alcohol and other drugs to cope with the stress. In this way, acculturation theory is similar to the stress and coping model described earlier.

C. Treatment Outcome

The focus in research has been on demographic and descriptive characteristics of substance abuse problems among various cultural groups. Well-conducted treatment outcome studies are lacking, so it is unknown whether outcomes would be improved if treatment programs were more sensitive to cultural issues. Controlled trials are needed in which the effectiveness of existing treatments for substance abuse problems are compared with treatments specifically designed, or modified, for a given cultural group. The main question to be addressed is whether culturally relevant treatment approaches increase accessibility, retention, and outcome in ethnic minority populations.

III. WOMEN

A. Description of Treatment

In 1991, The National Institute of Mental Health Epidemiologic Catchment Area Study (ECA) reported that substance abuse was the second most common psychiatric disorder among all female respondents. In addition, the number of women entering treatment for substance abuse problems has increased by approximately 10% since the late 1980s. Despite this increase, Yaffee and colleagues assert that the special needs of women remain unmet by the majority of mainstream treatment programs. In fact, it has been argued that mainstream treatment programs may be seen as a barrier to women seeking treatment for substance abuse problems. For example, the lack of on-site child care services may limit access to treatment for many women.

In the past two decades, funding has increased to aid the development of treatment programs specifically designed for substance-abusing women. These women-oriented treatment programs are characterized by an emphasis on understanding the importance of gender roles in society and how these roles may contribute to the development and maintenance of substance abuse problems in women. Important components of women-oriented treatment programs include the following: treatment for other problems (e.g., domestic violence, depression); child care services; parenting and family-oriented services; comprehensive medical services including nutrition, hygiene, prenatal and postpartum care; vocational rehabilitation; legal assistance; transportation assistance; and access to female treatment providers. A consistent difference between women-oriented programs and mixed-gender programs is the provision of services associated with pregnancy and parenting.

Common treatment approaches for women include cognitive-behavioral coping skills interventions, brief motivational interventions, family therapy, pharmacotherapy, and self-help groups. Within each of these approaches, women's issues are addressed by the inclusion of one or more of the women-oriented treatment components mentioned earlier.

1. Cognitive-Behavioral Approaches

Women with alcohol problems exhibit poorer skills for coping with stressors than do women without alcohol problems. Alcohol may be used as a primary coping behavior for these women. This treatment approach teaches skills for coping with high-risk alcohol and drug use situations and also provides other life management skills (e.g., problem-solving, communication, assertiveness, and other skills).

2. Brief Interventions

These interventions provide information, feedback, advice, and support and are known to be effective in addressing substance abuse problems. When the goal is drinking reduction, brief interventions for problem drinking have been shown to be more effective among women than among men.

3. Family Therapy

Strategic-structural family therapy and behavioral family therapy are the two most frequently used models of family therapy for the treatment of substance-dependent women. Family therapy is seen as beneficial because family members often play a significant role in the etiology and maintenance of problematic patterns of substance use among women. For example, a woman's drinking pattern is often influenced by her male partner's pattern of drinking. Therefore, it may be helpful to include both individuals in treatment.

4. Pharmacotherapy

Compared to men, women report more psychiatric problems and are more likely to drink to relieve negative affect. In this regard, medications may be used as adjuncts to psychosocial treatment for substance use and psychiatric disorders. Disulfiram (Antabuse) has a

long history of use as deterrent medication. When taken with alcohol it produces nausea, vomiting, dizziness, difficulty breathing, headache, flushing, and rapid heartbeat. Disulfiram is administered orally on a daily basis, and the client cannot drink for 4 to 7 days following discontinuation of the medication. This delay often provides the individual with time to reconsider the decision to begin drinking. Naltrexone (Revia) is an orally administered opioid antagonist that more recently has been found to be effective for the treatment of alcohol problems. It has been found to decrease craving for alcohol and to produce lower relapse rates when added to psychosocial treatment for alcoholism. Antidepressants and other psychotropic medications may be used to help treat a range of psychiatric symptoms that serve to maintain the substance use disorder.

5. Self-Help Groups

In addition to Alcoholics Anonymous, Women for Sobriety is a mutual-help organization designed to meet the specific needs of women. The program consists of 13 statements, primarily focused on improving self-worth and reducing shame and guilt often reported by its members. Self-help groups can be very useful treatment approaches because they provide an excellent opportunity for women to develop new social roles and relationships and to construct a non-substance-abusing support network.

The treatment approaches just summarized are only a few examples of the wide range of treatment options available. Because a large number of substance-abusing women have multiple problems, there is a need to provide broad and comprehensive services for women. For example, a cognitive-behavioral treatment program for women with alcohol problems may be combined with pharmacotherapy to address strong cravings for alcohol or symptoms of depression. In addition, existing treatment approaches may be further modified to address the individual needs of each female patient (e.g., prenatal care).

B. Theoretical Bases

Most of the work regarding substance abuse in women is largely atheoretical. However, social relationships have been reported to play a greater role in the psychological development of women as compared with men. In this regard, interventions that focus on the development of new relationships or that strengthen the woman's social support network are viewed as beneficial. However, most women-oriented treatment programs generally include a range of services and develop treatment plans in which specific services are matched to the needs of the individual patient.

C. Treatment Outcome

When examining outcome data from mixed-gender programs, studies to date have found few differences in treatment outcome for men and women. In contrast, research investigating the effectiveness of women-oriented treatment programs has produced mixed findings. Some studies demonstrate better outcomes for women in women-oriented programs compared with women treated in mainstream programs, and others report no differences. A study by Dahlgren and Willander compared women in a women-oriented program (n = 100) with female patients in a mainstream program (n = 100). At the 2-year follow-up, patients in the women-oriented treatment program had better outcomes both in terms of alcohol consumption and social adjustment as measured by employment status and family relationships.

With regard to the effectiveness of specific interventions for women, research has demonstrated that drinking reduction interventions appear to be beneficial for women who are less physically dependent on alcohol. Several studies have demonstrated that women problem drinkers were more successful than men in attaining moderate drinking. Cognitive-behavioral interventions, in which patients are matched on the basis of personality characteristics and level of motivation, have shown benefit with female substance abusers. Brief interventions that incorporate motivational interviewing strategies have also been effective in reducing alcohol consumption for problem-drinking women. Finally, some studies have indicated that women benefit from self-help groups, such as Alcoholics Anonymous and Women for Sobriety. It is thought that women do well in these groups because they become more involved in the social support network offered by this type of treatment.

Although it appears that women do benefit from treatment, well-conducted treatment outcome studies are lacking, so it is unknown whether outcomes would be improved if treatment programs were more sensitive to gender issues. Nevertheless, one advantage of women-only treatment programs may be their ability to attract women who would not otherwise have sought treatment from a mainstream program. For example, a study by Copeland and Hall found that clients enrolled in a women's treatment program were more likely to be lesbian, or have suffered childhood sexual abuse than women enrolled in other programs. Therefore, the

availability of women-oriented programs and services may contribute to reducing barriers to treatment for some women.

IV. SUMMARY

In 1990, an Institute of Medicine report suggested that caution must be exercised when defining a given person only in terms of his or her gender or racial/ethnic group membership; individuals within both of these special populations vary on other important dimensions that have implications for treatment entry and outcome (e.g., socioeconomic level, education). Moreover, the heterogeneity among persons with substance abuse problems suggests that it may be difficult to identify the key characteristic to use in determining a treatment referral. For example, an individual can be a member of more than one special population group (e.g., a married, black female with depression). In this case, how does the clinician decide which special program best meets the need of this client? At present, the answer is not clear. However, Copeland and Hall and others have reported that special programs may be more likely to attract individuals who would not otherwise seek treatment.

See Also the Following Articles

Controlled Drinking ■ Cultural Issues ■ Matching Patients to Alcoholism Treatment ■ Multicultural Therapy ■ Race and Human Diversity ■ Substance Dependence: Psychotherapy ■ Transcultural Psychotherapy

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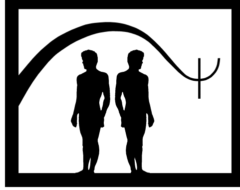

Adjunctive/Conjoint Therapies

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I. Adjunctive/Conjoint Therapy
II. Theoretical Basis
III. Historical Overview
IV. Summary
Further Reading

GLOSSARY

adjunctive therapy Two or more therapies used in an integrative fashion to treat an individual with mental illness.

conjoint therapy Therapy consisting of two distinct treatment models: (1) The treatment of two or more related individuals in the same setting, for example, couples treated in a group therapy or family therapy groups and (2) treatment used interchangeably with *adjunctive therapy.* In this chapter, the second meaning always applies.

integrative treatment Treatment that attempts to theoretically reconcile different therapeutic approaches into a single therapeutic approach, for example, psychodynamic and behavioral. May also be used interchangeably with *adjunctive therapy.*

psychopharmacotherapy The use of medication to treat mental illness. This therapy is performed primarily by a psychiatrist but may also be practiced by primary care physicians, physician assistants, and advanced nurse practitioners.

sociotherapy The consideration of the patient's entire social milieu as an agent of therapeutic treatment. This treatment is most often practiced in a hospital setting but may also be used in residential settings of all types, including group homes and specialized treatment facilities (e.g., substance abuse programs or other psychiatric rehabilitative settings).

split treatment The practices of separating treatment functions into different domains. Most often this treatment is used in long-term hospital settings to address the split between administrative and therapeutic functions.

I. ADJUNCTIVE/CONJOINT THERAPY

In today's psychological treatment setting, it is common to find two or more treatments being used together by different health care providers to treat the same patient. In fact, with today's emphasis on outcome and results rather than on the process orientation that dominated the treatment environment until the last several decades, it is more common than not to find adjunctive therapy as the dominant treatment intervention. Although the varieties of adjunctive therapeutic interventions are too numerous to catalog, they may be broken down into several common combinations. By far the most common form of this treatment today is the use of psychopharmacotherapy and individual psychotherapy. In addition, individual therapies are often used adjunctively with group therapy and/or family therapy.

As treatment has become more focused and refined, specialized programs are increasingly being used to treat individuals with similar disorders. Consequently, 12-step substance abuse groups are used with individual substance abuse counseling, and dialectical behavioral therapy (DBT) training groups are used adjunctively

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with individual DBT treatment and diagnostically focused groups. For example, anxiety disorder groups or obsessive-compulsive groups are used adjunctively with cognitive-behavioral therapy. Each type of adjunctive therapy may involve slightly or even radically different theoretical biases on the part of individual therapists. A substance abuse counselor running a 12-step group will be informed by a different theoretical orientation than a psychodynamic psychotherapist. The DBT therapist may operate from a different orientation than a psychopharmacotherapist. Yet, with adjunctive therapy, the often varying viewpoints of the treaters are not only made to work together but also often produce results that are superior to either treatment alone. Regardless of the type of adjunctive therapy, a common set of issues arise whenever conjoint treatment occurs.

Whenever more than one therapist is involved in the treatment of the same patient, the issues that always give structure to the treatment are the following: (1) *Treatment hierarchy:* Most typically this involves the identification of a primary therapist. (2) *Role definition:* The function of each therapist needs to be clearly defined, his or her primary domain delineated, and there must be a clear understanding of when each therapist would intervene and when a referral would be made to another therapist. (3) *Theoretical clarity:* Each therapist must understand the theoretical perspective of not only his or her own treatment modality but also that of all others involved in the treatment of the patient. It is also imperative for each therapist to understand areas of potential conflict between theoretical orientations and areas where the treatments should be complementary. (4) *Boundaries:* The boundaries or parameters for each therapy need to be defined clearly for the patient, but each therapist should also understand the boundary definitions of all the therapists involved in an adjunctive therapy. (5) *Goals:* Goals, or expected treatment outcome, should be explicitly defined, for each therapist may have a different contribution to make to the outcome. (6) *Communication:* Clear guidelines are needed for communication between therapists that define when to communicate and how much to communicate. These six areas provide the structure for any type of adjunctive therapy regardless of what combination is being used. Because psychopharmacotherapy individual psychotherapy is currently the most common type of adjunctive therapy, I will use it as a model to explicate each of these areas.

A. Treatment Hierarchy

The treatment hierarchy in adjunctive therapy is perhaps the most straightforward, and because it involves power, it is also the most difficult area for therapists to address. There is a twofold need to identify a primary or principal therapist in any adjunctive therapy: the need of the patient to know who is in charge of the treatment and coordinating it and the need of the therapists involved to know who is responsible for the coordination and integration of care.

Typically, the patient identifies the principal therapist as the one he or she first contacts when initiating treatment. If a patient sees an individual therapist for several sessions and the decision is made to seek a psychopharmacotherapy consultation, the patient will invariably regard the individual therapist as the principal therapist. The patient is likely to orient toward the individual therapist in seeking to identify who the psychopharmacotherapist is and later in processing recommendations made by the psychopharmacotherapist. The converse is just as often true when the psychopharmacotherapist is seen initially in consultation. When the need arises for adjunctive therapy with a referral to an individual therapist, the patient is likely to regard the psychopharmacotherapist as the principal therapist. This hierarchical structure implicitly involves power because the patient will regard the principal therapist as being the arbitrator for decisions regarding treatment and, in fact, as the person who is "in charge" of the treatment. For example, if the need arises for hospitalization, the patient will look to the principal therapist for a recommendation. In this case, if the individual therapist is a nonphysician and the psychopharmacotherapist is a physician, the patient may look to the individual therapist for guidance, even though the physician is the therapist with the power to hospitalize.

It is crucial that the treaters understand this hierarchy because these power issues relate directly to the therapist's professional identity. Each discipline that defines the therapist's professional identity comes with explicit and implicit skill sets that define expertise and power. The physician therapist may feel that he or she alone should have the power to make decisions regarding hospitalization or medication changes. The psychologist therapist treating an individual, who is in couple's treatment together with a social worker, may have difficulty with the social worker colleague recommending psychological testing. These discipline-specific sets of expertise and power need to be understood and should

be somewhat fluid to allow for successful adjunctive therapy. Although it is true that the physician alone has the power to prescribe a medication, the patient may not take the medication or comply with the physician's recommendation without the support and validation of the primary therapist, who might be a social worker. If the treatment hierarchy is understood, it reduces the potential for confusion on the patient's part and lessens threats to the professional identity of the therapists involved in the treatment.

The principal therapist can change during the course of a treatment but must make this change explicit and coordinate it. One of the therapists involved in the treatment may leave the area, necessitating a replacement, a therapist may have irreconcilable differences with a patient, or one of several therapeutic components of an adjunctive therapy may reach a termination point. The principal therapist would coordinate addressing and resolving all of these issues.

B. Role Definition

Adjunctive therapy involves two or more therapists intervening in different ways and often in different domains with the same patient. The roles of the therapists may vary widely, and their areas of intervention may overlap to varying degrees. The role of each therapist needs to be clearly defined. Well-delineated roles aid all the therapists involved and diminish the potential for patient noncompliance, acting out, or resistance to treatment. Using individual therapy/psychopharmacotherapy as a model adjunctive treatment illustrates both the difficulties and the need for role definition.

The individual therapist's role is focused on the psychological domain of the individual and is confined to effecting change in psychological processes. The psychopharmacotherapist's role is focused on the biological domain of the individual and is confined to using medications to effect physiological changes and lead to symptom relief, maintenance of a given state (e.g., euthymic mood), or relapse prevention. This oversimplification diminishes the role of both the treaters and the effectiveness of the adjunctive therapy. At the far border of role definition, it is clear that the individual therapist will not be making recommendations about specific medications and the psychopharmacotherapist will not be making recommendations about interventions that need to be made in individual therapy. At the near border of role definition, there may be great overlap. The patient will complain to the individual therapist about increasing dysphoria and may want to deal with it as an individual therapy issue. On another occasion, the patient will seek the psychopharmacotherapist's help with a medication that aids in improving his or her relationship with female co-workers. In these instances, the therapist must be able to recognize the limits of his or her role and be comfortable directing the patient to the other therapist. Between the two borders of the roles there is the need for each therapist to move in and out of the other's domain. Although psychopharmacotherapy may seem to be easily confined to the biological realm, in practice this is rarely the case. Taking a medication can have powerful psychological meaning for the patient and will need to be discussed and dealt with by the individual therapist as well as by the psychopharmacotherapist. On the other hand, socially phobic patients whose symptoms are relieved by medication may have to redefine themselves and examine how the change in a set of behaviors necessitated by the symptom that is now gone will affect their personal identity. Clearly, this is the role of the individual therapist.

Some issues clearly involve both roles and need to be addressed by both therapists. Insomnia is an example. In a patient with a mood disorder, insomnia might be an early warning that medications need to be changed or adjusted or that a relapse is beginning. Insomnia may also mean that the patient is having difficulty managing external stressors and needs psychological help in improving coping skills. It should be apparent that these are not mutually exclusive phenomena and could occur simultaneously, requiring interventions by both therapists. In fact, either therapist could perform an intervention such as instructing the patient about sleep hygiene. This also highlights the need for communication among therapists, which will be addressed in a later section.

Role definition also must address practical administrative issues, or else confusion and conflict may arise. Each therapist needs to know what the expectation of the other therapist is during the course of treatment. Coverage issues also need to be clarified. Who fills in for therapists' absences needs to be understood. In an adjunctive therapy it is often tempting for each therapist to cover for the other during vacations. This approach can blur roles, causing confusion and leading to conflict. If the psychopharmacotherapist covers for the individual therapist and an emotional crisis occurs, for example, he or she may need to temporarily take over the role of the therapist. Later, it may be difficult for

the psychopharmacotherapist to revert to his role, and it may prone confusing to the patient. Similarly, it must be clear whether the individual therapist is expected to monitor side effects and/or report them. This will directly affect the frequency of visits to both therapists. It is obvious that gross side effects will be reported, but obviously it is not the role of the individual therapist to perform screening tests examining for side effects. Depending on the nature of the individual therapy it may have more or less of an impact on the therapist's role.

C. Theoretical Clarity

Adjunctive therapy often involves the collaboration of therapists with different theoretical orientations. For the most part, these theoretical orientations are not inherently conflictual, although they may vary in emphasis. A behavioral therapy that focuses on changing observable patterns of behavior or reported cognitive patterns does not conflict with a dynamically oriented couples therapy that views behavior as arising out of early family patterns and roles. If, simultaneously, a psychopharmacotherapist approaches the behavior as a manifestation of an underlying biological diathesis and prescribes medication, the approaches are not contradictory but do have enormous potential for confusion and conflict. It is imperative that each therapist involved in adjunctive therapy understand not only his or her own theoretical orientation but also the orientation of all other therapists involved in the treatment. No therapist can be hidebound by his or her approach and must be respectful and open to other points of view.

The potential to regard one's own approach as superior and the other therapies as merely supportive must be guarded against, for it inevitably sabotages the treatment. For example, if an individual therapist believes that medication may relieve symptoms and reduce the patient's need and motivation for individual therapy, he or she might discourage the patient from taking medication or convey to the patient that using medication is a crutch and interferes with the "real" treatment.

At times, differences in theoretical perspectives may lead to different treatment interventions for the identical clinical situation. While understanding each therapist's treatment boundaries may reduce the potential for misunderstanding, appreciating each theoretical perspective can prevent therapist conflicts. For example, an individual therapist with a dialectical behavioral therapy (DBT) orientation and a physician prescribing medication following a medical model may approach a patient threatening suicide very differently. The DBT therapist may already have had an agreement with the patient that the patient go to an emergency room and only contact the therapist when all danger had passed. The psychopharmacotherapist may feel the need to take an active role in the patient's hospitalization and continue to treat the patient in a hospital setting. Only with an appreciation of the DBT therapist's orientation and of what he or she is attempting to achieve with the patient can the psychopharmacotherapist intervene, support the DBT therapist's position, and encourage the patient to return to the therapist when the danger of suicide has passed.

Before entering into an adjunctive therapy, each therapist should learn the theoretical orientation of the other therapist, understand areas of potential conflict, and be certain that they can all work compatibly together without feeling devalued or devaluing. If this is not possible, it is best to avoid adjunctive therapy collaboration.

D. Boundaries

Each therapist in an adjunctive therapy has his or her own boundaries that define the treatment parameters within which the therapist operates. This includes a definition of the therapist–patient relationship and an understanding of what the patient should expect from the therapist and what the therapist should expect from the patient. These expectations include fees, payment schedules, cancellation policies, frequency of sessions, availability out of session, length of treatment, treatment of emergencies, issues of confidentiality, and many therapy-specific requirements. How each therapist delineates the boundaries of therapy affects all the therapists involved in an adjunctive therapy. For example, the individual therapist and the psychopharmacotherapist must know that their patients will be thrown out of the substance abuse group they are attending if they test positive twice for drugs or if they fail to produce urine for testing twice. Without this knowledge of the group therapist's boundaries, they could not plan their treatment effectively. With knowledge of each other's boundaries, they can plan in advance for this situation and agree that such an event would lead to transfer to a rehabilitation facility. An individual therapist may tell the patient that he or she is unavailable for calls on weekends. The psychopharmacotherapist needs to know this limit and be prepared to respond if the patient chooses to call him instead.

One important aspect of therapist boundaries that overlaps with a following item, communication, is content boundaries. It must be clear to all the therapists involved in an adjunctive therapy and to the patient what information will and will not be shared among all therapists. Without this clarity, the patient will be anxious about confidentiality, and the therapists will be uncertain about what information they can share. Therapists need to be clear with each other about what information they need in order to practice comfortably. Without this knowledge, a treater may agree with a patient's request not to share information that other treaters feel they need to know in order to effectively treat the patient. Clearly, effective treatment planning cannot occur without each therapist involved in an adjunctive therapy understanding the boundaries of all the therapists and without a consideration of potential conflicts related to these boundaries.

E. Goals

The goals or expected outcome for adjunctive treatment need to be explicitly defined for both the patient and the therapists. Inherent in adjunctive therapy is a variation in goals and expected outcome for the different treatments involved. Not only will there be variation in goals for each therapy but the duration of treatment may vary widely in both length and in predictability of length. Group therapies may be rigid in length, particularly when the focus is psychoeducational, or more open-ended, with goals set differently for each individual patient. Psychopharmacotherapy may have a clear goal of symptom relief but can also involve more open-end goals—for example, prophylactic treatment or maintenance treatment with a need for indefinite followup. In addition, the goals of therapies are often fluid and change over the course of a treatment. Illness can evolve over time, requiring a change in goals. For example, a patient in treatment for alcoholism may after a period of abstinence—clearly a successful goal of treatment for substance abuse—manifest symptoms of an underlying mood disorder, requiring a different therapy and a change in treatment goals. Consequently, the goals of therapy need to be clearly understood, and communication among therapists is necessary to help them avoid conflict in goals, agree when goals are met, and change goals depending on the condition of the patient.

Outcomes can affect the other parameters of adjunctive therapy as well. A common occurrence is the successful termination of one therapy because the goals have been met. Any of the individual therapies that comprise an adjunctive treatment may meet its goals first. This results in a termination of the therapy and a change in other parameters of the treatment. Termination of one component of the therapy, whether it is due to a successful outcome or a poor outcome, always necessitates a review of the other parameters. This is best carried out if the final parameter, communication, is working well.

F. Communication

The sine qua non for effective adjunctive therapy is communication. The therapists must agree on what to communicate, when to communicate, and how to communicate. In an adjunctive therapy, the patient has a therapist–patient relationship with each of the treaters and must give permission for communication. The therapists must agree on what can and cannot be communicated and convey this agreement to the patient. Without this clarity, one or more therapists may be working with a handicap. For example, a patient conveys to an individual therapist that she had several hospitalizations for psychosis as a young adult. The patient may express concern that the psychopharmacotherapist not be told because she is afraid the psychopharmacotherapist will hospitalize her. This historical information is crucial to making a correct diagnosis and in choosing the right medication. Without this information the psychopharmacotherapist is handicapped in his or her decision-making process. Consequently, in most adjunctive therapies the patient is told that no therapist will keep confidential information that is deemed crucial for the decision making of the other therapists. Without such a stipulation, the lack of communication can provide an avenue for acting out and resistance.

The therapists must also agree on how often to communicate and how to communicate. How often is usually driven by the frequency of the therapies, the time of expected change, and the clinical status of the patient. How to communicate depends on the situation and means available to the therapists. If the adjunctive therapy has all the therapists working in the same setting sharing a common chart, written communication may suffice. More commonly, therapists are working in disparate settings and unaffiliated programs, so communication occurs by a regularly scheduled integrated treatment meeting initiated by the principal therapist. Because such meetings can be resource intensive, they are often scheduled infrequently. Communication occurs

between meetings by phone conferences, faxing office notes, or more recently by e-mail.

The areas defining adjunctive therapy, treatment hierarchy, role definition, theoretical clarity, and boundaries are often fluid, with large areas of overlap. They are commonly in flux throughout the course of a treatment and require active communication as a glue to hold the treatment together and focused on common goals.

II. THEORETICAL BASIS

The reasons that individuals seek psychological help involve many domains—social, psychological, and biological, reflecting the complexity of human experience. With the growth of empirical evidence over the last half century, a consensus has built that confining a theory of mental illness to a single domain (often the biologic) is reductionistic and ultimately limiting to understanding the illness and likewise its treatment. When mental illness occurs, it affects all three domains of human activity to varying degrees. Consequently, treatment interventions are often made across these domains using a variety of therapies.

Starting with DSM-III, American psychiatry made a paradigmatic shift defining illness as occurring across biopsychosocial domains defined by multiaxial diagnoses. It is noteworthy that the model for this diagnostic structure was adapted from the New York Heart Association criteria for classifying heart disease. Explicit in this diagnostic approach is an acknowledgment that illnesses span these domains and that treatment interventions need to be planned across all three domains.

Although research has shown a variety of treatments, including individual treatments (e.g., cognitive behavioral therapy, interpersonal therapy, and dialectical behavior therapy); group therapies, and psychopharmacotherapy, to be effective treatment for psychiatric illness, no single treatment addresses dysfunction in all three domains of human experience. This fact is not confined to psychiatric illness but rather mimics what has been known about other disorders as well—that illness, regardless of it nature, involves biopsychosocial functioning to varying degrees. This has been well-illustrated in oncology by David Spiegel who in 1989 showed that women receiving chemotherapy for breast cancer had better survival rates if they received a time-limited structured group psychotherapy than women treated with chemotherapy alone.

The outcome of this research for psychological treatment has been to reinforce the need of the therapist to at least assess all three domains of function and, when indicated, to plan treatment interventions across all domains. Because of the training, orientation, and experience of a variety of treaters, it has become increasingly common to need the involvement of more than one therapist in treating an individual. This leads directly to the demand for adjunctive therapy.

III. HISTORICAL OVERVIEW

The use of adjunctive therapy had its earliest formal use in the United States during the late nineteenth century with the development of moral therapy. Prior to that time, ill individuals were treated with primarily physical interventions ranging from herbal treatments, bloodletting, isolation, wet packs, rest cures, and, for severely ill, agitated patients, imprisonment and even physical torture. Moral therapy was primarily a social intervention in which individuals were treated on large farm-like hospitals and required to participate in the work of the farm. The basic tenet of moral therapy was that if individuals who are profoundly ill are treated with respect and dignity and are required to participate in normal social activities rather than be imprisoned and punished, they will once again acquire the social attributes of normal members of society. The large mental institutions in the United States constructed in the late nineteenth century were largely working farms. While this earliest example of sociotherapy was often effective and Charles Dickens described it in glowing terms during his visit to America, it was often not enough. Physical therapies such as isolation, restraints, and wet packs were also used frequently to control disruptive behavior. Consequently, combinations of both physiologic and social therapies were in wide use beginning in the last quarter of the nineteenth century.

The beginning of the twentieth century saw the growth of psychological treatment led by Freud and his followers. Psychoanalysis focused on the psychological domain of the individual and on how it attributed to both illness and health. The overriding emphasis was on psychoanalysis as a general theory that both explained and could treat all mental illnesses. Psychoanalysis as a monotherapy largely dominated treatment for the first half of the century. Although gravely ill individuals at times received adjunctive therapy, usually, physical treatments such as wet packs, electroconvolsive therapy, and limited pharmacotherapy, confined largely to sedatives,

these treatments were viewed as more enabling the patient to take part in psychoanalyis as an individual treatment rather than adjunctive therapy per se.

The growth of adjunctive therapies began after World War II in terms of widespread use, theoretical interest, and empirical studies. With psychoanalysis as the preeminent treatment, the emphasis was on intrapsychic phenomena and intensive individual treatment. The effect of the war was to burden the health care system, producing more traumatized individuals than could possibly be seen in intensive and lengthy psychotherapy. Group psychotherapy and, in particular, the empirical and theoretical work of Wilfred Bion grew directly out of the need to help many psychologically traumatized individuals with limited resources. Frequently, less intensive individual psychotherapy was used in conjunction with group psychotherapy, forcing early theorists to conceptualize how these treatments worked together in complementary ways and, equally importantly, how the therapists collaborated.

Even as psychoanalysis grew as the preeminent theory and, consequently, the treatment modality, it became obvious that psychoanalytic treatment alone was often insufficient to treat ill individuals, particularly those requiring hospitalization. As the emphasis of hospitals shifted from social treatment and biological therapy to psychoanalytic treatment of the individual, the use of adjunctive therapies and the theoretical understanding of the relationship of these many different treatments grew. Talcott Parsons, Marshall Edelson, Otto Kernberg, and others addressed the issues of sociotherapy—that is, the use of the milieu to effect change and complement individual treatment, the roles of various therapists in treatment, the effective domains of varying treatments and how they complement and compete with each other, the need for a mechanism of communication between treaters, and a hierarchy of treaters.

The last quarter of the twentieth century produced an emphasis on expanding the empirical database, elucidating what therapies work and for what conditions. Led by the work of Aaron Beck, Mardi Horowitz, Myrna Weisman, Marsha Linnehan, and others, we have vastly increased our knowledge of what kind of psychotherapy works and under what conditions. Similarly, pharmacotherapy research has provided data about what medication is effective for what condition.

This increase in empirical information has highlighted the fact that no single treatment addresses the ill individual's entire treatment needs. A leading example has been the treatment of Major Depressive Disorder. Both Beck and Weisman have demonstrated that certain types of individual psychotherapy—in this case cognitive-behavioral therapy and interpersonal therapy—are effective treatments for this disorder. Pharmacotherapy research has shown that a variety of medications are effective in the treatment of severe and recurrent depression. Strikingly, both psychotherapy and pharmacotherapy when used together to treat depression have better outcomes than either used as monotherapy. These types of empirical studies have led to the increasing use of adjunctive therapy in the current treatment of the mentally ill.

IV. SUMMARY

Adjunctive therapy is the use of two or more therapies to treat the same individual with mental illness. This combination may be an individual therapy and group therapy, or couples therapy and individual therapy. Currently, the most common form of adjunctive therapy is the use of individual therapy with psychopharmacotherapy. The growth of empirical data on a variety of adjunctive therapies over the last quarter of a century and the acceptance of a biopsychosocial model of mental illness as the leading theoretical paradigm have made adjunctive therapy increasingly the common form of modern treatment of mental illness. Depending on the illness, a variety of adjunctive therapies are currently in use. These adjunctive therapies may be individual treatment and group treatment, family treatment and individual treatment, and psychopharmacotherapy and a variety of other therapies. While the combinations of treatment involved in adjunctive therapy are too numerous to exhaustively catalog identical elements give it structure. These elements are treatment hierarchy, role definition, theoretical clarity, boundary definition goals, and communication.

See Also the Following Articles

Anxiety Disorders ■ Cognitive Behavior Group Therapy ■ Individual Psychotherapy ■ Integrative Approaches to Psychotherapy ■ Matching Patients to Alcoholism Treatment ■ Psychopharmacology: Combined Treatment ■ Substance Dependence: Psychotherapy

Further Reading

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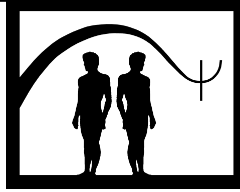

Adlerian Psychotherapy

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I. Description of Treatment
II. Theoretical Bases
III. Applications and Exclusions
IV. Empirical Studies
V. Case Illustration
VI. Summary
Further Reading

GLOSSARY

antithetical scheme of apperception The sharply divided way of interpreting people and situations with an "either/or," "black and white" restriction of qualities; no "grey area" is acknowledged.

compensation A tendency to make up for underdevelopment of physical or mental functioning through interest and training, usually within a relatively normal range of development. Overcompensation reflects a more powerful impulse to gain an extra margin of development, frequently beyond the normal range. This may take a useful direction toward exceptional achievement or a useless direction toward excessive perfectionism. Genius may result from extraordinary overcompensation. Undercompensation reflects a less active, even passive attitude toward development that usually places excessive expectations and demands on other people.

eidetic imagery Vivid, detailed visualizations of significant figures in a person's life used to yield projective impressions and stimulate emotional responses during the diagnostic phase of therapy. Later in therapy, these visualizations can be modified to promote therapeutic changes.

feeling of community (social interest) Translated from the German, *Gemeinschaftsgefühl,* as community feeling, social interest, social feeling, and social sense. The concept denotes a recognition and acceptance of the interconnectedness of all people, experienced on affective, cognitive, and behavioral levels. At the affective level, it is experienced as a deep feeling of belonging to the human race and empathy with fellow men and women. At the cognitive level, it is experienced as a recognition of interdependence with others, that is, that the welfare of any one individual ultimately depends on the welfare of everyone. At the behavioral level, these thoughts and feelings can then be translated into actions aimed at self-development as well as cooperative and helpful movements directed toward others. Thus, at its heart, the concept of feeling of community encompasses individuals' full development of their capacities, a process that is both personally fulfilling and results in people who have something worthwhile to contribute to one another.

feeling or sense of inferiority (primary and secondary) The primary feeling of inferiority is the original and normal feeling in the infant and child of smallness, weakness, and dependency. This usually acts as an incentive for development. However, a child may develop an exaggerated feeling of inferiority as a result of physiological difficulties (e.g., difficult temperament) or handicaps, inappropriate parenting (including abuse, neglect, pampering), or cultural or economic obstacles. The secondary inferiority feeling is the adult's feeling of insufficiency that results from having adopted an unrealistically high or impossible compensatory goal, often one of perfection. The degree of distress is proportional to the subjective, felt distance from that goal. In addition to this distress, the residue of the original, primary feeling of inferiority may still haunt an adult. An inferiority complex is an extremely deep feeling

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of inferiority that can lead to pessimistic resignation and an assumed inability to overcome difficulties.

fictional final goal An imagined, compensatory, self-ideal created to inspire permanent and total relief, in the future, from the primary inferiority feeling. Often referred to as simply the person's goal, it is usually unconscious until uncovered in psychotherapy.

missing developmental experience A belated therapeutic substitute for toxic, deficient, or mistaken early family, peer, or school experiences.

organ jargon An organ's eloquent expression of an individual's feelings, emotions, or attitude. Usually an ultrasensitive organ sends a symbolic message of the individual's distress about a subjectively unfavorable psychological situation.

private logic versus common sense Private logic is the reasoning invented by an individual to stimulate and justify a self-serving style of life. By contrast, common sense represents society's cumulative, consensual reasoning that recognizes the wisdom of mutual benefit.

psychological movement The thinking, feeling, and behavioral motions a person makes in response to a situation or task.

safeguarding tendencies Strategies used to avoid or excuse oneself from imagined failure. They can take the form of symptoms—such as anxiety, phobias, or depression—which can all be used as excuses for avoiding the tasks of life and transferring responsibility to others. They can also take the form of aggression or withdrawal. Aggressive safeguarding strategies include depreciation, accusations, or self-accusations and guilt, which are used as a means of elevating a fragile self-esteem and safeguarding an overblown, idealized image of oneself. Withdrawal takes various forms of physical, mental, and emotional distancing from seemingly threatening people and problems.

Socratic-therapeutic method An adaptation of the Socratic style of questioning specifically tailored to eliciting and clarifying information, unfolding insight, and promoting change in Classical Adlerian psychotherapy.

striving for significance The basic, common movement of every human being—from birth until death—of overcoming, expansion, growth, completion, and security. This may take a negative turn into a striving for superiority or power over other people. Unfortunately, many reference works mistakenly refer only to the negative "striving for power" as Adler's basic premise.

style of life A concept reflecting the organization of the personality, including the meaning individuals give to the world and to themselves, their fictional final goal, and the affective, cognitive, and behavioral strategies they employ to reach the goal. This style is also viewed in the context of the individual's approach to or avoidance of the three tasks of life: other people, work, love, and sex.

tendentious appreception The subjective bending of experience in the direction of the fictional final goal.

unity of the personality The position that all of the cognitive, affective, and behavioral facets of the individual are viewed as components of an integrated whole, moving in one psychological direction, without internal contradictions or conflicts.

I. DESCRIPTION OF TREATMENT

The primary indication of mental health in Adlerian psychotherapy is the person's feeling of community and connectedness with all of life. This sense of embeddedness provides the real key to the individual's genuine feeling of security and happiness. When adequately developed, it leads to a feeling of equality, an attitude of cooperative interdependency, and a desire to contribute. Thus, the central goal of psychotherapy is to strengthen this feeling of community.

The major hindrance to a feeling of equality and the development of the feeling of community is an exaggerated inferiority feeling for which the individual attempts to compensate by a fictional final goal of superiority over others. Thus, the therapeutic process is simultaneously focused on three aspects of change. One is the reduction of the painful, exaggerated inferiority feelings to a normal size that can be used to spur growth and development and a healthy striving for significance. A second is the dissolution of the patient's corrosive striving for superiority over others, emboided in a compensatory style of life. A third is the fostering of equality and feeling of community. Underlying this work is a firm belief in the creative power of the individual, to freely make choices and correct them, thus providing an encouraging perspective on responsibility and change.

Adlerian psychotherapy is a creative process in which the therapist invents a new therapy for each client. Six phases of the therapeutic process are as follows: (1) establishing the therapeutic relationship, (2) assessment, (3) encouragement and clarification, (4) interpretation, (5) redirection of the lifestyle, and (6) meta-therapy. These are briefly offered with the caveat that for any particular client, the actual therapeutic process may look quite different.

A. Phase I: Establishing the Therapeutic Relationship

Developing a cooperative working relationship is fundamental for any meaningful therapeutic progress. A warm, caring, empathic bond, established from the very beginning, opens the door for gradual, positive influence. Initially, the client may need to express a great deal of distress with little interruption. In response,

therapist offers genuine warmth, empathy, understanding, and empathy. An atmosphere of hope, reassurance, and encouragement enables the client to develop a feeling that things can be different.

The therapist also helps the client learn to participate in a cooperative relationship. The success of the therapy depends on how well the patient and therapist work together, each doing his or her part, which includes the client's thinking and action between visits.

The relationship with the therapist is a major avenue for significant change. The therapist provides belated parental influence to provide what was missing in the patient's early childhood or to ameliorate toxic early experiences. The therapist helps the patient experience a relationship based on respect, equality, and honesty—for some patients the first such relationship they have ever experienced. The therapist also provides a good model of cooperation and caring.

B. Phase II: Assessment

A through assessment is a critical step in Adlerian psychotherapy, for it will guide much of the therapeutic process. Although it is generally conducted during the first part of the treatment, information obtained throughout treatment may be used to refine and even correct initial impressions and interpretations. The objective of the assessment process is to conduct a comprehensive analysis of the patient's personality dynamics and the relationship among the—what Adler called the style of life. At a minimum, this analysis includes an identification of the patient's inferiority feelings, fictional goal, psychological movement, feeling of community, level and radius of activity, scheme of apperception, and attitude toward the three life tasks of occupation, love and sex, and other people.

A central assessment technique that Adler pioneered is the projective use of early memories. These memories—whether they are "true" or fictional—embody a person's core beliefs and feelings about self and the world and reflect the core personality dynamics. In addition to these early memories, the therapist uses the following: (1) a description of symptoms and difficulties, the circumstances under which they began, and the client's description of what he would do if not plagued with these symptoms; (2) current and past functioning in the domains of love relationships, family, friendships, school, and work; (3) family of origin constellation and dynamics, and extended family patterns, (4) health problems, medication, alcohol, and drug use, (5) previous therapy and attitude toward the therapist; (6) night and day dreams, and (7) information about the larger contexts in which the patient is embedded (e.g., ethnic, religious, class, gender, or racial contexts). Although much of this information can be collected in the early therapy sessions, it can also be obtained in writing both to save time and to draw on information from a different mode. When appropriate, intelligence, career, and psychological testing are included.

The therapist uses both cognitive and intuitive processes to integrate this diagnostic information into a unique, vivid, and consistent portrait. This is key to treatment planning and will eventually and gradually be shared with the client. The therapist must always keep in mind, however, that these conclusions are somewhat tentative and are subject to refinement and revision. As the therapist gains more information, it must all fit in with this portrait in a consistent way; if not, the portrait may need revisions to accommodate this new information.

C. Phase III: Encouragement and Clarification

An ongoing central thread throughout the entire therapeutic process is encouragement. The therapist cannot give clients courage; this feeling must develop through the gradual conquest of felt difficulties. The therapist can begin this process by acknowledging the courage the client has already shown, for example, in coming to therapy. Then the therapist and client together can explore small steps that, with a little more courage, the client might take. For many clients, this is equivalent to doing the "felt impossible." During and after these steps, new feelings about efforts and results are acknowledged and discussed.

In attempting to avoid failure, discouraged people often decrease their level and radius of activity. They can become quite passive, wait for others to act, and limit their radius of activity to what is safe or emotionally profitable. If this is true for a patient, the therapist and patient need to find ways to increase the patient's activity level—to increase initiative and persistence, completion of tasks, improvement of capacities, and enjoyment of progressively vigorous effort. If the activity radius is too narrow, a broadening of interests may provide stimulation, challenge, and more pleasure. In increasing activity level, however, a client may initially move in a problematic direction; for example, a timid person aggressively tells off his friend. But this is often a necessary first step that can be corrected after commending the attempt.

During this still-early phase of therapy, Socratic questioning is used to clarify the client's core beliefs and feelings about self, others, and life. Here is a brief example of Socratic questioning in a therapy session with a depressed man who is stuck in his symptoms.

> T: You may have a suggestion, you're kind of bright, you know.
>
> C: What makes you think I'm bright?
>
> T: By the way you talk, and the way you answer questions, and the way you do things in general. You're bright. You know how to avoid giving an answer, and how to aggravate people, and you know a lot of things. That's kind of bright. Dumb people don't do that.
>
> C: You think that's a sign of brightness, to aggravate people?
>
> T: Oh, sure! That's a way that you use it. I don't particularly think that people approve of the way you use it, but it *is* a sign of brightness. You could use the same brightness in a different way, you know?
>
> C: That's true. A lot of people are very annoyed at me.
>
> T: Uh huh. You like that?
>
> C: Sometimes I don't mind. It bothers me when my parents get annoyed at me because then I can't go visit them. And they won't let me visit every week.
>
> T: They won't let you visit every week. Now if I would be very annoying, would you like me to visit you every week?
>
> C: (weakly) I don't think so.
>
> C: No. Sounds as if your parents have a point.

The therapist builds on a strength of the client—his intelligence. Then she brings out the client's private logic, which could be expressed as, "I can annoy others with impunity." She then tests this private logic by extending it to others, asking whether this logic could also be applied to the therapist annoying the client. Using Socratic questioning to challenge the client's private logic helps him to move closer to common sense.

As the client and therapist talk during these early sessions, the therapist focuses on the psychological movement within the client's expressions and imagines the goal toward which the movements lead. For example, while the client may talk about a conflict with his wife, two possible movements he could actually be describing are away from his wife (withdrawal) or against his wife (aggression). By doing this, the therapist begins to identify the client's immediate and long-range hidden goals. He may be trying to protect himself from psychological harm, or he may wish to punish her for real or imagined hurts. Frequently, the immediate social result is the best clue to discovering a goal. Translating actions, thoughts, and feelings into movement and interpreting them in clear, simple, nontechnical language provides a useful mirror for the client. Buzzwords, jargon, and typologies do not help as much, frequently obscuring the uniqueness of the client's experience. The therapist uses everyday terminology and even tries to form insight in terms of images that are familiar to the client.

In the therapeutic dialogue, the therapist will also dialectically question the client's *antithetical scheme of apperception*. The client is likely to resist this process because the scheme of apperception provides certainty and supports the pursuit of the childlike, egocentric, final goal. The client's scheme of apperception depends on cognitive rigidity to generate very strong feelings. It locks the client into a dichotomized, superior/inferior way of seeing the world, evaluating experiences, and relating to others. Thus, to loosen and dissolve the antithetical scheme of apperception, the therapist must help the client see the real and subtly distinguishing qualities of people and experiences rather than dividing impressions into "either or," rigidly absolute categories.

All behavior is purposive and is aimed at moving toward the final goal. Client's emotions and symptoms will all serve the goal. The purpose may be hidden, and the client may not want to acknowledge responsibility for his intention. Both emotions and symptoms can be used to avoid responsibility for actions or as excuses for not doing what the client really does not want to do. For example, fear, confusion, and anger can all be used as excuses for not developing better relationships with others. The client needs to understand how he uses or abuses emotion. Does he create feelings that help him do the right thing? Does he use strong emotion as an excuse for indulgent and irresponsible action? What emotions does he avoid? Does one client, for example, aggressively ward off tender emotions, while another avoids anger with his "nice guy" approach? What is the impact of the client's emotions on other people? Does he want this result? Emotions are not the cause of behavior: rather, they serve one's intentions.

One of Adler's favorite diagnostic questions was, "If you did not have these symptoms, what would you do?" The answer frequently revealed what responsibility or challenge the person was trying to avoid. Symptoms, like crutches, will be discarded when they are no longer needed. Trying to treat the symptom is like blowing away smoke without extinguishing the fire that causes it.

D. Phase IV: Interpretation

After the client has made some movements toward change and she and the therapist have examined the meaning of her movements and immediate goals, they eventually engage in an interpretation of the client's style of life. Discussing and recognizing these core personality dynamics, such as the inferiority feeling or the goal, can be both painful and even embarrassing. The interpretation process requires diplomacy, exquisite timing, and sensitivity. Doing this interpretation too soon is discouraging. The style of life is interpreted gradually, as the client gains success and strength in a new direction, discovers capacities that she has neglected, and begins to correct what she has omitted in her development. Once she has moved sufficiently in a new direction, the results of her new and old attitudes are then compared.

This insight enables the client to take greater initiative in interpreting situations more on her own, sharing her own ideas with the therapist. Many clients are tempted to terminate at this point, feeling that they know enough, even though they have not actually applied their insight and changed their main direction in life. However, profound change occurs after the client and therapist have together identified and discussed the client's style of life. Insight and newly found courage are mobilized to approach old difficulties and neglected responsibilities. On the basis of this insight, then, the client can work toward lifestyle redirection, that is, changing the main direction of movement and approaching the three central tasks of life (community, work, and love).

E. Phase V: Style of Life Redirection

This phase represents the depth work that is done for the client to redirect the lifestyle This requires reducing and using inferiority feelings, redirecting the superiority striving, changing the fictional final goal, and increasing the feeling of community.

Clients may have exaggerated inferiority feelings that they want to eliminate totally, believing that if they realize their goal, these painful feelings will disappear. A client may use his feeling of inferiority to build a wall in front of him, thereby excusing himself from difficult effort and from risk to his fictional ideal. His depreciation of others, fictional superiority posturings, alcohol, or drugs may temporarily give him some relief from his semi-hidden and dreaded feeling of deficiency. The therapeutic aim is to help the client put an inferiority feeling behind him so that it pushes him ahead. That's the purpose of the normally sized inferiority feelings—to motivate development. If, however, the client's feeling of inferiority is quite exaggerated and seems to immobilize him or thrust him into wildly ambitious plans that are destined for failure, the therapist helps him change his thinking about his assumed great deficiency.

When the client's inferiority feelings are exaggerated, the superiority striving gets corrupted into striving for superiority over others rather than for development and growth. Thus, another therapeutic process involves redirecting this striving into a more positive direction—the conquest of real personal and social difficulties that benefit others rather than the superiority and power over other people.

A thread that runs through the therapy and that underlies efforts to reduce inferiority feelings is the way the therapist promotes the feeling of equality. The therapist's offer of equality may be a new experience that the client can gradually transfer to other people.

As the client begins to feel more able and less inferior, she may be able to begin changing her fictional final goal. The compensatory, fictional final goal, originally formed to relieve the primary feeling of inferiority, can gradually be modified to a more cooperative form, or dissolved and replaced by a different form of motivation. Abraham Maslow described this higher level of functioning as "growth motivation," in contrast to the lower level of "deficiency motivation." A client makes the choice to abandon his former direction and pursue the new one because it yields a more positive feeling of self and greater appreciation from others. As the goal changes, the rest of the style of life also changes as old feelings, beliefs, and behaviors are no longer required in the new system.

Parallel to the process of reducing inferiority feelings and changing the goal is the process of increasing the feeling of community. Initially, through his contact with the therapist and later through his application of social interest with other people, the client learns the meaning and value of contact, connectedness, belonging, and empathy. *Gemeinschaftsgefühl,* the original German term for community feeling, expresses a very profound philosophical perspective on life—a very deep feeling for the whole of humankind, an attitude of vigorous cooperation and social improvement, and a sense of the interconnectedness of all of life and nature.

Perhaps skeptical of the therapist's good-will at first, the client has felt and appreciated the genuine caring and encouragement. The conquering of obstacles has

generated courage, pride, and a better feeling of self that now lead to a greater cooperation and feeling of community with the therapist. This feeling can, and should, now be extended to connect more with other people, cooperate with them, and contribute significantly to their welfare. As the client's new feeling of community develops, she will become motivated to give her very best to her relationships and to her work.

Throughout the therapeutic process—both before and after the formal interpretation process—the therapist and client have been working on correcting the client's private logic and dissolving the antithetical scheme of apperception. In addition to these processes, it may be helpful to engage in therapeutic strategies that change the negative imprints from the past.

If the client's early childhood experience was very negative or deficient, it may be helpful to help the client counteract the haunting memories of abuse or neglect with creative, nurturing images. Some people respond to a vivid description and discussion of how they could have been parented. It gives them a picture of what might have happened, how it could have felt, and the outcomes that could have resulted. It may also serve as a model for what the client could do in his or her own parenting.

Other clients prefer the use of guided imagery to change the negative imprints of significant others that weigh heavily on them and often ignite chronic feelings of guilt, fear, and resentment. Still others prefer role-playing both to add missing experiences to their repertoire and to explore and practice new behavior in the safety of the therapist's office.

To provide missing experiences—for example, support and encouragement of a parent—a group setting is recommended. Group members, rather than the therapist, can play the roles of substitute parents or siblings. In this way, a client can engage in healing experiences, and those who participate with him can increase their own feeling of community by contributing to the growth of their peers.

The client and therapist can engage in role-playing for learning and practicing new behaviors. The therapist can model possible behaviors as well as coaching, encouraging, and giving realistic feedback about probable social consequences of what the client plans to do. This is somewhat equivalent to the function of children's play as they experiment with roles and situations in preparation for growing up.

A final issue of therapeutic change in the Classical Adlerian model is the person of the therapist. Clients constantly observe their therapists and may use them as positive or negative models. How the therapist behaves is critical, for it may interfere with the therapy process if a client sees that his therapist does not embody what she is trying to teach him. Thus, providing an honest example of cooperation and caring is fundamental. It is not enough for a therapist to understand and talk about Adler's ideas; they must also be lived. If a client sees any contradiction between the therapist's words, feelings, and actions, he has good reason to be skeptical.

F. Phase VI: Meta-Therapy

A few clients may reach the quest for full personal development. The challenge is to stimulate each client to become her best self in the service of others, to awaken her inner voice, and to fully use her creative powers. Müller described the last phase of therapy as a "philosophical discourse." For those clients who need and desire this experience, Classical Adlerian psychotherapy offers the psychological tools and philosophical depth to realize their quest.

Maslow labeled this latter aspect of therapy "meta-therapy." He suggested that the fullest development of human potential might require a more philosophical process, one that went beyond the relief of suffering and the correction of mistaken ideas and ways of living. As clients improve, the therapist can help them see that they can use new, more liberating and inspiring guides for their lives. These alternative guides are what Maslow called meta-motivation or higher values—for example, truth, beauty, justice. The values that individual clients choose will depend on their unique sensitivities and interests.

II. THEORETICAL BASES

Classical Adlerian psychotherapy is both similar to and distinctively unique to some contemporary schools of psychology and psychotherapy. In its focus on the importance of the relationship between the client and early childhood significant others, between the client and therapist, and between the client and significant others in his life, it is similar to self psychology and object relations psychotherapies. In its recognition of the embeddedness of the individual within a social context, it is similar to social psychology and family systems therapy. In its focus on the subjective meaning the client makes of the world and his relationship to it, it is similar to constructivist theories and cognitive-behavioral psychotherapy.

But several conceptual aspects of Classical Adlerian psychotherapy set it apart from all others. First and foremost is the conception of the creative power of the individual that is directed toward a goal, a fictional future reference point that pulls all movements in the same direction. An Adlerian psychotherapist never asks the question, "What makes the client do that?" The question is always, "What is the client trying to achieve by doing that?" Underlying this teleological approach is a belief in active, free will to creatively move toward a goal of one's own choosing. But once having adopted a fictional final goal, the goal functions unconsciously, out of full awareness. (This concept of fictional final goal is similar to that of a strange attractor in chaos theory, a magnetic end point that pulls on and sets limits for a process.)

This goal also organizes the psychological movements of the person so that there is a unity of the personality. One part of the personality never wars with another; all cooperate together in the service of the goal. What may look like conflict—for example, a client is ambivalent about whether to remain monogamous in his marriage or to have an affair—is really in service of a final goal—to avoid giving himself completely to one woman. Emotions are also the servants of this goal—for example, fear used to avoid, anger used to dominate, punish, or create distance. Dreams reflect this goal, as do daydreams, early recollections, and everyday behaviors. (This concept of unity, in which one central theme is reflected in every psychological expression, is similar to the concept in physics of the hologram, wherein each part of a whole is an enfolded image of that whole.)

Another central aspect of Classical Adlerian psychotherapy is the values on which it is based. Adler used to say that if humans didn't learn to cooperate, they would annihilate the world. Thus, therapy encompasses much more than simple relief from symptoms. The goal of therapy is to increase the client's feeling of community so that she can better cooperate with others and make a contribution to the whole of life. Over the course of his theoretical development, Adler moved from viewing humans as simply attempting to compensate for inferiority feelings (what Maslow called "deficiency motivation") to a focus on growth and development (what Maslow called "growth motivation"). Thus, in Classical Adlerian psychotherapy, the aim is to move towards optimal psychological, philosophical, and even spiritual health for the benefit of both self and others.

Unlike traditional psychoanalysis, Classical Adlerian psychotherapy does not utilize transference or countertransference as cornerstones of treatment. Transference, from an Adlerian perspective, is the tendency of the client to transfer inappropriate positive or negative feelings, originally experienced toward a parent, sibling, or other significant figure from childhood, toward the therapist. Adler considered the client's transference a device to justify and protect the pursuit of the hidden, fictional final goal. Consequently, the therapist diplomatically unveils the transfer of perception and feeling as a long-standing habit that needs to be corrected. In this perspective, transference is a resistance to the cooperation that is necessary between client and therapist. The client usually tries to draw the therapist into a familiar relationship where she can imagine an eventual secret victory.

Countertransference, the therapist's reactions to the client, are used by the Adlerian therapist as clues to the effect that the client has on others in her life. If, however, the therapist finds that the client triggers his own unfinished personal issues, this should prompt the therapist to deal with these in his study analysis with a senior training analyst.

III. APPLICATIONS AND EXCLUSIONS

The strategies of Classical Adlerian psychotherapy are similar in individual, couple, family, and child psychotherapy. The central dynamic is the encouragement of each individual to develop his or her capacities so as to reduce the inferiority feeling, to feel more equal with others, to become more cooperative, and to contribute to the improvement of all relationships for mutual benefit. In order to accomplish this, the style of life of each person usually needs to be redirected. Abbreviated adaptations of Classical Adlerian psychology have also been developed for use in brief therapy, career assessment and guidance, organizational consulting, and child guidance for parents and teachers.

IV. EMPIRICAL STUDIES

As of yet, there have been no empirical studies of Classical Adlerian psychotherapy.

V. CASE ILLUSTRATION

Arthur, a lonely, angry man in his mid-40s, was referred to therapy after completing an outpatient alco-

hol treatment program. He was very frustrated with his career as a criminal investigator, experienced very little intimacy with his wife, and had no friends. Although he conducted extremely thorough investigations that resulted in convictions, sentences rarely included jail time. His cold and isolated childhood left him very bitter: his memories were of an unhappy mother; a remote father; and a hell-raising older brother whom he hated, but who was the center of the parents' attention and frequently got away with illegal behavior. By contrast, he was a compliant youngest child who didn't make any trouble and was ignored. His sister, the oldest sibling, acted as a substitute caretaker for the distracted and critical mother.

The felt neglect of his father and the lack of love from his mother were at the roots of his inferiority feelings—a painful sense of being unloved and ignored. Discouraged and pessimistic about gaining affection and attention, he directed his compensatory lifestyle toward catching as many "bad guys" as he could and seeing that they were locked up. Since most were not, in his estimation, adequately punished, he was perpetually frustrated. He also viewed his parents and brother as unpunished criminals. His unconscious goal was to secure compensation and revenge for his miserable childhood. Revenge was not working out to his satisfaction, but at least he could look forward to a comfortable retirement, a symbol of what he felt entitled to.

Initially, his attitude toward the therapist was guarded and minimally expressive. What made him competent in surveillance work, observing others without being seen, was a handicap in making a personal relationship. However, two strengths could be built on. First, he had conquered both alcohol and nicotine dependencies. Second, his intense curiosity about hidden information and details provided a stimulus for examining his own style of life thoroughly through a discussion of the vivid clues embedded in his earliest childhood recollections. His most revealing recollection featured his brother spoiling a family fishing trip by making trouble and then getting away with it. His antithetical scheme of apperception sharply divided the good guys who obeyed the laws and the bad guys who broke the laws.

His private logic dictated that those who followed the rules were entitled to generous rewards and that the criminals deserved harsh punishment and confinement. Through his work, he dreamed of the ultimate compensation denied his as a child: punishing lots of bad people. Gradually, he realized how much his crusade had driven his life and what he had been missing, as a child and as an adult—warm, friendly contact with other people. He appreciated the therapist's understanding of his early family situation and empathy for his lonely childhood suffering. Socratically, he became aware of his narrow focus of interest on the people who made trouble and his exclusion of those who offered affection and caring.

Eventually, he softened enough to respond to healing, eidetic images of warmer, caring "substitute" parents. These images elicited his first experience of crying in therapy. After opening up emotionally and experiencing a gradual series of missing developmental experiences through guided and eidetic imagery, he overcame a socially corrosive depreciation tendency toward wrongdoers, and was willing to redirect his striving for significance into an interest in promoting understanding and fairness, instead of administering punitive justice. He concluded treatment with a more comfortable, closer relationship with his wife, and an optimistic perspective on making new friends.

VI. SUMMARY

In its most basic of descriptions, Adler conceived of the goal of therapy to help clients connect themselves with fellow men and women on an equal and cooperative footing. Therapist and client simultaneously focus on three therapeutic processis: (1) reducing painful, exaggerated inferiority feelings to a normal size that can be used to spur growth and development and a healthy striving for significance; (2) redirecting the lifestyle away from a useless and corrosive striving for superiority over others and fictional final goal and toward a more useful and cooperative direction; and (3) fostering equality and a feeling of community. Thus, not only does therapy benefit the individual, but it also contributes to the improvement of life for other people.

See Also the Following Articles

Countertransference ■ Dreams ■ History of Psychotherapy ■ Interpersonal Psychotherapy ■ Jungian Psychotherapy ■ Objective Assessment ■ Sullivan's Interpersonal Psychotherapy ■ Transference

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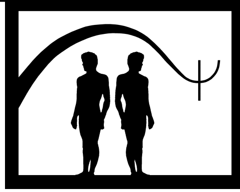

Alternatives to Psychotherapy

Janet L. Cummings

The Nicholas & Dorothy Cummings Foundation

I. Technical Alternatives to Psychotherapy
II. Pharmacologic (Herbal) Alternatives to Psychotherapy
III. Summary
Further Reading

GLOSSARY

5-hydroxytryptophan (See five-hydroxytryptophan).

agonist A drug that works by stimulating its receptor (as opposed to an antagonist, which works by blocking receptors).

anesthetics Drugs used for general anesthesia.

Aristolochia fangchi Also called guang fang ji, an herb marketed over-the-counter for weight loss in products labeled "Chinese herbs."

aristolochic acid A chemical found in the Chinese herb Aristolochia fangchi, which is sold over-the-counter in various weight-loss products.

autonomic nervous system The branch of the nervous system that regulates internal body processes requiring no conscious awareness.

barbiturates A class of drugs (including pentobarbital and phenobarbital) used to induce sleep, relieve anxiety, treat certain types of seizures, or for general anesthesia.

benzodiazepines A class of drugs (including Valium, Librium, and Xanax) that decrease anxiety and induce sleep by facilitating GABA neurotransmission.

carbidopa A prescription drug used to treat Parkinson's disease, available in pill form.

carcinogenicity Cancer-promoting properties.

cyclosporine Prescription immunosuppressant medication used to prevent organ rejection in transplant recipients, available in pills, oral solution, or IV injection.

digoxin A prescription cardiac medication that strengthens and regulates the heartbeat, available as pills, IM injection, or IV injection.

dopamine A neurotransmitter involved in motor control, increased levels of which are associated with psychosis.

EMDR (See eye movement desensitization and reprocessing).

ephedra Also known as ma huang; an herbal compound with amphetamine-like qualities sold over-the-counter in a number of weight-loss and energy-boosting products.

eye movement desensitization and reprocessing (EMDR) An alternative to psychotherapy that utilizes eye movements or other left-right stimulation to treat psychological problems.

five-hydroxytryptophan (5-hydroxytryptophan) Also called 5-HTP, an herbal supplement marketed for the treatment of depression, which is metabolized into serotonin in the body and may enhance serotonin neurotransmission.

fluoxetine (Prozac) A selective serotonin reuptake inhibitor.

formulary A list of drugs that are included as covered benefits by a particular insurance company, as opposed to nonformulary drugs that must be purchased out-of-pocket or with a higher co-payment.

GABA (See gamma-aminobutyric acid).

gamma-aminobutyric acid The major inhibitory neurotransmitter of the central nervous system.

Griffonia simplicofolia An African plant, the seeds of which are used to derive 5-hydroxytryptophan.

guang fang ji (See Aristolochia fangchi).

heliotrophe (See Valerianae radix).

hematocrit A measure of the proportion of red blood cells to the total blood volume.

hemoglobin The oxygen-carrying component of red blood cells.

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homocysteine A substance in the blood, high levels of which are associated with increased risk of heart disease.

Hypericum perforatum Also called St. John's wort; an herbal compound marketed over-the-counter for the treatment of depression, which likely affects the serotonin system.

immunosuppressant A drug used to prevent transplant rejection or to treat autoimmune disorders or severe allergies, which suppresses the functioning of the immune system.

inhibitory neurotransmitter A neurotransmitter, the presence of which decreases the probability of neuronal firing (as opposed to an excitatory neurotransmitter, the presence of which increases the probability of neuronal firing).

kava (See Piper methysticum).

kava kava (See Piper methysticum).

kavalactones Fatlike compounds with sedative qualities found in Piper methysticum (kava).

LeShan An alternative therapy used to heal medical and psychological problems when the treatment provider and patient are a distance apart.

ma huang (See ephedra).

MAO inhibitors (See monoamine oxidase inhibitors).

MAOIs (See monoamine oxidase inhibitors).

monoamine oxidase inhibitors (MAO inhibitors; MAOIs) A class of antidepressants (including Nardil, Marplan, Parnate, and Deprenyl) that work by blocking the enzyme that breaks down serotonin and norepinephrine.

noradrenaline (See norepinephrine).

norepinephrine Also called noradrenaline; a neurotransmitter that interacts with epinephrine to affect autonomic activity and mood.

perturbations Hypothesized structures throughout the body believed by proponents of thought field therapy to contain the energy that creates psychological disturbances.

Piper methysticum Also called kava or kava kava; an herbal compound marketed over-the-counter for the treatment of anxiety and insomnia.

platelets Cell-like particles in the blood, smaller than red or white blood cells, which clump together and promote clotting.

psychotropic medications Medications used to treat mental and emotional problems, including antidepressants, antipsychotics, and tranquilizers.

Reiki (Pronounced "ray-key") an ancient Buddhist practice of manual healing therapy, used to treat both medical conditions and psychological problems.

REM (rapid eye movement) sleep A stage of sleep characterized by rapid eye movements, behavioral activity, high electrical activity in the brain, increased rate and depth of breathing, and dreaming.

S-adenosylmethionine (SAMe) An herbal compound marketed over-the-counter for the treatment of depression and some medical conditions, including osteoarthritis and liver disease; may affect brain levels of serotonin, noradrenaline, and dopamine.

SAMe (See S-adenosylmethionine).

scleroderma A chronic disease characterized by blood vessel abnormalities, as well as degenerative changes and scarring of the skin, joints, and internal organs.

selective serotonin reuptake inhibitors (SSRIs) A class of antidepressants (including Prozac, Zoloft, and Paxil) that work by blocking the reuptake of the neurotransmitter serotonin.

serotonin A neurotransmitter, decreased levels of which are associated with depression.

serotonin syndrome A syndrome caused by high levels of serotonin and associated with agitation, restlessness, insomnia, tremor, nausea, vomiting, rapid heart rate, and seizures.

sertraline (Zoloft) A selective serotonin reuptake inhibitor.

SSRIs (See selective serotonin reuptake inhibitors).

St. John's wort (See Hypericum perforatum).

thought field therapy An alternative to psychotherapy in which the practitioner helps the client tap a series of points on the body in order to alter thoughts.

transducive points Specific places on the body that the client taps as part of thought field therapy.

tricyclic antidepressants A class of antidepressant drugs, including Elavil, Anafranil, Tofranil, and Pamelor, which work by blocking norepinephrine reuptake, with some blocking of serotonin reuptake.

tryptophan An amino acid from which serotonin and melatonin are manufactured in the body, which was sold as an over-the-counter sleep aide until an impurity in one bad batch caused severe medical problems and death in a number of users.

valerian (See Valerianae radix).

Valeriana officinalis (See Valerianae radix).

Valerianae radix Also called valerian, Valeriana officinalis, or heliotrophe; an herb with mild tranquilizing effects, sold over-the-counter to treat insomnia and mild anxiety.

warfarin (Coumadin) A prescription anticoagulant (blood thinner) medication, available in pills or IV injection.

Because of advances in modern medicine during the 20th century, homeopathic and naturopathic medicine had all but vanished in the United States. However, the past few decades have seen a revival of alternative medical treatments, with Americans making an estimated half-billion visits to alternative practitioners annually. Unfortunately, most alternative treatments, although promising, remain unvalidated by well-controlled scientific study at this time.

Many American consumers are now seeking alternative therapies for their psychological problems as well as for their medical problems. Alternative therapies for psychological problems include nutritional programs for the management of mental disorders, various techniques of bodywork and body alignment for clearer

thinking and peace of mind, aromatherapy, various types of touch therapy for emotional healing, magnet therapy, moving meditations such as tai chi and yoga, music therapy, and various forms of prayer. Such a vast array of alternatives to psychotherapy exists that it would be impossible to cover them all in detail in this article. Therefore, this article will focus on two types of alternative psychological treatments: technical and pharmacologic (herbal). Examples of each will be offered.

I. TECHNICAL ALTERNATIVES TO PSYCHOTHERAPY

A. Reiki

Reiki (pronounced "ray-key") is an ancient Buddhist practice of manual healing therapy that was rediscovered in Japan by Mikao Usui in the mid 1800s. It has become increasingly popular in the United States during the past few decades and is used for treating heart attacks, emphysema, hemorrhoids, prostate problems, varicose veins, hiccups, nosebleeds, and various mental and emotional problems. It is based on the belief that life is dependent on a universal, nonphysical energy. Because health requires a sustained and balanced flow of this energy throughout the body, disturbances in that flow result in physical, emotional, and mental illnesses. The Reiki practitioner attempts to correct life energy imbalances and blockages by gently resting his or her hands in specific ways on 12 standard sites throughout the body. The practitioner generally begins with the head and spends a few minutes at each site, with a complete session taking an hour or more. In some cases, the practitioner will expand the therapy beyond the standard 12 sites. Advanced practitioners believe themselves to be as effective even when physically absent from their patients by simply visualizing their hand movements with patients. These practitioners believe that they can send spiritual energy to their patients through a process similar to prayer, and thus are able to perform effective Reiki from a distance.

Some researchers have proposed that Reiki changes the blood's oxygen-carrying capability as shown by hemoglobin and hematocrit levels. However, the few studies conducted to date have yielded mixed results and some of those studies showing changes in hemoglobin or hematocrit levels actually show changes for the worse rather than for the better. One study by Wirth and Barrett in 1994 actually showed slower wound healing time in patients receiving a combination of Reiki, therapeutic touch, and LeShan (a distance healing technique) than in controls. Studies by Schlitz and Braud in 1985 and Thornton in 1966 examined the claim that Reiki induces relaxation and found that the autonomic activities of subjects receiving Reiki did not differ significantly from those of controls.

No adverse effects on patients have been reported with Reiki. However, no therapeutic benefits of Reiki have been demonstrated through well-controlled, scientific studies. The few studies on Reiki have generally been poorly designed, with such confounding variables as lighting, candles, and music. Although interest in Reiki is growing among alternative practitioners, there is no strong scientific evidence to date for its effectiveness, and Reiki remains unvalidated.

B. Thought Field Therapy (TFT)

Thought field therapy (TFT) is an alternative to psychotherapy used to treat depression, anxiety, phobias, addictions, anger, trauma, grief, and other emotional and mental conditions. It was developed by Roger Callahan, Ph.D., after his reported discovery of the existence of certain structures of active information (called perturbations) in the bioenergy thought field, which he believes cause psychological disorders. Through a long process of trial and error, Dr. Callahan developed TFT to diagnose and treat these perturbations in the energy field.

Proponents of TFT view psychological change as occurring via quantum leaps rather than by a step-by-step linear process. In order to treat psychological problems, the TFT practitioner is able to see and feel the reality of a perturbation. Once the diagnosis of a perturbation is made, the practitioner helps the client to tap a series of "transductive points" on the body in order to alter the structure of the thought field specific to the problem. Proponents of TFT believe the treatment to be so powerful that it need only be used once to result in significant change for a number of psychological problems.

Although the proponents of TFT claim that it has been proven to be more effective than psychotherapy, its effectiveness has not been demonstrated using well-controlled scientific studies. The evidence presented is generally anecdotal and lacks any comparison (control) groups. For example, Leonoff in 1996 reported a study in which he replicated a 1986 study by Dr. Callahan. Both studies used 68 subjects who called a radio program to receive on-the-air treatment by the researchers, and both studies claim a 97% success rate with a 75%

average improvement based on clients' reports of distress using a 10-point rating scale. However, neither study used a control group, and the comparison of the two studies by Leonoff in 1996 simply compares the use of TFT by practitioners in 1985 to the use of TFT by practitioners in 1996 without comparing TFT to any other treatment modality. Therefore, TFT remains unvalidated at this time.

C. Eye Movement Desensitization and Reprocessing (EMDR)

EMDR was first introduced in 1989 by Francine Shapiro, Ph.D., and has since been taught to thousands of clinicians and has received considerable media attention. It is used for the treatment of trauma and the various psychological symptoms that are believed to result from traumatic experiences. EMDR practitioners use an eight-phase protocol to help trauma victims reprocess distressing thoughts and memories, which includes using eye movements or other left-right stimulation:

- Phase I: Client history
- Phase II: Preparation (in which the theory is explained, expectations are set, and the client's fears are addressed)
- Phase III: Assessment (in which negative cognitions are identified, positive cognitions are developed, emotions are named, and body sensations are identified)
- Phase IV: Desensitization (in which eye movements are utilized to reduce the client's anxiety about a certain situation or event)
- Phase V: Installation (in which a positive cognition is enhanced and linked to the original target issue or event)
- Phase VI: Body scan (which focuses on any body tension produced by the original memory or the positive cognition that has been linked to it through the treatment)
- Phase VII: Closure (in which the client is returned to a positive frame of mind and is determined to be able to safely return home before being dismissed)
- Phase VIII: Reevaluation and use of the EMDR standard protocol (in which the clinician assesses how well the trauma has been resolved and determines whether or not the client needs any further processing)

Shapiro in 1995 theorized that EMDR utilizes the same brain processes as REM sleep, although she admits that current knowledge of neurology and neurobiology does not provide an explanation of exactly how EMDR works. Even though the precise impact of EMDR on the brain remains unknown, EMDR has received more rigorous, scientific study than the previously mentioned alternatives to psychotherapy. Shapiro and Forrest in 1997 cited a number of case reports and nonrandomized studies in order to demonstrate the efficacy of EMDR. In addition to these studies, the authors cite 12 randomized and controlled studies that serve to validate EMDR. Some of these studies have compared EMDR to other psychological treatment modalities, to no-treatment controls, or to delayed EMDR treatment, while other studies compare standard EMDR to variations of EMDR such as engendering eye movements by tracking a light bar rather than by tracking the clinician's finger or using forced eye fixation, hand taps, and hand waving instead of the standard eye movements.

These randomized and controlled studies indicate that EMDR is superior to other treatment modalities for the populations studied. However, some of the differences are small even though they are statistically significant. They also indicate that, in general, standard EMDR is as effective or more effective than the variations studied. Although this research seems promising, more study is needed before EMDR can be considered a validated treatment method. Shapiro and Forrest in 1997 reported studies that indicate that EMDR is at least as effective as other treatments, but do not state whether or not any studies conducted have indicated that EMDR is less effective than other treatment modalities for any conditions. Furthermore, some of the studies reported are flawed by confounding variables, such as the secondary gains of chronic inpatient veterans receiving compensation from the VA system. Some studies compare EMDR to treatment modalities unlikely to be effective for the condition being studied, such as biofeedback relaxation for veterans who have experienced chronic PTSD symptoms since the Vietnam War. The gains shown from EMDR as compared to no-treatment controls may be due to the EMDR itself or to the placebo effect, which is generally accepted as about 35% in magnitude. It is unknown whether the gains from EMDR are due to the eye movements themselves or to other aspects of the protocol that closely resemble traditional psychotherapy (such as replacing negative cognitions with positive ones). Therefore, EMDR has

some supporting evidence, but more research is needed.

II. PHARMACOLOGIC (HERBAL) ALTERNATIVES TO PSYCHOTHERAPY

Herbal remedies have become such a major factor in American health care in recent decades that the *Physician's Desk Reference* (PDR) has had a companion volume *(PDR for Herbal Medicines)* updated annually since 1998. In 1997, about 12% of Americans used herbal products, compared to about 3% in 1990. Most consumers who use herbal products do so for the management of chronic conditions, such as psychiatric disorders (particularly anxiety and depression).

Although the American public tends to equate "natural" and "herbal" with "safe," the efficacy and safety of these products have only recently been studied in controlled clinical trials. These recent studies indicate that not all herbal supplements are safe. For example, ephedra (also known as ma huang) is an herbal ingredient found in a number of weight-loss and energy-boosting products available without prescription. It has amphetamine-like qualities and can be dangerous, particularly for people with high blood pressure or heart conditions and is responsible for dozens of deaths. The amino acid tryptophan had been sold as an over-the-counter sleep aid until 1989 when the FDA banned its sale after at least 38 people died and numerous others were left with painful, crippling nerve damage, severe joint pain, and scarring of internal organs from an impurity in a bad batch of the supplement from one manufacturer. Recent evidence indicates that various combinations of herbs marketed as weight-loss products and labeled "Chinese herbs" can cause kidney failure and death. Most likely, aristolochic acid from the Chinese herb Aristolochia fangchi (also called guang fang ji) is a potent kidney toxin responsible for the reported kidney problems and deaths from kidney failure.

Since Congress passed the Dietary Supplement Health Education Act (DSHEA) in 1994, most herbal supplements have not been regulated by the FDA. Products labeled "dietary supplement" are exempt from FDA control, as long as they do not claim to cure any disease. Therefore, herbal products are not subjected to the same rigorous testing and standards as over-the-counter and prescription drugs. Because most herbal supplements are exempt from FDA control, many products sold do not contain the amount of active ingredient indicated on the label. Occasionally the products contain more of the active ingredient than indicated, while often the products contain substantially less of the active ingredient than the label indicates. For this reason, research done using standardized dosages of herbal remedies may not be a valid indication of the efficacy of the unstandardized herbs available to the American public.

Most of the American public is unaware that most herbal products have side effects and interaction effects with medications. Some of the side effects and interaction effects will be discussed with each example of herbal alternatives to psychotherapy.

A. St. John's Wort *(Hypericum perforatum)*

St. John's wort was used by the ancient Greeks and has been used in Germany for many years as a prescription drug. It has recently become one of the most common herbal products sold in the United States, with retail sales surpassing $140 million in 1998. Its effectiveness has been studied in Europe. Linde provided a meta-analysis of 23 randomized trials in Europe, 15 of which compared St. John's wort to placebo and 8 of which compared it to active treatments. These studies indicate no significant difference in efficacy between St. John's wort and tricyclic antidepressants for mild to moderate depression and that St. John's wort is more efficacious than placebo. However, these studies were generally short (about 6 weeks) in duration. Research comparing St. John's wort to selective serotonin reuptake inhibitors (SSRIs) is in its infancy. One recent trial compared St. John's wort to fluoxetine (Prozac) and showed similar improvements in both groups. A clinical trial sponsored by the National Institute of Mental Health (NIMH) is currently under way to compare St. John's wort to sertraline (Zoloft).

One study by Shelton and colleagues, which appeared in the April 18, 2001 issue of the *Journal of the American Medical Association (JAMA),* indicated that St. John's wort is no more effective than placebo for treating major depression. The study has gained significant media attention and has called into question previous studies indicating that St. John's wort is effective. However, the recent *JAMA* study looked at St. John's wort and major depression whereas the previous studies had looked at St. John's wort for the treatment of mild or

moderate depression. Taken as a whole, the body of research available to date indicates that St. John's wort may be useful for cases of mild to moderate depression, but that it is ineffective for the treatment of severe depression (major depression).

The mechanism of action of St. John's wort is uncertain. Early studies suggested it was similar to a monoamine oxidase (MAO) inhibitor in its action, but recent data indicate it is closer to an SSRI, except that it does not affect the serotonin system in the spinal cord and, therefore, does not produce the decrease in sexual drive experienced by at least one-third of SSRI users. Use of St. John's wort in conjunction with MAO inhibitors or SSRIs is contraindicated, as the combination increases SSRI-like side effects and could result in serotonin syndrome, a condition causing dizziness, confusion, anxiety, and headaches. The syndrome is potentially fatal.

Side effects of St. John's wort are similar to those of SSRIs and include gastrointestinal symptoms, dizziness, confusion, sedation, dry mouth, photosensitivity, and induction of hypomania according to Barrette, in 2000, and *PDR for Herbal Medicines* in 2000. A number of drug interactions may occur with St. John's wort. It can reduce blood levels of the HIV drugs (such as indinavir) by more than 50%, which may in turn lead to drug-resistant strains of the virus, noted the University of California, Berkeley, in 2000. It reduces the effects of blood thinners such as warfarin (Coumadin), the heart drug digoxin, some oral contraceptives, and the immunosuppressant drug cyclosporine (which helps prevent organ rejection in transplant recipients). It increases photosensitivity when used in conjunction with other photosensitizing drugs.

B. 5-HTP (5-Hydroxytryptophan)

5-HTP is an herbal supplement manufactured from the seeds of the African plant Griffonia simplicifolia. It is metabolized into serotonin and is thought to alleviate depression by enhancing serotonin neurotransmission. It is also used to treat fibromyalgia, insomnia, binge-eating, attention deficit disorder, and chronic headaches.

Studies conducted in the 1970s and early 1980s have shown 5-HTP to be more effective than placebo in treating depression. Several small studies have compared 5-HTP to standard antidepressant medications. However, these studies have some notable flaws (small sample sizes, short durations, no placebo group, poor definition of depression, and the inclusion of patients with bipolar depression).

The most common side effects of 5-HTP are nausea, vomiting, diarrhea, and anorexia. Euphoria, hypomania, restlessness, rapid speech, anxiety, insomnia, aggressiveness, and agitation have also been reported. It is possible that 5-HTP causes seizures in children with Down syndrome, and its safety for pregnant or nursing women and those with liver and kidney disease has not been established. People with kidney disease, peptic ulcers, or blood platelet disorders should not use 5-HTP.

There is some concern about contamination, even though the manufacture of 5-HTP is different from that of the standard tryptophan, which was banned in 1989. There have been a few reports of symptoms similar to those caused by contaminated tryptophan, and researchers have identified at least one contaminant in some batches of 5-HTP.

5-HTP interacts with MAO inhibitors, with an increase in risk of hypertension. 5-HTP should not be used in conjunction with tricyclic antidepressants or SSRIs due to the possibility of serotonin syndrome. 5-HTP also interacts with carbidopa (used to treat Parkinson's disease), and the combination can cause skin changes similar to those that occur with scleroderma.

C. SAMe (S-adenosylmethionine)

SAMe (pronounced "Sammy") was first discovered in Italy in 1953. It became commercially available in Europe in 1977, and was not available in the United States until 1999. SAMe is used to treat osteoarthritis and liver disease, as well as depression, as noted by Gaster, and by Tufts University, in 1999. SAMe's mechanism for dealing with depression is not understood, but some researchers speculate that it affects brain levels of the neurotransmitters serotonin, noradrenaline, and possibly dopamine.

More than 40 trials have been conducted to evaluate SAMe for the treatment of depression. However, only five trials have tested oral forms of the herb, whereas the remaining studies have tested injectable formulations. Only three of the five trials of oral SAMe were randomized controlled trials. The trials that have tested injectable SAMe have generally shown it to be effective in the treatment of depression, although it is not valid to assume that oral SAMe is effective since it is very poorly absorbed from the gastrointestinal tract. It is too early to tell whether SAMe will prove to be a safe and effective treatment for depression.

Stomach upset is the most common side effect reported with SAMe use. Enteric-coated products are less likely to cause nausea, and are also less likely to break down in the stomach before they reach the small intestine

where SAMe is absorbed. SAMe is contraindicated for individuals with bipolar disorder, as it can trigger manic episodes. Those with obsessive–compulsive or addictive tendencies should not take SAMe, as it may worsen their problems.

Safety concerns provide compelling reasons to avoid using SAMe pending further research. Because the research has been very short term, it is not known whether taking the herb long term could cause problems with toxicity or carcinogenicity. Because SAMe raises blood levels of homocysteine, it may also raise the risk of coronary disease. Until it is understood how SAMe acts on the central nervous system, it is best to avoid taking SAMe in conjunction with other antidepressants, according to Gaster in 1999.

Even though SAMe's effectiveness and safety remain unvalidated, it is considerably more expensive than other treatments for depression (16 times as costly as St. John's wort, 5 times as costly as most tricyclic antidepressants, and 3 times as costly as SSRIs). SAMe cannot be recommended at this time for the treatment of depression due to its high cost, uncertain absorption, uncertain safety, and potential for inducing mania.

D. Kava, also known as kava kava *(Piper methysticum)*

Kava is a shrublike plant from the pepper family that is native to the South Pacific. It has traditionally been made into beverages, but can also be purchased in pill form. Kava is marketed in the United States as an over-the-counter drug to treat anxiety and insomnia and to promote relaxation, with millions of dollars being spent annually on the herb. The effectiveness of kava has been researched in placebo-controlled studies conducted in the United States and Germany. Meta-analysis of these studies provides evidence that kava is more effective than placebo for mild to moderate anxiety, but it is not effective for panic disorder. To date, the effectiveness of kava as compared to other antianxiety medications is unknown. Mild gastrointestinal upset is the main side effect of kava, and therapeutic doses are generally well-tolerated. However, large doses or prolonged use can cause rashes (allergic skin reactions); yellow discoloration of skin, hair, and nails; weight loss; and abnormal reflexes.

Kava root contains kavalactones, fatlike compounds that act as sedatives, muscle relaxants, and pain relievers. It is recognized by the FDA as being intoxicating and having abuse potential. Kava most likely works on the neurotransmitter GABA (gamma-aminobutyric acid) as an agonist (much like benzodiazepines), but since it is only a partial agonist it may be somewhat less effective than benzodiazepines. Because GABA is an inhibitory neurotransmitter, stimulation of GABA receptors results in CNS depression, noted Cummings, in 2000.

Use of kava with other central nervous system depressants (such as alcohol, benzodiazepines, or barbiturates) is contraindicated, as the interaction can potentiate the sedative effect and possibly lead to coma. Use of kava with anesthetics is also contraindicated, as it may prolong the sedation time and its use is contraindicated with antipsychotic medications due to the potentiation of the sedative effects. In Parkinson's patients, it can cause tremors, muscle spasms, or other abnormal movements and may decrease the effectiveness of anti-Parkinson's medications.

E. Valerian, also known as Heliotrope *(Valerianae radix or Valeriana officinalis)*

Valerian is an herb with mild tranquilizing effects, sold over-the-counter and used to treat insomnia and mild anxiety. It was the 10th most popular herb in the United States in 1998, whereas it was ranked 18th the previous year. It was originally used in ancient Greece, and was used during World War I as a primary treatment for shell shock.

Like kava, valerian likely acts as a GABA agonist to produce its sedative effects, noted Hardy in 1999. Several good placebo-controlled studies indicate that it reduces the time it takes to fall asleep, but the research indicating that it improves sleep quality is very limited. The few available studies indicate that valerian is somewhat more effective than placebo for treating mild anxiety, but is likely ineffective for moderate to severe anxiety or panic disorder.

Valerian's side effects include mild morning sedation and headache, although one case of serious liver toxicity from an over-the-counter sleep remedy containing valerian has been reported. Valerian use in conjunction with other sedative drugs (such as benzodiazepines, barbiturates, or anesthetics) is contraindicated, as the interaction may potentiate the sedation. The research available to date indicates that valerian may not potentiate the effects of alcohol, but until more research is available it is advisable not to combine the two.

III. SUMMARY

In general, good studies demonstrating the effectiveness of most alternatives to psychotherapy are lacking.

In some cases, the research is yet to be conducted. In other cases, the body of available research indicates that the treatments are ineffective or, at best, only slightly more effective than placebo. However, more and more health care dollars are being spent on these and other alternative therapies. This trend toward increased utilization of treatments that are unverified and of dubious scientific validity is likely due to several factors: (1) The American consumer expects modern medicine to be able to cure every ailment and alleviate every pain. When it does not, the consumer often turns to alternative techniques. (2) The public erroneously equates “alternative” with “safe” and “natural.” At the same time, the public is concerned about the dangerous side effects that may accompany prescription medications. (3) Many patients believe that managed care is limiting their access to medical treatment and medications. In many cases, the newer psychotropic medications are not included on some insurance companies’ formularies. Even though herbal alternatives may be costly, they are often less costly than paying out-of-pocket for nonformulary medications. (4) Many consumers complain that their doctors do not really listen to them and involve them in health care decisions. On the other hand, health food store personnel and alternative practitioners are often much more willing to listen, spend time with patients, and offer patients the opportunity to participate in decisions. (5) Perhaps most important, the public is deluged with health information. Few people have the ability to read health information critically and to distinguish between good science and hype.

Although research to date may not be sufficient to draw conclusions about the effectiveness of many alternative therapies, some alternative therapies have been demonstrated to be effective adjunct treatments for various medical conditions. For example, biofeedback has been shown to be helpful in the treatment of a number of medical conditions, particularly muscle tension headaches and Raynaud’s disease. As a result, insurance companies are becoming increasingly willing to pay for such treatments as adjuncts to standard medical treatments.

See Also the Following Articles

Animal-Assisted Therapy ■ Biofeedback ■ Cost Effectiveness ■ Cultural Issues ■ Effectiveness of Psychotherapy ■ Eye Movement Desensitization and Reprocessing ■ Online or E-Therapy

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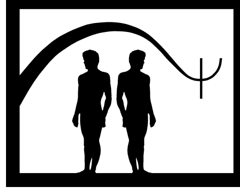

Anger Control Therapy

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I. Description of Treatment
II. Theoretical Bases
III. Applications and Exclusions
IV. Empirical Studies
V. Case Illustration
VI. Summary
Further Reading

GLOSSARY

aggression Behavior intended to cause psychological or physical harm to someone or to a surrogate target. The behavior many be verbal or physical, direct or indirect.

anger A negatively toned emotion, subjectively experienced as an aroused state of antagonism toward someone or something perceived to be the source of an aversive event.

anger control The regulation of anger activation and its intensity, duration, and mode of expression. Regulation occurs through cognitive, somatic, and behavioral systems.

anger reactivity Responding to aversive, threatening, or other stressful stimuli with anger reactions characterized by automaticity of engagement, high intensity, and short latency.

anger schemas Mental representations about environment–behavior relationships, entailing rules governing threatening situations. They affect anger activation and behavioral responding.

cathartic effect The lowering of the probability of aggression as a function of the direct expression of aggression toward an anger-instigator. The lowering of arousal associated with such catharsis is more or less immediate and can be reversed by re-instigation.

escalation of provocation Incremental increases in the probability of anger and aggression, occurring as reciprocally heightened antagonism in an interpersonal exchange.

excitation transfer The carryover of undissipated arousal, originating from some prior source, to a new situation having a new source of arousal, which then heightens the probability of aggression toward that new and more proximate source.

frustration Either a situational blocking or impeding of behavior toward a goal or the subjective feeling of being thwarted in attempting to reach a goal.

hostility An attitudinal disposition of antagonism toward another person or social system. It represents a predisposition to respond with aggression under conditions of perceived threat.

inhibition A restraining influence on anger expression. The restraint may be associated with either external or internal factors.

provocation hierarchy A set of provocation scenarios progressively graduated in degree of anger-inducing features for the client. It is constructed by the therapist in collaboration with the client during the early stages of treatment and is used in the stress inoculation procedure.

stress inoculation A three-phased, cognitive-behavioral approach to therapy, involving cognitive preparation/conceptualization, skill acquisition/rehearsal, and application/follow-through. Cognitive restructuring, arousal reduction, and behavioral coping skills training are the core treatment components. Therapist-guided, graded exposure to stressors occurs in the application phase, where the client's enhanced anger control skills are engaged.

violence Seriously injurious aggressive behavior, typically having some larger societal significance. The injury may be immediate or delayed.

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I. DESCRIPTION OF TREATMENT

A. Topic Introduction and Definition

Providing psychotherapy for persons having recurrent anger problems is a challenging clinical enterprise. This turbulent emotion, ubiquitous in everyday life, is a feature of a wide range of clinical disorders. It is commonly observed in various personality, psychosomatic, and conduct disorders, in schizophrenia, in bipolar mood disorders, in organic brain disorders, in impulse control dysfunctions, and in a variety of conditions resulting from trauma. The central problematic characteristic of anger in the context of such clinical conditions is that it is "dysregulated"—that is, its activation, expression, and effects occur without appropriate controls. Anger control treatment, a cognitive-behavioral intervention, augments the client's self-regulatory capacity. It aims to minimize anger frequency, intensity, and duration and to moderate anger expression. It is an adjunctive treatment for a targeted clinical problem and thus is not meant to address other or more general psychotherapeutic needs. Clinical interventions for problems of anger seek to remedy the emotional turbulence that is associated with subjective distress, detrimental effects on personal relationships, health impairments, and the manifold harmful consequences of aggressive behavior. The main components of anger control treatment are cognitive restructuring, arousal reduction, and enhancement of behavioral skills. A key feature of its implementation is therapist-guided progressive exposure to provocation, in conjunction with which anger regulatory coping skills are acquired.

B. Core Characteristics of Clients

A common characteristic of people having serious anger problems is that they resist treatment, largely due to the functional value that they ascribe to anger in dealing with life's adversities. Because anger can be comingled with many other clinical problems (such as personality disorder, psychoses, or substance abuse), getting leverage for therapeutic change can be an elusive goal, particularly when referrals for anger treatment entail some element of coercion. Efforts to achieve clinical change are challenged by the adaptive functions of anger as a normal emotion, such that it is not easily relinquished. Anger is often entrenched in personal identity and may be derivative of a traumatic life history. Because anger activation may be a precursor of aggressive behavior, while being viewed as a salient clinical need, it may at the same time present safety concerns for the clinician and be unsettling for mental health professionals to engage as a treatment focus. Although many high-anger patients present with a hard exterior, they can be psychologically fragile, especially those having histories of recurrent abuse or trauma, or when abandonment and rejection have been significant life themes. Because anger may be embedded with other distressed emotions, accessing anger is often not straightforward.

C. Assessment Issues

Anger treatment best proceeds from proficient anger problem assessment. However, assessment itself presents many challenges, because of the multidimensionality of anger (cognitive, physiological, and behavioral features) and because the true level of anger may be masked by the person in reaction to the testing situation. In many assessment contexts, particularly forensic ones, people are not inclined to report that they have high anger dispositions. Even when clients are treatment-seeking, they may not be altogether forthcoming about their anger because an "angry person" labeling carries unflattering connotations. Effectively targeting anger treatment, as well as ascertaining therapeutic gains, hinges on assessment proficiency, which is best done by a multimethod approach utilizing interview, psychometric, clinical rating, and behavioral observation methods, as well as archival and physiological methods when possible.

D. Levels of Intervention

Psychotherapy for anger control can occur at several levels of intervention: (1) General clinical care for anger; (2) psychoeducational "anger management" provision, typically delivered in a group format; and (3) anger treatment, which is best provided on an individual basis and may require a preparatory phase to facilitate treatment engagement. The intervention levels reflect the degree of systematization, complexity, and depth of therapeutic approach. Increased depth is associated with greater individual tailoring to client needs. Correspondingly, greater specialization in techniques and in clinical supervision is required at higher levels.

E. Anger Control Treatment: A Stress Inoculation Approach

Cognitive-behavioral anger treatment targets enduring change in cognitive, arousal, and behavioral systems. It centrally involves cognitive restructuring and

the acquisition of arousal reduction and behavioral coping skills, achieved through changing valuations of anger and augmenting self-monitoring capacity. Because it addresses anger as grounded and embedded in aversive and often traumatic life experiences, it entails the evocation of distressed emotions (e.g., fear and sadness) as well as anger. Therapeutic work centrally involves the learning of new modes of responding to cues previously evocative of anger in the context of relating to the therapist ("transference"), and it periodically elicits negative sentiment on the part of the therapist to the frustrating, resistive, and unappreciative behavior of the client ("countertransference"). Anger treatment that has followed a "stress inoculation" approach utilizes provocation hierarchy exposure. The inoculation metaphor is associated with the therapist-guided, progressive exposure to provocation stimuli. This occurs *in vitro* through imaginal and role-play provocations in the clinic, and *in vivo* through planned testing of coping skills in anger-inducing situations identified by the client's hierarchy.

Stress inoculation for anger control involves the following key components: (1) Client education about anger, stress, and aggression; (2) self-monitoring of anger frequency, intensity, and situational triggers; (3) construction of a personal anger provocation hierarchy, created from the self-monitoring data and used for the practice and testing of coping skills; (4) arousal reduction techniques of progressive muscle relaxation, breathing-focused relaxation, and guided imagery training; (5) cognitive restructuring of anger schemas by altering attentional focus, modifying appraisals, and using self-instruction; (6) training behavioral coping skills in communication, diplomacy, respectful assertiveness, and strategic withdrawal, as modeled and rehearsed with the therapist; and (7) practicing the cognitive, arousal regulatory, and behavioral coping skills while visualizing and role-playing progressively more intense anger-arousing scenes from the personal hierarchies.

Provocation is simulated in the therapeutic context by imagination and role-play of anger incidents from the hierarchy scenarios, produced by the collaborative work of client and therapist. The scenarios incorporate wording that captures the client's perceptual sensitivities on provoking elements, such as the antagonist's tone of voice or nuances of facial expression. Each scenario ends with provocative aspects of the situation (i.e., not providing the client's reaction), so that it serves as a stimulus scene. The therapist directs this graduated exposure to provocation and knows the moderating variables that will exacerbate or buffer the magnitude of the anger reaction, should the scene need to be intensified or attenuated in potency. Prior to the presentation of hierarchy items, whether in imaginal or role-play mode, anger control coping is rehearsed, and arousal reduction is induced through deep breathing and muscle relaxation. Successful completion of a hierarchy item occurs when the client indicates little or no anger to the scene and can envision or enact effective coping in dealing with the provocation.

Following the completion of the hierarchy, an effort is made to anticipate circumstances in the client's life that could be anger-provoking and the obstacles to anger control that might arise. This is done as a relapse prevention effort, especially as people having anger difficulties are often without adequate supportive relationships to provide reinforcement for anger control. Follow-up or booster sessions are typically arranged to provide support, to ascertain what coping skills have proven to be most efficacious, and to boost treatment in areas in need of further work. Because of the reputations acquired by high-anger people, the reactions of others to them can be slow to change. This can lead to relapse and requires therapeutic attention at follow-up.

F. Treatment Preparatory Phase Needed

Some seriously angry clients may be quite ambivalent about earnestly engaging in assessment and treatment, and in some clinical service contexts, particularly forensic settings, angry patients may be very guarded about self-disclosure. Because of the instrumental value of anger and aggression, many clients do not readily recognize the personal costs that their anger routines incur; because of the embeddedness of anger in long-standing psychological distress, there is inertia to overcome in motivating change efforts. In such circumstances, a treatment "preparatory phase" is implemented, involving a block of five to seven sessions, varying with client competence and motivation. The aim is to foster engagement and motivation, while conducting further assessment and developing the core competencies necessary for treatment, such as emotion identification, self-monitoring, communication about anger experiences, and arousal reduction. It serves to build trust in the therapist and the treatment program, providing an atmosphere conducive to personal disclosure and collaboration. Since the preparatory phase can be pitched to the client as a "trial period," its conclusion then leads to a more explicit and informed choice by the client about starting treatment proper.

II. THEORETICAL BASES

A. Anger and Threat

The conception of anger as a product of threat perceptions, as having confirmatory bias characteristics (i.e., the perception of events is biased toward fit with existing anger schemas), as being primed by aversive precursors, and as having social distancing effects (i.e., expressing anger keeps people away) can be found in the writings of Lucius Seneca, who was Nero's tutor in first-century Rome. Seneca was the first to write systematically about anger control. Like other Stoic philosophers who negate the value of emotions, his view of anger was almost exclusively negative. Although his idea of anger control was largely that of suppression, Seneca recognized the powerful role of cognition as a determinant of anger, advocated cognitive shift and reframing to minimize anger, and saw the merit of a calm response to outrageous insult. However, he discounted the functional value of anger, which thereby led him to miss the principle of regulation.

Since the writings of Charles Darwin, William James, and Walter B. Cannon, anger has been viewed in terms of the engagement of the organism's survival systems in response to threat and the interplay of cognitive, physiological, and behavioral components. It is an elementary Darwinian notion that the adaptive value of a characteristic is entailed by its fitness for the environment; if the environment changes, that characteristic may lose its adaptive value, and the organism must adjust. The activation of anger may usefully serve to engage aggression in combat and to overcome fear, but in most everyday contexts, anger is often maladaptive.

Many theories of emotion have enlarged upon the Darwinian view of emotions as reactions to basic survival problems created by the environment and upon Cannon's idea that internal changes prepare the body for fight or flight behavior. Thus, emotion has commonly been viewed as an action disposition. Some contemporary theorists postulate that emotion is controlled by appetitive and aversive motive systems in the brain, with the amygdala serving as a key site for the aversive motivational system, and neurobiological mechanisms associated with amygdala involvement in aversive emotion and trauma are being studied in various laboratories. Most generally, when people are exposed to stimuli signifying present danger or reminders of trauma, they are primed for anger reactions. Anger is intrinsically connected to threat perception.

B. Anger and Cognition

Central to therapeutic prescriptions for anger control is the idea that emotion is a function of cognitive appraisal. That is, anger is produced by the meaning that events have and the resources we have for dealing with them, rather than by the objective properties of the events. Important work in this regard was done by Lazarus on appraisal processes and on stress coping styles, yet there is dispute about how pivotal is appraisal in the activation of anger. Berkowitz alternatively asserts that aversive events trigger basic associations to aggression-related tendencies as a "primitive" or "lower order" processing, which is then paralleled by anger in association. "Higher order" processing, such as appraisal, is then subsequent to the rudimentary reactions, and anger can be elaborated by the appraisal. Similarly, Beck has conjectured that anger derives from "primitive" processing in defense against threat, in which mode information is rapidly compartmentalized. Negative biases and overgeneralization lead to information-processing errors and anger activation. Appraisal processing (activation of beliefs and interpretations) may then follow this primal thinking mode. What Beck adds is that automatic thoughts are activated in the primal mode and that these are the roots of emotional distress.

This differentiation between "lower order" and "higher order" processing may otherwise be viewed as a distinction between "automatic" versus "controlled" operations. Sometimes anger occurs as a fast-triggered, reflexive response, while other times it results from deliberate attention, extended search, and conscious review. There is nothing necessarily "primitive" about automaticity in anger responding, as anger schemas and aggressive scripts, which are acquired through social learning, can produce rapid reaction to provocation stimuli. Furthermore, central cognitive processes can override reflexive responding to aversive stimulation. Otherwise we would be very angry on most trips to the dentist, and professional boxers in the ring would be in a continuous state of rage.

Social information processing models of aggressive behavior, such as that of Huesmann, view the human mind as analogous to a computer. Anger schemas are thus understood as macro knowledge structures, encoded in memory, that filter our perceptions and are used to make inferences. Aggressive scripts are subroutines that serve as guides for behavior, laying out the sequence of moves or events thought to be likely to occur and the behavior thought to be possible or appropriate for a certain situation.

The main thrust of such conceptions is that anger and its associated behavior are cognitively mediated. Correspondingly, anger control interventions target the way in which people process information, remember their experiences, and cognitively orient to new situations of stress or challenge. Therapeutic change of schemas linked to anger prevents the occurrence of anger, and the self-regulation of anger once activated is effected by controlled use of cognitive self-control techniques, such as calming self-instructions and relaxation imagery, combined with other arousal reduction and behavioral coping strategies.

C. Cognition, Arousal, and Behavior Reciprocities

Intrapsychic, dispositional systems are the principal focus of psychotherapy, and, in that regard, anger has three main subsystems or domains: cognitive, physiological, and behavioral. Cognitive dispositions for anger include knowledge structures, such as expectations and beliefs, and appraisal processes, which are schematically organized as mental representations about environment–behavior relationships entailing rules governing threatening situations. Arousal or physiological dispositions for anger include high hormone levels (neurotransmitters) and low stimulus thresholds for the activation of arousal. Anger is marked by physiological activation in the cardiovascular, endocrine, and limbic systems, and by tension in the skeletal musculature. Behavioral dispositions include conditioned and observably learned repertoires of anger-expressive behavior, including aggression but also avoidance behavior. Implicit in the cognitive labeling of anger is an inclination to act antagonistically toward the source of the provocation. However, an avoidant style of responding, found in personality and psychosomatic disorders, can foment anger by leaving the provocation unchanged or exacerbated.

Thus, it can be seen that these dispositional subsystems are highly interactive or interdependent. Anger-linked appraisals influence arousal levels, high arousal activates aggression and overrides inhibition, and antagonistic behavior escalates aversive events and shapes anger schemas and scripts for anger episodes as behavioral routines are encoded. In turn, the personal dispositional system interfaces with the environmental, such as when anger and aggression drive away pacific people, leaving one with angry and aggressive companions, who not only incite anger but from whom one continues to learn anger responding and anger-engendering appraisals, which further heighten arousal.

D. Person–Environment Context and Systems

Anger and anger control difficulties should be understood contextually. This assumes that recurrent anger is grounded in long-term adaptations to internal and external environmental demands, involving a range of systems from the biological to the sociocultural. The adaptive functions of anger affect the social and physical environmental systems in which the person has membership. Anger experiences are embedded or nested within overlapping systems, such as the work setting, the work organization, the regional economy, and the sociocultural value structure. Anger determinants, anger experiences, and anger sequelae are interdependent.

The interrelatedness of system components provides for positive and negative feedback loops. When a system moves away from equilibrium, negative feedback loops serve to counteract the deviation, such as when the self-monitoring anger reactions prompt deep breathing or cognitive reappraisal to achieve anger control. In contrast, anger reactions can be augmented by positive feedback, which is a deviation amplification effect. Anger displays in a situation of conflict tend to evoke anger and aggression in response, which then justify the original anger and increase the probability of heightened antagonism. Such anger–aggression escalation effects are well-known in conflict scenarios, whether interpersonal or international.

Intervention proceeding from a contextual model examines environmental, interpersonal, and dispositional subsystems that shape anger reactions. Although recurrent anger is often a product of long-term exposure to adverse conditions or to acute trauma, it is nevertheless the case that anger is a product of agentic behavior. People who select high-conflict settings or recurrently inhabit high-stress environments set the stage for their anger experiences. Those who are habitually hostile create systemic conditions that fuel continued anger responding that is resistant to change. As anger schemas solidify, anger is evoked with considerable automaticity in reaction to minimal threat cues. Aggressive scripts that program antagonistic behavior, which exacerbates anger difficulties, are socially and contextually learned. Focus on intrapsychic variables is transparently inadequate when the person remains immersed in anger-engendering contexts. Coordinated efforts of a multidisciplinary treatment team may be required.

III. APPLICATIONS AND EXCLUSIONS

Anger control therapy is an adjunctive treatment. Across categories of clients, the key issues regarding appropriateness for this therapy are (1) The extent to which the person has an anger regulatory problem, implying that acquisition or augmentation of anger control capacity would reduce psychological distress, the probability of aggression or other offending behavior, or a physical health problem, such as high blood pressure; (2) whether the person does recognize, or can be induced to see, the costs of his or her anger and aggression routines and is thus motivated to engage in treatment; and (3) whether the person can sit and attend for approximately 45 minutes. The latter criterion applies especially to hospitalized patients. The stress inoculation approach to anger has been successfully applied to institutionalized mentally disordered (schizophrenia and affective disorders) and intellectual disabled persons (mild to borderline). Because resolution on the issue of treatment engagement is often elusive, an anger treatment "preparatory phase" has been developed and implemented in work with forensic patients. Such preparatory work would also be appropriate for persons who have anger dysregulation in conjunction with trauma.

People with violent behavior problems are often referred for anger treatment (e.g., incarcerated offenders and spousal abusers or enraged drivers in the community). However, anger treatment is not indicated for those whose violent behavior is not emotionally mediated, whose violent behavior fits their short-term or long-term goals, or whose violence is anger mediated but not acknowledged. Little is known about the efficacy of cognitive-behavior therapy anger treatment with psychopaths, but it is doubtful that it would be suitable. As well, persons who are acutely psychotic or whose delusions significantly interfere with daily functioning are not suitable candidates for this self-regulatory treatment. Persons with substance abuse disorders also require prior treatment to engage in anger therapy. Successful case applications are given later.

IV. EMPIRICAL STUDIES

Research on anger treatment lags substantially behind that for problems of depression and anxiety, yet there is convergent evidence that various cognitive-behavioral interventions produce therapeutic gains in anger control. However, there have been few randomized control studies with seriously disordered patients. Such studies have more commonly been done with college student volunteers, selected as treatment recipients by upper quartile scores on self-reported trait anger, by having expressed interest in counseling for anger management, and by volunteering over the telephone. Such sample inclusion criteria do not reflect the clinical needs of the angry patients seen by mental health service providers in community and institutional settings. Existing meta-analytic reviews of treatment efficacy are overloaded with college student studies and fail to include case study reports and multiple baseline studies, which have typically involved real patients with serious problems. Nevertheless, statistical computations in reviews across dozens of controlled studies have found medium effect sizes for anger treatments, indicating that the large majority of treated participants were improved.

Cognitive-behavior therapy approaches that have not followed the stress inoculation framework have produced significant treatment gains, such as those by Deffenbacher and his colleagues using cognitive and relaxation methods with college student volunteers without demonstrable clinical pathology or violence history. However, such treatment study participants do not reflect the clinical needs of the angry patients seen by mental health service providers in community and institutional settings. In contrast to college student volunteer studies, a controlled anger treatment trial with seriously disordered Vietnam veterans by Chemtob, Novaco, Hamada, and Gross in 1997, which was missed in the Beck and Fernandez meta-analysis in 1998, obtained significant treatment effects on multiple measures of anger reactions and anger control for the stress inoculation anger treatment, compared to a multimodal, routine care control treatment condition. The anger control treatment gains with these severe posttraumatic stress disorder patients, who had had intense, recurrent postwar problems with anger and aggressive behavior, were maintained at 18-month follow-up. Other control group studies involving successful outcomes for the modified stress inoculation approach to anger treatment with clinical populations have included adolescents in residential care, adolescent offenders, forensic patients, and mentally retarded adults. Exemplary work on anger control with adolescents has been done by Feindler and her colleagues.

Multiple case studies involving a variety of serious clinical disorders have provided empirical support for

the efficacy of cognitive-behavioral anger treatment and the stress inoculation approach. These include a hospitalized depressed patient, child abusing parents, chronically aggressive patients, an emotionally disturbed boy, a brain damaged patient, mentally handicapped patients, adolescents in residential treatment, and institutionalized forensic patients.

Brief cognitive-behavioral therapy "anger management" has been successfully used in prisons, often delivered in group format, varying from 3 to 16 sessions across studies. However, outcome evaluation assessments in these prison-based studies have been thin, and results of efficacy have been uneven. In this regard, the treatment engagement issues highlighted earlier are most relevant, and the interventions used have not been firmly based in a designated treatment protocol. Because the through-put client service needs of institutions and community agencies are formidable, greater attention needs to be given to the development of group-based intervention for anger.

V. CASE ILLUSTRATION

A. Case Description

Mr. A is a man in his thirties, who received anger treatment in a forensic hospital. He had a highly dysfunctional home background. He was truant from school and reported abnormal psychological experiences, resulting in the involvement of the psychiatric services. In his teens, he developed a substance abuse problem and associated with a delinquent peer group that encouraged a violent presentation. Persistent petty theft associated with substance abuse and aggression led to placement in secure facilities. There, the experience of both using violence and being bullied had a profound effect on him.

He married and had a child, but his wife left him while he was serving a short prison sentence. Following a period of homelessness, he was imprisoned for assault. He was diagnosed with schizophrenia and while he resisted this, he would allude to having a special destiny after an encounter with extraterrestrials who had given him the power to benefit mankind. He was subsequently transferred to a psychiatric hospital, where he made a number of attacks on staff. He was ultimately transferred to community accommodation, but he was ejected for theft and noncompliance. He was readmitted to a local hospital, following arrest for reckless damage and police assault. He then again assaulted one of the staff, so badly that this led to his admission to a maximum security hospital.

There, his psychotic symptoms soon remitted, but he was reported to be demanding and antiauthoritarian, continually challenging the rules and reacting aggressively to any perceived threat to his self-image. A transfer to a local hospital was unsuccessful due to his aggressive, demanding manner and drug misuse. He struggled to cope with his readmission and maintained an antiestablishment attitude. He made frequent threats toward staff and was physically assaultive. Making little progress, he made a serious attempt at suicide, which was related to despair at his continued detention. When under stress, his positive psychotic symptoms could emerge. His close relationships having disintegrated, he was very worried about future intimate relationships.

B. Treatment Application

Mr. A received anger treatment by staff psychologists. He was happy to attend sessions but initially found it difficult to engage in tasks. He was anxious about being not listened to and was resistant to being given advice. He often refused to participate, argued his own point, talked on a tangent, or reduced everything to a joke. He was insistent that he should not be rushed and feared being overwhelmed. Establishing a supportive relationship and a sensitive pacing of therapy was vital to engagement. As he came to view his therapists as being nonjudgmental and working in his interests, he became less defensive and more willing to complete tasks such as anger diaries and hierarchical inoculation exercises. As treatment progressed, he became more resilient to provocation and less likely to conclude that others were personally attacking him. He found alternative ways of viewing situations that previously had initiated angry attempts to restore his self-esteem. He became more aware of his heightened level of physiological arousal in problematic situations and used tension reduction methods, including relaxation and taking time-outs to create social distance from provoking events. He learned to approach staff to discuss matters of dispute and received support from his peers for anger control.

Illustrative incidents: (1) Another patient accused Mr. A of not repaying a debt. As this was said in public, Mr. A thought this was a deliberate attempt to humiliate him and being angry, wanted to show that he was not someone "to be trifled with." However, he managed to stay calm and avoid violence; instead he responded in a

way that minimized loss of face and reminded himself of the negative consequences of physical violence. Later, he reassessed the situation, reasoning that the other patient was struggling with a life sentence for murder and had been picking on others, not just targeting him. Discussing the event with friends, they reinforced his view and reassured him that they did not believe the accusation. (2) Having been recommended for transfer to a lower security hospital, a visit to that local hospital was arranged. One hour before leaving for his visit, it was cancelled because of events at the local hospital. Initially he was convinced that there was a sinister motive, feeling that the staff were trying to renege on the agreement. He became angry. However, he used arousal reduction techniques, and had a discussion with staff, who rearranged the visit. Staff remarked that he listened to their explanation and trusted them to resolve the situation, rather than behave self-destructively.

C. Treatment Gains and Transfer

Level of care staff observed that Mr. A generally began to take others' perspectives into account, and his psychiatrist reported that he was less impatient, less instantly demanding, and better able to listen and to discuss issues in a constructive manner. His gains in anger control led to a recommendation for transfer to his local hospital, and staff there reported being impressed with what they felt was a positive change in his presentation. His self-reported improvement in anger control and progress through the provocation hierarchy in treatment sessions thus received validation from ward staff observations of his behavior and by the judgment of his attending psychiatrist who arranged the transfer to a lower security hospital.

VI. SUMMARY

Anger control therapy is a cognitive-behavioral treatment. It aims to augment the regulation of anger that has become problematic in frequency, intensity, duration, and mode of expression. In its fullest form of intervention, it utilizes a "stress inoculation" approach, the heart of which involves therapist-guided, progressive exposure to provocations in the clinic and *in vivo,* in conjunction with which coping skills are modeled and rehearsed. Training in self-monitoring, cognitive reframing, arousal reduction, and behavioral coping skills are the essential components of the treatment. Some clients require a preparatory phase for treatment engagement.

See Also the Following Articles

Arousal Training ■ Beck Therapy Approach ■ Multimodal Behavior Therapy ■ Post-Traumatic Stress Disorder

Further Reading

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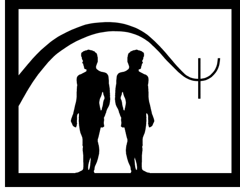

Animal-Assisted Therapy

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I. Description of Treatment
II. Theoretical Bases
III. Empirical Studies
IV. Suggestions for Clinical Application
V. Summary
Further Reading

GLOSSARY

animal-assisted activities Therapy that involves animals visiting people for motivational and recreational benefits to enhance quality of life. The same activity can be repeated by the facilitator with the same or different people, unlike the therapeutic intervention that is tailored to the specific person.

animal-assisted therapy A goal-oriented intervention in which an animal meeting specific criteria is an integral part of the treatment process. This service is delivered by a health or human service professional working within the scope of his or her professional role.

I. DESCRIPTION OF TREATMENT

Louis Sabin once stated that "No matter how little money and how few possessions you own, having a dog makes you rich." Being rich should not only ecompass physical resources, but also the joy and love from being wanted and appreciated. Animals appear to demonstrate great compassion for others and enhance the quality of life of their human counterparts.

Florence Nightingale in *Notes on Nursing* stated that a small pet animal was an excellent companion for the sick. Her impressions in the mid-ninteenth century seemed to accurately represent how animals could be supportive to the physical and mental health of individuals. Her position represents the impressions of various health care professionals over the past century and a half. Nevertheless, it has been the seminal work of Boris Levinson which many have considered to provide one of the earliest published papers highlighting the therapeutic value of animals. Levinson's first article was entitled "The Dog as a Co-Therapist" and was published in *Mental Hygiene* in 1962. His initial article was met with cynicism and skepticism by many of his colleagues. However, Levinson genuinely believed that animals could make a major contribution to the therapeutic process.

Although some strides have been made in developing concepts in animal–human relationships, there continues to be limited empirical support and limited research validating the overall effectiveness of this approach. Many researchers point out that although the utilization of animals may be highly appealing, the evidence that a patient has enjoyed an interaction with an animal does not imply that the procedure is therapeutic. It appears that the biggest challenge facing advocates of animal-assisted therapy who claim that it improves outcomes is the need for documentation. The author in a previous writing suggested that a concentrated stronger effort is needed in promoting more sound empirical investigations demonstrating

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the therapeutic utility of animals in various clinical settings. He suggested that the investigators may want to study what populations animal-assisted therapy (AAT) are effective with and under what conditions animal-assisted activities (AAA) or AAT are the most valuable. Furthermore, practitioners must pay attention to the need for program evaluation and documentation. These efforts will assist the scientific community with the needed research priorities.

In September 1987, the National Institutes of Health held a workshop entitled Health Benefits of Pets. Data from the proceedings highlighted some scientific evidence that pet ownership appeared to correlate with improvements in quality of life. Results from the meeting also pointed out that attachments to animals might also be an important dimension in studying those who have experienced or are experiencing reduced social contacts with people (e.g., the elderly and isolated children). These meetings appeared to act as a catalyst for the development of numerous animal visiting programs (sponsored by the various humane societies) for residents in long-term facilities. These early programs were considered pleasant diversionary activities. They were welcomed by administrators as long as the program didn't pose any risks to patient health and safety.

It appears that the greatest benefit an animal brings to a therapeutic setting is its ability to enhance the relationship between therapist and client. Its presence seems to make the client more comfortable and at ease. Phil Arkow suggested that the animal may act as a catalyst for the conversation between the therapist and the client. He called this process a rippling effect. Others, such as Samuel Corson and Elizabeth Corson, call this process a social lubricant. The presence of the animal allows the client a sense of comfort, which then promotes rapport in the therapeutic relationship. Studies reported in the literature point out that a therapist who conducts therapy with an animal being present may appear less threatening, and, consequently, the client may be more willing to reveal him/herself. Some clinicians report that in interviews in the presence of their dogs, children appeared more relaxed and seemed more cooperative during their visit. The findings appear to conclude that the dogs serve to reduce the initial tension and assisted in developing an atmosphere of warmth. The animals appear to help many clients overcome their anxiety about going into therapy. Many therapy animals, especially dogs, are more than willing to receive a client in a warm and affectionate manner.

The author in his application of AAT in his work with children has also found that his clients seemed to benefit from the observations seen between the animal and the therapist. The most common response pertains to the interaction with the animals and how some clients compare these interactions with their own child/parent relationships (since most of his clients are children and their parents). Other clients comment on how well the animals are treated, including the elements of compassion, consistency, firmness, and love. These vicarious observations can be utilized for the purposes of teaching skills and vicarious learning.

A. The Therapeutic Environment—Animals as an Aspect of Milieu Therapy

One of the most valued aspects of having animals as part of a therapeutic alliance appears to be related to their impact on altering the therapeutic environment. This assumption has been strongly advocated by this writer in numerous previous publications. The assumption has also been supported by Alan Beck who also believed that animals seemed to have the capacity to modify a person's environment. In most cases, presence of an animal appears to modify the perceived environment and make it more friendly and comfortable to incoming clients. Herbert Sklar suggests that development of an effective therapeutic alliance may actually begin with the creation of a proper therapeutic environment. It appears that the client's readiness for psychotherapy could be disturbed by the simplicity of a clinic's decor and perhaps by its disorder.

It seems obvious that living beings could also be utilized to complement the work environment by making it more appealing and relaxing. Of utmost value is that animals appear to bring a certain sense of security and warmth into the environment. Alan Beck and his associates conducted a study in Haverford, Pennsylvania, where they hypothesized that animals would alter the therapeutic environment and make it less threatening to patients with various mental illnesses. The patients (who met in a room containing birds) attended sessions more faithfully and became more active participants in comparison to a control group. In addition, the researchers found a reduction in hostility scores (from the Brief Psychiatric Rating Scale) in the clients within the experimental milieu.

A variety of researchers have looked at animals and their apparent impact on reducing stress in an

environment. For example, Aaron Katcher, Arline Segal, and Alan Beck reported, in their study on anxiety and discomfort before and during dental surgery, that subjects viewing the aquarium appeared more comfortable and less anxious than those subjects in a control group not viewing an aquarium. Watching a school of fish can be quite relaxing for some. With proper lighting and an attractively designed tank, clients can feel more at ease when they enter an office or while in therapy.

B. Incorporating Theory in Practice: Animal-Assisted Therapy from a Life Stage Perspective

A clinician's theoretical orientation will have a strong bearing on the incorporation of animals within his or her therapeutic approach. An explanation that seems to naturally align itself is Erikson's theoretical orientation. Erikson views development as a passage through a series of psychosocial stages, each with its particular goals, concerns, and needs. Although the themes may repeat during a life cycle, Erikson noted that certain life concerns were more relevant during specific eras. For example, as people age and experience new situations, they confront a series of psychosocial challenges. Aubrey Fine, in an article written on AAT in psychotherapy in the *Handbook on Animal Assisted Therapy*, recommended that clinicians should consider the various eight stages of psychosocial development and reflect on how the application of animals may be appropriate. Table 1 briefly highlights the major tenets presented.

Clinicians should consider extending the boundaries of where they perform their psychotherapy with their clients beyond the traditional office. Utilizing dogs as part of a therapeutic regime promotes taking walks. While walking, a therapist has an opportunity to deal with issues in a more comfortable and less threatening manner. Clinicians should become cognizant of their own communities and plan out routes that may have different purposes. For example, if privacy is strongly needed, the therapist should try to plan a walk that secures the most privacy and the fewest disruptions. Most routes should have a place where the clinician and client can stop and sit. This may be a point during a session where more attention to details is needed.

Clinicians applying AAT in their practices may also find the utilization of metaphors and stories incorporating animals as an appropriate extension. Clients in most cases should feel comfortable with these topics (since they are already being exposed to animals in the

TABLE 1
Animal-Assisted Therapy from a Life-Stage Perspective

Suggested developmental goals and treatment purposes for children

Suggestion 1. Within the first series of life stages, the primary goals to be achieved pertain to a child's need to feel loved, as well as developing a sense of industry and competence. In a practical sense, animals can assist the clinician in promoting unconditional acceptance. The animal's presence in therapy (as discussed previously) may assist a child in learning to trust. Furthermore, the animal may also help the clinician demonstrate to the child that he is worth loving.

Suggestion 2. The animal-assisted therapy can eventually go beyond the office visit. A clinician may suggest to a family the value of having a pet within the home. The animal may help a child develop a sense of responsibility as well as importance in life.

Suggested developmental goals and treatment purposes for adolescence

Suggestion 1. A clinician may find an animal's presence valuable in making the teen feel more at ease during his or her visit. The teen may be more willing to take down some of the barriers, if she or he feels more comfortable. Furthermore, although a teen may project the need to be adult-like, the teen may appreciate the free spirit of an animal. The comfort the youth may receive may allow him or her to feel more appreciated.

Suggested developmental goals and treatment purposes for adults

Suggestion 1. A therapist may use a therapy animal as a starting point to discuss decisions about having children or, for that matter, child-rearing practices.

Suggestion 2. Adults experiencing parenting challenges and couples who are experiencing marital dysfunction may find the metaphors and the stories related to bringing up children and learning to share one's life with another person as all appropriate topics. The presence of animals, and examples incorporating animals, may give some clarity to the subject of generativity versus self-absorption.

Suggested developmental goals and treatment purposes for the elderly

Suggestion 1. Clients who have had a history of animals within their lives may find the animal's presence extremely advantageous in reminiscing about past life events. A clinician may ascertain that the presence of the animal may act as a catalyst for reliving past events.

Suggestion 2. The clinician may also recommend to elderly patients that they consider purchasing a pet. A client's sense of value could be tremendously enhanced as a consequence of feeling needed once again.

therapeutic environment). Stories portraying the challenges, obstacles, and successes that animals experience and overcome may be applied therapeutically to help clients see the world or the struggles they face from a different perspective.

II. THEORETICAL BASES

Although not directly related to psychotherapy, the following research will provide further insight into the value of the animal–human bond. Mental health professionals may find this information useful in developing a clearer perception of the impact of animals in the lives of people. Over the past 30 years there have been several controlled studies documenting the correlation of pet ownership and cardiovascular health. Erika Friedman and her associates designed a study investigating pet ownership with survival rates among patients who were hospitalized for heart attacks, myocardial infarctions, or severe chest pains. The results illustrated a significant difference in life expectancy between the subjects who did have a pet versus those who did not. The results pointed out that 5.7% of the 53 pet owners compared with 28.2% of the 39 patients who did not own pets died within one year of discharge from a coronary care unit. The findings within this study have been replicated with similar findings in a few other studies. This assumption was also noted by James Serpell, a leading authority on animal–human relations, who detected that seniors who adopted pets appeared to experience a decreased frequency of minor health problems. These minor health problems included headaches, painful joints, hay fever, difficulty paying attention, colds and the flu, dizziness, kidney and bladder problems, as well as a mirage of other mild illnesses. He suggested that the associated physiological benefits could have been the result of increased physical activity.

On the other hand, there have been numerous studies investigating the psychosocial benefits of pet ownership. Conclusions from a vast majority of these studies point out that pet ownership or interaction with animals in therapeutic settings should be viewed with the interaction of many other social influences. Those individuals who live highly stressed lives (families in poverty or dislocation) may benefit more from social supports, including support from animals.

Companion animals provide numerous benefits to the emotional well-being of humans. Animals at times take on numerous roles where there may be a void in an individual's life, including functioning as a friend and a confidant. Animals comfort their companions and apparently serve as a buffer of protection against adversity. Companion animals also appear to satisfy the numerous psychosocial needs of their human counterparts, including enhancing social stimulation, as well as providing an outlet for leisure opportunities. Reports in the psychological literature suggest that unobtrusive animals evoke social approaches and conversations from unfamiliar adults and children. Presence of an animal may become a social lubricant for spontaneous discussions with passing strangers. The dog usually helps break the ice and makes it easier to initiate casual discussion. In most cases, the topics initially begin around the animal's presence.

A. Companion Animals and Children

Brenda Bryant reports that animal companions have been found to provide important social support for children. She also reports that animals within a home may assist children in developing a greater sense of empathy for others, and may enhance a child's self-esteem and social skills.

Bryant surveyed 213 children and identified four potential psychological benefits of animals for children. In 1990 she utilized the "My Pet Inventory" to assess the subjects' interests. A factor analysis of Furman's inventory indicated that, from a child's perspective, there are four factors in which the child–pet relationship can be viewed as potentially beneficial. Bryant defined the factor of mutuality as having to do with the experience of both giving and receiving care and support for the animal. The enduring affection factor identifies the child's perception of the lasting quality of his or her relationship with the pet. This factor focuses on the permanence of the emotional bond between the child and the animal. Enhanced affection, the third factor, identifies the child's perception that the child–pet relationship makes him or her feel good as well as important. Finally, the factor of exclusivity focuses on the child's internal confidence in the pet as a confidant. This factor appears to be extremely crucial for therapists to underscore. It is within this factor that a child may rely on the pet companion to share private feelings and secrets. This may be an important outlet, especially when there are limited friends and supports within the community or the home. There is evidence reported that a child may also use an animal as a confidant. This appears to be an obvious alternative that some children may confide in their animals for social support. Many parents

and clinicians over the years have remarked that they have observed children utilizing a family pet as a sounding board or as a safe haven to discuss their problems and troubles.

B. Therapeutic Benefits of Companion Animals for the Chronically and Terminally Ill, Persons with Disabilities, and the Elderly

Over the years, some reported studies have found that pet ownership appears to decrease depression and improve a healthier morale state. There have been studies indicating that war veterans found pet ownership to be associated with improved morale. Furthermore, Lynette Hart and her associates have reported that service animals appear to stimulate conversations and interactions between the people who used the service animals and those who were just walking by. People with the assistance animals noted that their dogs created social opportunities with people. The dog appears to normalize the environment for the person with a disability and to act as a catalyst for a discussion.

A benchmark study conducted by Roger Mugford on the therapeutic value of pets for the elderly found that older people (who live independently) who were given a budgerigar had significantly improved social attitudes and appeared to be happier than those subjects who were in the control group (after five months). Furthermore, animals living within the home of people with terminal illnesses or animals visiting those with similar constraints appear to lessen the individual's fears, their sense of loneliness, and stress levels. Similar findings have been reported in studies evaluating the impact of an animal on the lives of people with terminal illnesses such as cancer and AIDS. A synthesis from these studies suggests that these individuals seemed to feel more in control of their lives when they were able to take care of an animal. Taking care of the animal and being able to hold and caress it seemed to cause them to focus less on their illness.

Companion animals tend to help people use their own strengths to help themselves and to be sensitive to other people's feelings and emotions, and therefore recognize those occasions when they are needed or wanted. Animals can act as human surrogates in a number of roles, including friends and confidants. In times when people are secluded in their homes, the companionship of animals is extremely meaningful. They act as true friends.

Keith Cherry and David Smith suggest that persons with AIDS are especially susceptible to loneliness. Statistics point out that a high portion of patients with AIDS have diminished social support from friends, family, and significant others. Therefore, it appears that the pets owned by these individuals can act as important social supports. Programs such as Pets are Wonderful Support (PAWS) have been developed to help persons with AIDS keep their pets as long as possible. The PAWS model recognizes the importance of the companion animal in the quality of life of his or her human counterpart. This model appears to be applicable to any other special population living independently.

III. EMPIRICAL STUDIES

Animal-assisted activities and AAT are most widely incorporated in institutional settings and large mental health organizations. Historically, these services have been facilitated by mental health professionals in addition to nursing and other allied health specialists. In most cases, these services have been applied in long-term care facilities for the elderly, patients in hospitals, children in a variety of therapeutic settings, and inmates in prisons.

Research reports the tremendous value in developing an animal visiting program (or even having an animal living in residence) in facilities serving the elderly. In most studies reviewed, the authors stressed that the residents in most nursing homes appeared eager for the weekly AAT program. In some cases, residents kept track of the calendar in anticipation of interaction with the animals. Several studies investigating the impact of AAA or AAT on the elderly have concluded that the therapy (1) appears to have a positive impact on enhancing attention span; (2) is instrumental in positively enhancing elements of quality of life and well-being; and (3) appears to be effective in decreasing levels of depression among many residents as well as enhancing socialization and communication opportunities between the residents.

Most research studies investigating AAA or AAT in hospital settings have acknowledged similar outcomes to those originally noted with the elderly. The conclusions suggest that the animal-based programs appear to be a good distraction for the patients from their everyday medical treatment in the hospital. The services also appeared to have a positive impact on health factors, including decreasing pain and hyperactivity, helping the patients feel calmer, as well as reducing high blood pressure.

In a very revealing study, David Lee documented the incredible positive outcomes identified for an AAT program initiated at the Lima State Hospital for the Criminally Insane. Lee reported that the wards with animals seemed to have a calming effect on the patients. There was also a noticeable reduction in the patients' violent acts and suicide attempts. Similar outcomes were found in the Washington State Correctional Center for Woman program, which found that inmates who were involved in the training of service dogs appeared to be less depressed and proud of their abilities in training the animal.

An ultimate concern in most medical settings is the health effects of the animals on the clients. This process is now known as "zoonoses." Philip Wishon reports that most cats and dogs carry human pathogens, which along with those carried by other animals have been associated with more than 150 zoonotic diseases. However, Linda Hines and Maureen Fredrickson of the Delta Society point out that the data regarding the transmission of zoonotic diseases in any AAT program have been minimal. Practitioners are advised to work closely with veterinarians and other public health specialists to ensure the safety of the animals as well as the clients involved.

IV. SUGGESTIONS FOR CLINICAL APPLICATION

A. Training and Liability

Therapists considering incorporating animals within their practice must seriously consider the factors of liability, training, as well as the safety and welfare of both the animal and the client. The Delta Society's Pet Partner Program strongly advocates that health care professionals have training in AAT and AAA techniques. Clinicians also need to be aware of best practice procedures ensuring quality and safety for all parties.

Gary Mallon and his associates, in a chapter in the *Handbook of Animal Assisted Therapy*, provided guidelines for developing and designing AAT programs. Within their chapter, the authors identified 20 principles that a practitioner should consider in developing an AAA or AAT program. The following briefly highlights some of the major points:

1. All animals must be screened for their temperament to make sure they are appropriate candidates. Clinicians are encouraged to utilize the standards of practice guidelines suggested by the Delta Society. These standards highlight the need for reliability of the animal's behavior, as well as the predictability that the animal's behaviors will occur on a constant basis and that the animal can always be controlled or managed.
2. All animals incorporated in AAA or AAT must be permitted to rest and have breaks from their working schedule. Attention must also be given to the suitability of the animal to meet the specific goals prescribed by the practitioner for the specific session.
3. All clients should be interviewed to assess their comfort level with various animals, specific allergies, and, if relevant, past abusive behavior toward animals.
4. The AAA or AAT must be integrated into the client's comprehensive treatment plan.
5. The practitioner should utilize the animal to aid in mastering developmental tasks and to promote responsibility and feelings of self-worth as well as independence.

B. Animal Welfare

It is evident that the safety of one's patient should have the highest priority. Nevertheless, the therapist should and must consider the safety and welfare of all the animals used in therapeutic practice. To help identify principles for animal safety and welfare, the author has elected to incorporate some of the guidelines that were identified in the Appendix of a chapter written on ethical concerns by James Serpell, Raymond Coppinger, and Aubrey Fine.

The following briefly identify the concerns noted:

1. All animals must be kept free from abuse, discomfort, and distress.
2. Proper health care for the animal must be provided at all times.
3. All animals should have a quiet place where they can have time away from their work activities.
4. Interactions with clients must be structured so as to maintain the animal's capacity to serve as a useful therapeutic agent.
5. Situations of abuse or stress for a therapy animal should never be allowed.
6. As an animal ages, his or her schedule for therapeutic involvement will have to be curtailed. Accommodations and plans must be considered. The transition into retirement may be emotionally difficult for the animal as well. Attention must also be given to this dimension.

V. SUMMARY

Animal-assisted therapy and AAA represent two dynamic approaches that may become valuable therapeutic strategies in the treatment of children and adults (in individual and group therapy, in both outpatient and institutional settings). Although there still exist limitations in investigating the efficacy of this treatment as well as understanding best practice strategies, practitioners should become more open-minded to the potential contributions animals may make to the physical and mental wellness of humans. Introduction of animals into a therapeutic environment may provide a calming effect that contributes to the therapeutic outcome. When animals are introduced with a well-thought-out plan, clinicians will not be disappointed with the outcome. Although not a panacea, the impact of the human animal bond should not be underestimated as a positive therapeutic alternative.

See Also the Following Articles

Alternatives to Psychotherapy ■ Bioethics ■ Parent–Child Interaction Therapy ■ Therapeutic Storytelling with Children and Adolescents

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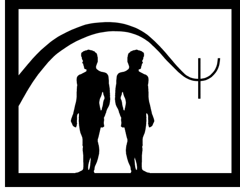

Anxiety Disorders: Brief Intensive Group Cognitive Behavior Therapy

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I. Development and Description of Treatment
II. Theoretical Bases
III. Empirical Studies
IV. Summary
Further Reading

GLOSSARY

brief intensive group cognitive behavior therapy (BIGCBT) A version of cognitive behavior therapy conducted in full-day sessions over a short time period (e.g., 3 consecutive days).

Brief intensive group cognitive behavior therapy (BIGCBT) is a version of cognitive behavior therapy conducted in full-day sessions over a short time period, for example, 3 consecutive days. This article presents the theoretical underpinnings and applications of BIGCBT, and a review of empirical studies showing the effectiveness of a BIGCBT program for outpatients with panic disorder with or without agoraphobia.

I. DEVELOPMENT AND DESCRIPTION OF TREATMENT

Modern psychotherapy has its roots in Europe, and it was not until after the Second World War that the United States began to lead this field. During this period, psychotherapy flourished and grew at an enormous rate. Behavior therapy, and later cognitive behavior therapy (CBT), led the earlier growth and in 1974 when Michael Mahoney published his first book in cognitive behavior therapy, the term CBT became entrenched.

Accumulated empirical evidence shows that CBT is efficacious for the treatment of many psychological and psychiatric disorders, ranging from anxiety, to eating disorders and the psychoses. For many patients, it can be argued that CBT is the treatment of choice for these disorders. At the turn of the new millenium, CBT was generally accepted as an evidence-based psychotherapy that has benefited many people with mental health problems.

Although CBT can be delivered in individual or group settings, it is individual CBT that has received the most research and thus provides the most clear-cut support for its efficacy. The application of CBT to group work has a much later history than individual CBT, and accordingly the evidence-based research is not nearly

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TABLE 1
A Sample of the Brief Intensive Group CBT Program for Panic Disorder with and without Agoraphobia

Time	*Day 1*	*Day 2*	*Day 3*
08:00	Registration		
09:00	Introduction to anxiety and phobias	Group cognitive behavior therapy	Drug therapy
10:30	Morning break	Morning break	Morning break
11:00	Anxiety and panic control	Breathing control control	Cognitive
12:30	Lunch	Lunch	Lunch
13:15	Planning	Planning	Planning
13:45	Relaxation	Relaxation	Relaxation
14:00	Exposure	Exposure	Exposure
16:00–17:00	Group work/consultation	Feedback	Positive thinking/ self-help. Closing.

Note: Adapted from Weir (2000). Health outcome of brief intensive group cognitive behavior therapy for anxiety disorders. Doctoral dissertation, University of Queensland, Brisbane, Australia.

as comprehensive. Since the success of individual and group CBT, researchers and clinicians have experimented with the delivery format of CBT. The format has ranged from brief to extended CBT. Brief CBT treatments comprise from one to four sessions, with a 1-hr session per week, while extended CBT treatments range from 30 to 52 weekly 1-hr sessions. The average length of time for individual CBT is about 10 weekly sessions, and the average length of group CBT is a weekly 2-hr session for 12 sessions. More recent, we introduced a BIGCBT intervention and demonstrated that it has efficacy in the treatment of anxiety and mood disorders.

The BIGCBT is delivered over 3 consecutive days, with an attendance of 8 hrs per day. Psychiatrist Larry Evans and psychologist Bevan Wiltshire initially started the BIGCBT in the early 1980s for the treatment of patients with anxiety disorders, in particular panic disorder with agoraphobia. In 1984, a group of psychologists, Tian Oei, Justin Kenardy, and Derek Weir, joined the group and further developed and evaluated the treatment package.

The BIGCBT was developed with the following principles in mind:

1. Self-help: We wanted patients to take an active role in the management of their disorders. We strongly encouraged them to do so by providing a rationale, actively teaching them self-help skills and encouraging them to experiment with solutions to their problems.

2. Problem versus sickness: We informed patients that to view their problems as a sickness did not promote their active role in the management of the problems, but could in fact hinder it.

3. Control versus cure: We emphasized that the main aim was for patients to take control of their anxiety and fear rather than to attempt to cure it forever. Being cured is a passive process that depends on someone doing something to you, whereas gaining control is an active process. We explained that control was a realistic and attainable goal. Gaining control of anxiety and fear would enable patients to take charge and learn how to help themselves. In addition to learning what techniques to use and how to use them, patients also need to understand why they are using these techniques.

BIGCBT was delivered in a group format with the aim of making the program more cost effective. Referrals were made by the patients' medical officers. Group sizes averaged 8 participants. The group format provided a structured setting in which to learn the skills delivered by the program. It also provided social support, and a more socially relevant context for behavioral and attitudinal change and reinforcement than would an individual CBT context.

A team of experienced clinicians delivered BIGCBT, including psychiatrists, psychologists, and nurses. It was ensured that all clinicians had a good grounding of CBT and had observed the whole BIGCBT program before taking responsibility for the delivery of group sessions.

No one clinician delivered the entire BIGCBT program. Clinicians were allocated to a session or sessions of the BIGCBT program based on interest, knowledge, and time availability.

An example of the 3-day program with the contents of each session is presented in Table 1. There were three blocks of exposure sessions, taken by at least two clinicians. When group membership was greater than eight, three or more clinicians were used. Fellow clinicians were encouraged to "sit in on" other sessions in order to provide feedback and peer support to the therapist. The participation of Dr. Evans in every program provided stability, consistency, and quality assurance for the program.

II. THEORETICAL BASES

The theoretical basis of the BIGCBT was derived from the cognitive behavioral framework and encompassed the elements of clinical assessment and diagnosis, psychoeducation of cognitive and behavioral skill components, exposure, relaxation training, and homework assignments. The Quality Assurance Project of the Royal Australian and New Zealand College of Psychiatrists treatment guidelines also contributed to the design of the BIGCBT.

III. EMPIRICAL STUDIES

BIGCBT was run at a community outpatient clinic. Therefore, evaluation of the intervention used an effectiveness approach rather than an efficacy approach. Oei and colleagues' previous publications address a diversity of topics, including the development of new instruments to measure catastrophic cognitions; the validation of outcome measures such as the fear questionnaire (FQ); psychopathology of panic attacks and panic disorders; and treatment effectiveness. In 1991, Evans, Craig Holt, and Oei reported the first long-term follow-up data using the BIGCBT. They found that at posttreatment, BIGCBT was significantly better than the no treatment waiting-list control on the outcome measures of the FQ and the fear survey schedule (FSS). However, there was no difference in the scores for the Maudsley personality inventory (MPI) and the hostility and direction of hostility questionnaire (HDHQ), suggesting that neither of these personality variables was affected by the BIGCBT treatment. One-year follow-up results showed that treatment gains were maintained. Clinical interview data confirmed the FQ and FSS self-report data by demonstrating that at one year follow-up, 85% of the patients treated with BIGCBT were either symptom free or had significant symptom reduction. The finding that personality variables were not changed by the BIGCBT treatment was supported by a study by Clair, Oei, and Evans in 1992, using the same measures with the addition of the Fundamental Interpersonal Relations Orientation-Behavior Scale (FIRO-B). This 1992 study showed that personality variables derived from the previously mentioned three instruments were no different between patients who responded and did not respond to the BIGCBT treatment. Similar to previous findings, personality characteristics did not predict treatment outcome.

A study by Weir in 2000, supervised by Evans and Oei, compared 71 waiting-list control patients with 206 patients with anxiety disorders, on clinical and functional outcome measures. Clinical outcome measures used were self-report scales such as FQ, MPI, FSS, the State Trait Anxiety Inventory (STAI) and the HDHQ. Clinician-rated measures such as Hamilton Anxiety Rating Scale (HAM-A) and Hamilton Depression Rating Scale (HAM-D) were also used. The functional outcome measures were the Medical Outcome Study Short Form Health Survey (SF 36), the Quality of Life Inventory (QOLI) and the Health Schedule Utilization (HSU). Pre- to posttreatment comparison between the BIGCBT and control groups showed that the BIGCBT group made significant improvements when compared to the control group, on all the clinical outcome measures. The reported effect sizes for the BIGCBT group ranged from large (HAM-A = 1.24; HAM-D = .99) to small (STAI = .22). There was a small but significant effect size for the change in MPI and HDHQ scores. This personality change was not consistent with the earlier studies.

An important part of Weir's study is that it reported on 6-year follow-up results. The results showed that the treatment gains made by BIGCBT patients were maintained over the long term. The findings also showed that most of the gains were made at posttreatment, and that the length of time of follow-up (ranging from 1 to 6 years) did not improve the posttreatment gains.

The most interesting finding from the Weir study was in regard to the functional outcome measures. The results from the SF-36 showed that up to 6 years after the BIGCBT treatment, the SF-36 profiles of the treated group were almost the same as those of the general population, and much better than the SF-36 profiles of people with anxiety disorder problems in the national survey. This implies that long after treatment, the patients with anxiety disorder who were treated with the

BIGCBT can expect to have almost the same general health perception as the general population. This finding was complemented by the results of the QOLI that indicated that patients treated with BIGCBT were relatively free of psychological distress and had a more realistic expectation of their living conditions.

The long-term effectiveness of BIGCBT was also reported in a 1997 study conducted by Oei and Evans with Michael Llamas. This study investigated the possible impact of concurrent medication use on the long-term outcome of BIGCBT for panic disorder with or without agoraphobia. The researchers found that preexisting medication (antianxiety, antidepressant, or a combination of these) did not significantly enhance or detract from the long-term outcome of the BIGCBT program.

The BIGCBT has also been applied to the treatment of patients with comorbid alcohol use disorder and panic disorder with or without agoraphobia. The 2000 report by Bialkowska, supervised by Oei and Evans, documented that concurrent addition of the BIGCBT for panic disorder to the standard hospital treatment for alcohol abuse produced better clinical outcomes than the standard hospital treatment and a placebo treatment. It was found that BIGCBT had an impact on self-reported anxiety but not on alcohol outcome measures.

IV. SUMMARY

There is enough evidence to suggest that the BIGCBT is an effective treatment for anxiety disorders, in particular for panic disorder with and without agoraphobia. The exact mechanism for the effectiveness of this treatment is still unknown. Furthermore, the effectiveness of the BIGCBT is demonstrated by a single group of researchers in one place and needs to be replicated by different researchers and in different locations before anything more substantial can be said about the general clinical utility of the BIGCBT. What can be said with some degree of confidence, however, is that our findings add to the robustness of the delivery of CBT in the treatment of psychological disorders.

See Also the Following Articles

Cognitive Behavior Therapy ■ Cognitive Behavior Group Therapy ■ Panic Disorder and Agoraphobia

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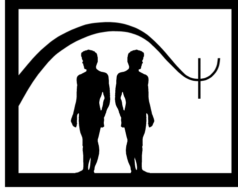

Anxiety Management Training

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I. Description of Treatment
II. Case Illustration
III. Theoretical Basis
IV. Applications and Exclusions
V. Empirical Studies
VI. Summary
Further Reading

GLOSSARY

AMT Acronym for anxiety management training.

anxiety management training A self-control intervention using relaxation as a coping skill to prevent or reduce anxiety arousal.

anxiety scene A concrete event from the client's actual experience associated with anxiety being aroused.

biofeedback Methods for relaxation training that employ equipment to monitor and provide feedback on physiological responses, such as changes in muscle tension or finger temperature.

early warning signs Internal cues such as tension in shoulders, upset stomach, or specific thoughts that indicate the onset or early stages of anxiety arousal. AMT trains clients to attend to these cues and initiate relaxation coping skills to abort anxiety or stress arousal.

progressive or deep muscle relaxation A method of relaxation training that has clients systematically tense and release the muscles of the body.

relaxation scene A concrete event from the client's actual experience that is associated with being relaxed.

relaxation training The process of developing a basic relaxation response, usually done through biofeedback or deep muscle relaxation.

I. DESCRIPTION OF TREATMENT

Anxiety management training (AMT) typically takes six to eight sessions after an assessment suggests that a self-managed relaxation approach is appropriate. It may take a few sessions longer if other emotions (e.g., anger) or psychophysiological disorders (e.g., tension or migraine headaches) are added to anxiety treatment goals. AMT can be conducted with individuals or in small groups.

The core characteristics of AMT include guided imagery, anxiety arousal, application of relaxation for self-managed anxiety reduction, and transfer of relaxation coping skills to the external environment. Guided imagery involves the introduction of relaxation imagery to strengthen the relaxation response, and it also includes anxiety imagery to precipitate anxiety arousal. Anxiety is precipitated during sessions in order to provide clients with the opportunity to become more aware of their anxiety arousal and to identify the early warning cues and employ relaxation that will reduce the actual experiences of anxiety. Thus, clients first practice controlling anxiety in the safe setting of therapy prior to real-life applications for anxiety reduction. As clients gain in self-control of anxiety over the course of AMT, the anxiety-arousing capacity of anxiety scenes is increased and the degree of therapist assistance in relaxation retrieval is decreased. Homework assignments to apply relaxation in specific situations and at any time anxiety is experienced are used to ensure the transfer of skills to in vivo application.

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AMT is easily adapted to other distressing emotions and to physiological conditions associated with stress. For example, in applying AMT to anger, the training procedures remain the same, but the content of the scenes and homework focus on these emotions rather than on anxiety. In adapting AMT to tension headaches, stress-inducing scenes may be broader than anxiety, for other emotions may trigger tension headaches. Clients can also identify the early warning signs of headaches and apply relaxation skills when these cues are perceived.

A. Session 1

Session 1 is devoted primarily to deep muscle relaxation, whereby muscles are first tensed and then relaxed. An emphasis on awareness of tension is added by instructing clients to pay attention to feelings of muscle tension and to notice the contrast between the tensed and relaxed sensations. For most clients identifying a relaxation scene is useful for furthering control of relaxation. Such a scene should be a real-life event involving a specific relaxing moment from the client's life. The client and therapist develop this scene prior to initiating progressive relaxation. After deep muscle relaxation, the client is instructed to visualize the relaxation scene and to permit that experience to further increase the relaxation level. Progressive relaxation and relaxation scene visualization typically take about 30 minutes. Homework involves daily practice of progressive relaxation, self-monitoring and recording anxiety arousal, and the identification of one or two moderate anxiety scenes to be used in the next session.

B. Session 2

This session involves the development of an anxiety scene, inducing relaxation, and one or more trials of anxiety arousal followed by relaxation retrieval. The anxiety scene should be a real experience that elicits a moderately high level of anxiety (about 60 on a scale where 100 is extreme anxiety). Following determination of an anxiety scene, relaxation is introduced. Typically, clients will be able to become relaxed not by tensing muscles, by simply focusing on and relaxing each muscle group. When the client is relaxed, anxiety arousal is initiated through the therapist's instructions to switch on the anxiety scene, to use the scene to reexperience anxiety, and to signal the onset of this anxiety. The therapist includes both scene-setting and anxiety-arousal details from the scene and uses appropriate voice emphasis (e.g., volume and tone) to aid in anxiety arousal. After about 10 to 15 seconds of anxiety exposure—that is, after the client signals anxiety—the anxiety scene is terminated, and the therapist reintroduces relaxation, first by visualization of the relaxation scene and then by a review of the muscles without tension. As time allows, this process is repeated, with the anxiety exposure interval lengthened to 20 to 30 seconds. Homework involves continued self-monitoring of anxiety, daily practice of relaxation without tension, and application of relaxation in nonstressful situations.

C. Session 3

This session follows the steps outlined in Session 2, with two major additions. Self-initiated relaxation and attention to the anxiety-arousal symptoms are prompted, so that clients can identify personal signs associated with anxiety. These might involve symptoms such as clenched fists, heightened respiration, feelings of panic, thoughts of self-doubt, images of great inadequacy, and the like. By training clients in becoming aware of the signs of anxiety and using their presence to initiate relaxation, AMT teaches clients not only how to reduce anxiety when it is experienced, but also to identify the early anxiety cues in order to prevent further anxiety buildup.

By this session the client should be able to achieve a relaxated state in a brief time, typically in one to three minutes. After the client has relaxed, the therapist initiates anxiety arousal by having the client visualize the 60-level scene. When the client signals anxiety, the therapist introduces the new instructions for attending to anxiety symptoms: "Pay attention to how you experience anxiety; perhaps it is in your body signs such as tension in your neck muscles, tightness across your stomach, or your heart rate or maybe in some of your thoughts." After about 30 seconds of anxiety arousal, relaxation is retrieved, with the therapist guiding the client through muscle reviews, relaxation imagery, or deep breathing-based relaxation. This process is repeated, usually three to five times, until the end of the session. Homework involves identifying a 90-level scene for the next session and using relaxation coping skills to control anxiety wherever it is experienced. Efforts are recorded in the self-monitoring log.

D. Session 4

In this session, a 90-level scene is developed. Use of the 90-level scene provides the client with the opportunity to cope with high levels of anxiety arousal. In addition, the client starts to assume more responsibility for controlling anxiety. Instead of the therapist terminating the anxiety scene and reinitiating relaxation, the

client initiates relaxation by using the relaxation scene, a muscle review, deep breathing-cued relaxation, or whatever method personally works best. The 60- and 90-level scenes are alternated to provide practice in anxiety management. Homework involves the self-monitoring of early warning signs of anxiety and the immediate application of relaxation to abort arousal any time anxiety is experienced. Clients are alerted to do this any time they encounter situations known to be anxiety arousing. Clients are also encouraged to routinely monitor anxiety signs four times a day (i.e., once in the morning, midday, afternoon, and evening). All efforts to monitor anxiety signs and apply relaxation are recorded in the client's self-monitoring log.

E. Session 5

In Session 5, the 60-level scene is often dropped and replaced with a higher level anxiety scene. This session also completes the fading out of therapist control and the completion of client self-control. Following client self-initiated relaxation, the therapist switches on the anxiety scene, but all activities from that point on are client-controlled. While in the anxiety scene the client initiates relaxation to deactivate arousal and decides when to terminate the scene. After signaling the therapist that this has occurred, the therapist readies the client for another scene and the process is repeated. Homework is the same as suggested in Session 4.

F. Sessions 6–8

With the exception of the introduction of new high level anxiety scenes, the same format used in Session 5 is used in Sessions 6–8. Moreover, application to other sources of distress is also encouraged. Length of time between sessions may be increased in order to provide more opportunities for application and to facilitate transfer and maintenance. Plans for maintenance and relapse prevention are discussed during these sessions as well. When self-control of anxiety is established, usually by Session 8 termination is initiated, or AMT is integrated with other interventions. Booster sessions may sometimes be employed prior to clients confronting future events to facilitate relapse prevention.

II. CASE ILLUSTRATION

Patient Characteristics. This case illustrates the basic AMT approach, with some modifications for the characteristics of the specific client. Jane, a 37-year-old married mother of two teenagers, worked as a project manager for a computer company. She was diagnosed with generalized anxiety disorder (GAD). She also sought help regarding tension headaches and problems involving experiencing anger while driving. During intake, she reported being anxious and tense most of the time. Anxious feelings were marked by a general sense of unease and foreboding and by heightened general physiological arousal and agitation, a feeling of being jumpy and on edge, marked tension in the neck, shoulders, forehead, and hands, and a knot in her stomach, sometimes accompanied by nausea and stomach upset. She reported that the anxiety seemed to accumulate during the day, becoming worse in the afternoon and evening. She also reported moderately severe tension headaches on a nearly daily basis, headaches that were related to her chronic anxiety. In the past, her physician had prescribed benzodiazapines for this anxiety, and she currently took Valium approximately three times a week. She reported frequent periods of "stewing" (unrealistic worry) needlessly about several topics: (1) work performance (e.g., that she would fail and be fired, even though she had good to excellent performance reviews for several years; or that projects would not be completed or would be totally inadequate, even though this had not happened in the past); (2) the health and safety of her husband and children (e.g., continued preoccupation with a mole on her husband's neck, even though it had been checked by his family physician and a dermatologist; and frequent images that her husband or children had been killed or hurt in a car accident); and (3) finances (e.g., being worried that they would not be able to send their children to college, even though she and her husband had good, secure jobs). She indicated that the worry and anxiety led to such great weariness and fatigue that she often went to bed early or watched television to escape the anxiety, worry, and headaches. She also experienced frequent intense episodes of anger in her 40-minute commute to and from work. She indicated that this anger carried over into and influenced her work negatively and was another source of stress that contributed to her fatigue and headaches.

She was seen for two sessions for assessment involving interviewing, self-monitoring anxiety and tension headaches, and completion of psychometric instruments. AMT sessions are described next and are numbered to follow the outline presented earlier.

Initial portions of AMT Session 1 involved the therapist presenting the rationale for using AMT in the following way:

Rationale: Jane, it seems like the primary issues are the cycles of worrying and anxiety where you get tense

all over, especially in the neck, shoulders, and stomach. This only gets worse when you're angry and stressed when driving. All this seems to trigger the headaches and makes you worn out in the evening so that you just duck out by going to bed early or watching a lot of TV. You also indicated that you do much better when you relax, but most of that is by watching TV or sleeping off the stress, and you want to have better ways to relax and cope. Is that how it seems to you? (She responds affirmatively.) I think there are some ways we can do that and would like to describe them and see what you think. The first step is to help you learn how to really relax. If we agree, I will show you how to do this later in today's session. In the beginning, it will take you 20 to 30 minutes, but with practice you'll be able to do it much faster. Once you can relax yourself well, we'll develop several quick ways for you to relax whenever, wherever you start feeling anxious. The second step is to help you become more aware of when tension is coming on so that you can pay attention to those thoughts and feelings and initiate the relaxation skills. We've already started some of this when we had you keep track of your feelings in your diary (referring to self-monitoring log). The third step will really give you lots of practice in identifying the feelings of anxiety and relaxing away the tension so that you can have that "calm, clear-headed feeling" you like. We'll do this in the following ways. In the sessions, I will have you visualize situations that have made you anxious in the past, like a week ago when you were anxious about presenting your report at the project manager's meeting. Then, we will initiate relaxation and help you calm down and be relaxed again. We will do this over and over so that you get really good at recognizing anxiety and calming down by relaxing. Initially, we will start with moderate anxiety, but as you get better at relaxing away the tension, we'll increase the anxiety level, and have you take more and more control over the relaxation. You'll also practice the relaxation to cope with the worry and anxiety in real life. You'll write about those experiences in your diary, and we'll go over them each session. We'll also want to help you use the relaxation to abort those nasty headaches you get, and maybe on the anger you get when driving. Being able to relax should also help with that stewing or worrying you do. You indicated that when you are calm, you think things through pretty well, but not when you are uptight. The procedures I was describing should help you calm down and think things through calmly because you will be able to relax and calm yourself. This will take a lot of work on both our parts, but if we both do our jobs, I think that we can develop these skills to relax whenever you are worried and tense in about 7 to 10 sessions. How does this sound to you?

The remainder of the session was spent developing a relaxation scene (see as follows), initiating progressive relaxation training, and presenting the relaxation scene twice. Homework included self-monitoring worry and anxiety and daily relaxation practice.

Relaxation Scene: It is last August when you were lying on that big rock out in the middle of the river near your favorite camping spot. It was about 3:30 in the afternoon, and you are there alone and can only hear the sound of the road off in the distant (general scene setting details). You are lying there on your back, looking up at the sky, the brilliant blue cloudless sky. The canyon is pretty steep on both sides, so the sky is framed in the gray of the rocks and green of the pine trees as you look up (more specific visual detail). You can hear the breeze rustling through the pines and hear the river gently gurgling as it flows over the rocks below you (auditory detail). The air is warm, but not hot and has that wonderful "early fall smell" you love so much (temperature and olfactory detail). You are warm, but not hot, feeling like the sun has soaked through you, that wonderful feeling like you have melted right into the rock (temperature, emotional, and kinesthetic detail). You are very peaceful, totally relaxed, and worry free, thinking that there is no place you would rather be. Feeling calm and clear headed. The colors and life seem clear and vibrant. Warm, relaxed, without worry, molded into that big rock in the river (cognitive and affective detail).

Session 2 involved a review of homework, the development of a moderate anxiety scene (i.e., approximately 60 on a 100-point scale), further relaxation training, anxiety arousal/relaxation coping, and assignment of homework. Relaxation training included practice with three new relaxation coping skills introduced for this client: (1) relaxation without tension (review of the muscles without tensing them); (2) breathing cued relaxation (taking three to five slow, deep breaths, relaxing more on each breath out); and (3) cue-controlled relaxation (pairing slow repetitions of the phrase "calm control" with relaxation). Focus was then directed to identifying an anxiety scene. The anxiety scene at the 70-level was as follows:

Anxiety Scene: It was Friday evening, three weeks ago. You were home alone as Jim (husband) and the kids had gone to the movies (scene-setting detail). It had been a tough day at work, and once again, you were frazzled and tired and avoided more stress by stay-

ing home (general emotional detail), sitting on the couch trying to zone out and watch TV, but couldn't stop thinking about work. You know it's stupid because you were well ahead of schedule, but kept thinking about how far behind you were and how much you had to do. You kept worrying that it was all going to fail and be your fault, how they were going to find out how incompetent you are. Also, you were worrying about Jim and the kids. He said they might get a bite to eat and catch the late movie, but you were worrying that they had been in an accident. You were a mess and couldn't stop thinking about all of this stuff (cognitive detail). You had that anxious-all-over feeling, like you couldn't sit still, all wound up, but no place to go. That sense of doom and bad things happening just sort of hung on you. Your shoulders were hard as rocks, stomach was churning away, and your head just kept turning over all the problems at work. You had another of those terrible headaches. That dull constant ache in the back was really wearing on you (emotional and physiological detail).

After the details of the anxiety scene were confirmed, relaxation was initiated through therapist-directed relaxation without tension. After the client signaled being relaxed, the anxiety scene was introduced, and relaxation was practiced (see sample instructions below).

Anxiety Scene Introduction: In a moment, we are going to have you practice reducing your anxiety. I will ask you to imagine the anxiety scene involving being home alone worrying about work and the kids. When I do, I want you to put yourself into that scene. Really be there and experience that worry and anxiety. As we discussed earlier, signal me when you are feeling anxious by raising your index finger. After a few seconds of being anxious, I will ask you to erase that scene and will help you retrieve that relaxed clear-headed feeling. When you are relaxed signal me again. So right now, put your self into this scene … (therapist describes the anxiety scene using voice inflection to increase attention to and the experience of anxiety) … After 20 seconds, the client signals … Ok, I see your signal. Now continue to pay attention to that anxiety. Let it build and pay attention to how you're feeling it … maybe in the neck and shoulders … maybe across the stomach area … let it build and notice it … really worry and be anxious about work … (after 25 seconds) … Ok, now erase that scene from your mind and once again switch back on your relaxation scene. You're there on the rock, relaxed and warm. Signal me when you are relaxed again … (When the client signaled, this was followed by relaxation without tension.)

This process was repeated five times. Two relaxation coping skills were employed with each repetition. Homework involved self-monitoring, daily practice of progressive relaxation, and practice of relaxation coping skills at least once per day in nonstressful conditions (e.g., waiting for a friend for lunch).

Sessions 3 and 4 followed the format of Session 2, except that the client relaxed herself by "whatever method works best for you" prior to rehearsal of relaxation in response to anxiety scenes. An additional 60-level scene was added, and scenes were alternated during the session. During anxiety scene arousal, Jane was asked to pay attention to the signs associated with her experience of anxiety; these turned out to be tension in the neck and shoulders and clenching of the hands. Homework involved continued daily practice of relaxation without tension, application of relaxation coping skills whenever anxious, but with the caveat not to expect success every time, and continued self-monitoring of anxiety with the addition of recording applications of relaxation coping skills. The client was also instructed to identify two anxiety/worry scenes at approximately the 70-level.

By the beginning of Session 5, the client was showing some successful in vivo applications, having been able to partially reduce tension and anxiety on several occasions (i.e., she was able to lower her anxiety levels by 30 to 40 units, although she could not yet completely eliminate anxiety). Session 5 included two changes. First, two 70-level scenes were developed and alternated. Second, increased client self-control was fostered by having the therapist terminate the anxiety scene after a period of anxiety arousal, but having the client relax away the tension and signal the therapist when relaxation was achieved. For homework, in order to decrease the building stress and anxiety that appeared to trigger tension headaches, the client agreed to scan herself for cues of tension and to self-initiate a three-minute period of relaxation at the following times—in her car before she entered work, midmorning, after lunch, midafternoon, in her car before starting home, and at least once during the evening. She was also asked to apply relaxation coping skills any time she experienced any negative emotional arousal.

Sessions 6–9 followed a similar format. However, the anxiety level of the scenes increased to a 90-level as this was as anxious as the client felt when worried and anxious. Two driving anger scenes (see the following example) were also added to Sessions 7–9 to address her anger when driving. Instructions during rehearsal shifted to full client self-control. The therapist initiated

the visualization of the anxiety scene. The client signaled the experience of anxiety by raising her finger but kept her finger up. She then continued to visualize the scene and initiated relaxation coping skills, signaling by lowering her finger when she was relaxed. At that point, the therapist cleared the anxiety scene and instructed her to pay attention to her sense of control over the anxiety and her self-efficacy at anxiety management. Finally, to provide greater opportunities for in vivo practice and to initiate a transition to maintenance and relapse prevention, the time interval between Sessions 7, 8, and 9 was lengthened to two weeks.

Anger Scene: It was about two weeks ago. You were in the left lane on the two lane freeway ramp. You were following a woman driver in a blue Dodge with Nebraska plates. As the light change, the woman in front of you accelerated and swerved into the right lane in front of a large dump truck. The truck nearly hit her and blasted her with his horn. She then swerved back into your lane, nearly hitting you (setting detail). Instantly, you were angry, really pissed. Your hands were clenched around the wheel, shoulders knotted, stomach churning, and you had that hot flush come across your chest and into your neck and face (emotional and physiological detail). You were thinking, “Crazy bitch! She’s going to get us all killed! Where the hell did she learn to drive, at some kind of destruction derby? I ought to run her off the road and save us all a lot of trouble (cognitive detail).”

Termination. The client had been demonstrating good anxiety management. She reduced significantly the frequency and intensity of worry/anxiety periods per day, reduced headache frequency from almost daily occurrences to approximately one per week with an intensity of a 3 on a 10-point scale, down from an intensity of 7 prior to therapy, and reported lessened anger while driving. A staggered termination was undertaken in order to facilitate maintenance and relapse prevention. Booster sessions were scheduled at one- and four-month post-therapy intervals, and continued self-monitoring and application of relaxation coping skills were underscored as the cornerstones of maintaining gains. The client contracted to continue self-monitoring and AMT application through at least the next four months. She developed a written contract and agreed to set aside $1 per day toward the purchase of new clothes for every day she managed her anxiety and stress as well as an additional $5 for a week in which she did so every day. The client mailed in her self-monitoring logs every two weeks. These were followed by therapist phone calls to support gains and troubleshoot issues. Termination was achieved at four-month followup, although the client was seen for two additional booster sessions when her daughter became ill, and the client began worrying about potential health complications.

III. THEORETICAL BASIS

AMT was developed in 1971 as a solution to the inappropriateness of desensitization for dealing with what is now called generalized anxiety disorder (GAD). Desensitization is effective for phobias but requires the identification of the stimuli precipitating the anxiety response. In GAD, clients experience a more chronic, generalized state of anxiety, and the external cues eliciting anxiety cannot be identified so precisely. Desensitization was, therefore, not applicable, and alternative interventions were needed.

AMT is based on Richard Suinn’s suggestion that clients can be taught to identify the internal signs, both cognitive and physical, that signal the presence of anxiety and to react to those signs by engaging in responses that remove them. This formulation was based on learning theory that conceptualized anxiety as a drive state and postulated that behaviors could be learned to eliminate the drive. Anxiety was viewed as having both response and stimulus properties. It was a response to prior internal and/or external anxiety-arousing stimuli. Its stimulus properties involve the potential to elicit new responses such as avoidance and escape. As such, it was argued that anxiety’s stimulus properties could become associated with new responses, such as coping responses. AMT, therefore, does not require clients to identify the stimuli that precipitate their anxieties. Instead, the experience of anxiety itself is used to train the client in coping. The goal is to provide the client with a relaxation coping skill with which to deactivate anxiety once it occurs and to train the client in recognizing and using arousal as the cue to initiate that coping skill. In theoretical terms, AMT trains clients in responding to the response-produced cues of anxiety with relaxation, leading to the development of a new self-managed coping habit pattern.

Although some AMT procedures may appear similar to other behavior therapy methods using relaxation, there are several distinguishing characteristics of AMT. AMT initiates anxiety arousal during sessions rather than minimizing it as in desensitization. The goal of arousal is not extinction, but the opportunity to attend to the internal cues of anxiety arousal and to practice relaxation for

anxiety reduction. AMT uses homework to ensure transfer of training. Homework requires that clients apply relaxation coping skills in vivo. This practice ensures that skills acquired in therapy are transferred to real-life situations outside of treatment. Self-control is also emphasized. AMT actively fosters self-management by gradually requiring clients to assume more and more responsibility. Early in treatment therapists provide a great deal of control over both anxiety arousal and relaxation retrieval. However, clients gradually assume these responsibilities. Therapeutic instructions, fading of therapist control, and homework assignment help clients develop skills that increase their ability to control their anxiety. Because of the self-control element, AMT often leads to increased self-efficacy.

IV. APPLICATIONS AND EXCLUSIONS

Applications—Group AMT. AMT may be employed with individuals or groups. Groups can be relatively similar in their source of anxiety (e.g., groups of social phobics) or quite heterogeneous with widely differing sources of anxiety and stress. Group size should probably be limited to about eight. Research suggests that groups of over 25 are ineffective.

Group AMT requires several modifications from individual AMT. Therapy session duration should be extended by 20 to 30 minutes per session in order to attend to the increased number of clients and their various issues. If the treatment session cannot be lengthened, then the number of sessions should be lengthened to accommodate clients. Although individual AMT uses homework to develop both relaxation and anxiety scenes, this is particularly important in groups, if time is to be used efficiently. That is, clients must come to the early sessions with proposed scenes outlined in detail, so that group discussion time is saved for shaping up or crystallizing scene content. Since scene content varies across clients in group AMT, the therapist cannot provide detailed descriptions of the scene in order to stimulate visualization and anxiety arousal.

Group clients are asked to bring two scenes to each session, which are labeled “anxiety scene 1” and “anxiety scene 2.” Anxiety is elicited by giving the general instruction for clients to visualize “your first” or “your second anxiety scene.” Scenes are alternated by referring to the first or second anxiety scene, and clients are instructed that if one scene is not eliciting anxiety they are to continue to visualize the one that does. Exposure length is also difficult to standardize during group sessions because clients might signal anxiety after different intervals of visualization. Therefore, in the initial sessions, the anxiety scenes should be visualized for 30 to 60 seconds, with timing started after approximately half of the group has signaled anxiety. In group applications, it is likely that clients will report various other sources of emotional distress (e.g., anger, guilt, embarrassment, depression, etc.). Therefore, it is important to make sure that clients apply relaxation to all sources of emotional distress. Often the final two to three sessions are used to focus on other emotionally distressing scenes in order to provide clients with in-session practice in dealing with such emotional issues.

Applications—Anxiety Conditions. Originally, AMT was developed and evaluated for use with chronically stressed and anxious individuals and for GAD. Over the years, there has been empirical support for its use with other anxiety conditions such as panic disorder, PTSD, simple and social phobias, multiple sources of anxiety and stress (e.g., an individual who is dealing with both work- and heath-related stress), generally anxious and stressed medical outpatients, and anxiety- or stress-related health issues such as Type A behavior, tension headaches, diabetes, dysmenorrhea, and essential hypertension. AMT has also proven helpful to individuals who experience performance-related anxiety (e.g., anxiety that interferes with athletic performance, public speaking, or music recitals), even if the anxiety level is not sufficient to be diagnosed a phobic disorder. AMT has also been adapted to high general anger and situation-specific angers such as anger while driving.

Applications—Integration with Other Interventions. The coping skills in AMT can serve as one treatment component in complex treatment plans. For example, depressive disorders are often mixed with anxiety, tension, and worry. In such cases, a treatment plan could rely on AMT to address anxiety and could be followed by other psychological and biological interventions for the depressive disorder. Some studies using AMT to treat anxiety report that depression also declined. Possible reasons include the tendency for anxiety and depression to be correlated, or the reduction of depression due to the increase in efficacy from AMT.

AMT is easily included as an element of other psychological interventions. For example, AMT-like interventions have been successfully combined with cognitive restructuring in the treatment of GAD, panic disorder, social phobia, Type A behavior, and anger.

AMT has also been effectively combined with cognitive and behavioral interventions in the treatment of vocationally anxious individuals.

AMT may be used as an initial step to enable clients to respond to other psychotherapeutic interventions. For example, AMT might be used with a sexually abused client. Providing anxiety management skills may facilitate clients' ability to discuss and confront emotionally charged topics. Another potential application of AMT is in prevention or simply as a general coping skill for daily life stresses.

In summary, AMT can be a valuable part of an overall treatment plan. In integrated interventions it is suggested that AMT be implemented as the first step. It helps the client achieve anxiety reduction skills while at the same time building the therapeutic relationship and alliance. It can also reduce resistance to confronting anxiety-related therapeutic content, content that might be essential for other psychotherapeutic interventions. Since a side benefit of AMT is an increase in self-efficacy, possibly due to the self-control that is achieved, clients might feel more confident when facing other personal-emotional problem areas.

Exclusions and Contraindications. Few contraindications for AMT have been identified. The AMT model suggests several treatment considerations. AMT is an intervention that requires clients who have the cognitive-attentional processes and motivation necessary for performing its procedures. Clients must be able to follow instructions, develop and maintain anxiety imagery, and follow through on homework assignments. Individuals who cannot or are unwilling to engage in these activities are not good candidates for AMT. For example, a small number of individuals have great difficulty in visualizing events. An alternative intervention is required such as in vivo presentation of anxiety-arousing situations.

AMT is based on clients' readiness to develop self-control over their anxieties. Some clients do not hold such self-control expectancies and may prefer treatments involving minimal personal behavior change (e.g., anti-anxiety medication). Therapists must address client expectations about treatment goals and techniques before AMT is adopted.

Research suggests that some individuals develop relaxation-induced anxiety (i.e., relaxation training increases rather than reduces anxiety). Sometimes, this problem can be resolved by repeated practice of small relaxation training steps, a switch to an alternative relaxation training methodology, or counter-demand expectancies. However, if this issue cannot be resolved, other interventions should be employed.

Few studies have been reported concerning the effectiveness of AMT with children and the elderly. However, anecdotal evidence has shown that ethnic minority youth can respond to AMT and that children can develop relaxation skills and use imagery.

V. EMPIRICAL STUDIES

Many studies support the efficacy of AMT. In 1990 Richard Suinn reviewed the literature and concluded AMT to be effective with a wide variety of disorders.

AMT is effective with various phobias and situational anxieties. For example, AMT reduced social, math, test, and public speaking anxieties, and in some cases improved performance in these areas as well. A more recent study showed that both AMT and a cognitive intervention lowered math anxiety and improved math performance in math-anxious college students. Anxiety surrounding vocational indecision was reduced by AMT as well. Throughout these studies, AMT was as effective as or more effective than other interventions such as systematic desensitization, self-control desensitization, systematic rational restructuring, social skill building, and vocational counseling. Moreover, although AMT targeted specific phobias or anxieties, reductions of general anxiety were reported in several studies, suggesting that AMT was associated with response generalization.

High trait anxiety, GAD, panic and posttraumatic stress disorder have also been treated successfully with AMT. Effects were maintained at long-term followup, and, where measured, generalized effects were found on measures of depression and anger. AMT lowered anxiety levels and use of anxiety medications in a group of GAD and panic-disordered psychiatric patients. AMT and cognitive therapy lowered anxiety in outpatients with GAD and tended to be more effective than psychodynamic therapy. Also, AMT reduced anxiety, avoidance, and intrusions of trauma-related memories in Vietnam veterans with posttraumatic stress disorder. In addition, general anxiety, ratings of anger and anxiety, and overall psychiatric status were improved in schizophrenic outpatients receiving AMT.

Stress- and medically related conditions have also responded favorably to AMT. For example, AMT has lowered Type A behavior and general anxiety in Type A individuals, blood pressure levels in individuals with essential hypertension, stress in individuals with

diabetes, gynecological symptoms and general anxiety in women with dysmenorrhea, and stress in gynecological outpatients. Again, AMT tended to be as effective as other interventions and, where assessed, to show long-term maintenance.

AMT has also been successfully adapted to anger reduction. The procedures of AMT have been successfully adapted to control general anger and anger while driving. In these studies, the adaptation of AMT was generally as effective as cognitive and combined cognitive-relaxation interventions.

In summary, AMT is an empirically supported intervention. It is effective with situational anxiety and phobic conditions, as well as GAD, general anxiety, and posttraumatic stress disorder. It is also effective with stress-related medical conditions and anger. Where comparisons have been made to other interventions, it is generally significantly more effective than control conditions, and as effective as certain other cognitive-behavioral interventions. Where long-term follow-ups have been conducted, effects were well maintained. In all, there is a solid empirical literature supporting AMT. Moreover, since many of the outcome studies of AMT have been conducted in a group format, there is considerable support for group AMT as well.

VI. SUMMARY

Anxiety management training (AMT) is a brief behavioral intervention involving the use of relaxation as a skill for reducing anxiety. It may be conducted individually or in small groups, and it typically takes about eight sessions. AMT is founded on the principle that anxiety has stimulus properties that can serve as cues for relaxation as a coping response. AMT relies on relaxation training, in-session anxiety arousal through imagery and practice of relaxation as a coping skill, and graduated homework assignments to ensure transfer for real-life anxiety reduction. The first session is devoted primarily to relaxation practice and anxiety scene development. The next seven sessions are devoted to eliciting anxiety through anxiety-arousing imagery and initiating relaxation coping skills for anxiety reduction. In early sessions, anxiety arousal is moderate, and the therapist provides considerable structure and assistance in relaxation retrieval. However, over time and with client success in anxiety management, the therapist assistance is faded to client self-control, and the level of anxiety arousal is increased. Homework assignments involve applying relaxation coping skills outside of the treatment sessions to ensure transfer of relaxation coping skills to real-life application. Portions of latter sessions address issues of maintenance and relapse prevention and may address application to other distressing emotions as well. AMT is empirically supported with many anxiety- and stress-related disorders and conditions. AMT may be employed as a stand-alone intervention or be integrated with other behavioral and nonbehavioral interventions in a comprehensive treatment plan.

See Also the Following Articles

Anxiety Disorders: Brief Intensive Group Cognitive Behavior Therapy ■ Applied Relaxation ■ Applied Tension ■ Aversion Relief ■ Biofeedback ■ Complaints Management Training ■ Panic Disorder and Agoraphobia ■ Progressive Relaxation ■ Relaxation Training

Further Reading

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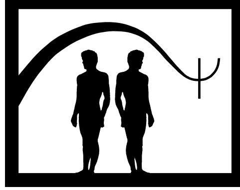

Applied Behavior Analysis

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I. Description of Treatment
II. Theoretical Bases
III. Essential Features of Applied Behavior Analysis
IV. Empirical Studies
V. Applications
VI. Issues and Challenges
VII. Summary
Further Reading

GLOSSARY

antecedents Stimuli, settings, and contexts that occur before and influence behaviors. Examples include instructions and gestures from others.

baseline rate The frequency with which behavior is performed prior to initiating a behavior modification program; operant rate of behavior.

behavior Any observable or measurable response or act.

consequences Events that follow behavior and may include influences that increase, decrease, or have no impact on what the individual does.

contingency The relationship among antecedents (e.g., prompts, setting events), a behavior (the response to be changed), and consequences (e.g., reinforcers).

contingent on behavior An event (e.g., praise, tokens, time out) is contingent on behavior when the event is delivered only if that behavior is performed.

differential reinforcement Reinforcing a response in the presence of one stimulus (S^D) and extinguishing the response in the presence of other stimuli (S^Δ). Eventually, the response is consistently performed in the presence of the S^D but not in the presence of the S^Δ.

discrimination Responding differently in the presence of different cues or antecedent events; control of behavior by discriminative stimuli.

discriminative stimulus (S^D) An antecedent event or stimulus that signals that a certain response will be reinforced. A response is reinforced in the presence of an S^D. After an event becomes an S^D by being paired with reinforcement, its presence can increase the probability that the response will occur.

experimental design The plan for evaluating whether the intervention, rather than various extraneous factors, was responsible for behavior change.

extinction A procedure in which the reinforcer is no longer delivered for a previously reinforced response.

functional analysis Evaluation of the behavior and of antecedent and consequences associated with the behavior. A functional analysis identifies the "causes" of behavior, that is, current conditions that are maintaining the behavior. These conditions are determined by directly assessing behavior, proposing hypotheses about likely factors that are controlling behavior, and testing these hypotheses to demonstrate the conditions that cause the behavior. The information from functional analysis is then used to guide the intervention by direct alteration of conditions so that the desired behaviors are developed.

functional relation The relation of behavior and an experimental condition or contingency. A functional relation is demonstrated if behavior systematically changes when the contingency is applied, withdrawn, and reapplied.

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multiple-baseline design An experimental design that demonstrates the effect of a contingency by introducing the contingency across different behaviors, individuals, or situations at different points in time. A causal relationship between the experimental contingency and behavior is demonstrated if each of the behaviors changes only when the contingency is introduced.

negative reinforcement An increase in the likelihood or probability of a response that is followed by the termination or removal of a negative reinforcer.

operant Behavior that is emitted rather than elicited. Emitted behavior operates on the environment and responds to changes in consequences (e.g., reinforcement, punishment) as well as antecedents (e.g., setting events, stimuli).

operant conditioning A type of learning in which behaviors are influenced primarily by the consequences that follow them. The probability of operant behaviors is altered by the consequences that they produce. Antecedents too are involved in learning as cues (S^D, S^Δ) become associated with different consequences and can influence the likelihood of the behavior.

operational definition Defining a concept (e.g., aggression, social skills) by referring to the specific operations that are to be used for assessment. The "operations" or methods of measuring the construct constitute the operational definition.

positive opposite A behavior that is an alternative to and preferably incompatible with the undesired behavior. Suppression or elimination of an undesirable behavior can be achieved or accelerated by reinforcing a positive opposite. When the goal is to reduce or eliminate behavior, it is helpful to consider the positive opposite behaviors that are to be developed in its stead.

positive reinforcement An increase in the likelihood or probability of a response that is followed by a positive reinforcer.

positive reinforcer An event whose presentation increases the probability of a response that it follows.

prompt An antecedent event that helps initiate a response. Instructions, gestures, physical guidance, and modeling cues serve as prompts.

punishment Presentation of an aversive event or removal of a positive event contingent on a response that decreases the likelihood or probability of the response.

reinforcement An increase in the likelihood or probability of a response when the response is immediately followed by a particular consequence. The consequence can be either the presentation of a positive reinforcer or the removal of a negative reinforcer.

response cost A punishment procedure in which a positive reinforcer is lost contingent on behavior. With this procedure, unlike time out from reinforcement, no time limit to the withdrawal of the reinforcer is specified. Fines and loss of tokens are common forms of response cost.

response maintenance The extent to which changes in behavior are sustained after the program or the intervention phase is ended.

S^Δ An antecedent event or stimulus that signals that a certain response will not be reinforced.

schedule of reinforcement The rule denoting how many or which responses will be reinforced.

S^D See **discriminative stimulus.**

setting events Antecedent events that refer to context, conditions, or situational influences that affect the contingencies that follow. Such events set the stage for behavior-consequence sequences that are likely to occur.

shaping Developing a new behavior by reinforcing successive approximations toward the terminal response.

single-case experimental designs Arrangements for evaluating whether the intervention was responsible for change. The designs require continuous assessment of the target behavior(s) over time and changes in how and sometimes to whom or when the intervention is applied. The unique feature of the designs is that they permit causal inferences to be drawn about interventions as applied to the individual case.

spontaneous recovery The temporary recurrence of a behavior during extinction. A response that has not been reinforced may reappear temporarily during the course of extinction.

stimulus control The presence of a particular stimulus serves as an occasion for a specific response. The response is performed only when it is in the presence of a particular stimulus.

target behavior The behavior to be altered or focused on during the intervention. The behavior that has been assessed and is to be changed.

time out from reinforcement A punishment procedure in which access to positive reinforcement is withdrawn for a brief period contingent on behavior. Isolation from a group exemplifies time out from reinforcement, but many variations do not require removing the client from the situation.

token A tangible object that serves as a reinforcer. Poker chips, coins, tickets, stars, points, and check marks are commonly used as tokens. They derive their value from being exchangeable for multiple backup reinforcers.

token economy A reinforcement system in which tokens are earned for a variety of behaviors and are used to purchase a variety of backup reinforcers.

transfer of training The extent to which the changes in behavior during and after the program extend to settings, situations, or circumstances that were not included in the program.

I. DESCRIPTION OF TREATMENT

Applied behavior analysis is a specific area of research and intervention within behavior modification. Several characteristics of behavior modification include an emphasis on overt behavior, a focus on current determinants of behavior, and reliance on the psychology of learning as the basis for conceptualizing clinical problems (e.g., anxiety, depression) and their treat-

ment. The psychology of learning refers broadly to theory and research derived from different types of learning, including classical conditioning, operant conditioning, and observational learning (modeling). Applied behavior analysis draws primarily on operant conditioning as the basis for developing interventions.

Applied behavior analysis is not a technique or indeed even a set of techniques. Rather, it is an approach toward conceptualizing, assessing, and evaluating behavior and devising interventions to effect behavior change. The interventions focus on antecedents, behaviors, and consequences and how these can be altered to influence behavior. What is particularly remarkable is the scope of applications that have derived from applied behavior analysis. Apart from applications to many clinical problems seen in treatment, interventions have focused on a vast array of behaviors in everyday life. This contribution describes applied behavior analysis, the underlying principles and techniques, central features of the approach to assessment and evaluation, and how treatment and evaluation are intertwined.

II. THEORETICAL BASES

The underpinnings of applied behavior analysis derive from the work of B. F. Skinner (1904–1990), who developed and elaborated operant conditioning, a type of learning that emphasizes the control that environmental events exert on behavior. The behaviors are referred to as operants because they are responses that operate (have some influence) on the environment. Operant behaviors are strengthened (increased) or weakened (decreased) as a function of the events or consequences that follow them. Operants can be distinguished from reflex responses, such as a startle reaction in response to a loud noise or squinting in response to bright light. Reflex responses are unlearned and are controlled by eliciting stimuli. Most of the behaviors performed in everyday life are operants. Examples include reading, walking, working, talking, nodding one's head, smiling, and other freely emitted responses. Operant conditioning is the type of learning that elaborates how operant behaviors develop and the many ways in which their performance can be influenced.

Beginning in the 1930s, Skinner's animal laboratory work elaborated the nature of operant conditioning, including the lawful effects of consequences on behavior. These lawful effects generated various principles of operant conditioning, highlighted in Table 1. These principles provide general statements about the relations between behavior and environmental events. Basic experimental and animal laboratory research has continued to flourish and is referred as the experimental analysis of behavior. The principles have also served as the basis for developing interventions in applied settings such as the home, school, hospitals and institutional settings, business and industry, and the community at large. The application and evaluation of interventions derived from basic research on operant conditioning has emerged as its own area of research and is referred to as applied behavior analysis.

Laboratory work on the study of operant conditioning was characterized by a focus on overt behavior, assessment of the frequency of behavior over time, and the study of one or a few organisms (e.g., rats, pigeons) at a time. The focus on one or two organisms over time permitted the careful evaluation of how changes in consequences influenced performance and the lawfulness of behavior under diverse circumstances. Eventually, the approach was extended to humans. The initial goal was to see if lawful relations between behavior and

TABLE 1
Summary of Key Principles of Operant Conditioning

Principle	*Relation between environmental events and behavior*
Reinforcement	Presentation or removal of an event after a response that increases the likelihood or probability of that response.
Punishment	Presentation or removal of an event after a response that decreases the likelihood or probability of that response.
Extinction	No longer presenting a reinforcing event after a response that decreases the likelihood or probability of the previously reinforced response.
Stimulus control and discrimination	Reinforcing the response in the presence of one stimulus but not in the presence of another. This procedure increases the likelihood or probability of the response in the presence of the former stimulus and decreases the likelihood or probability of the response in the presence of the latter stimulus.

consequences demonstrated in animal laboratory research could be replicated in laboratory studies with humans and to investigate how special populations (e.g., adult psychiatric patients, mentally retarded children) responded.

By the late 1950s and early 1960s, operant conditioning methods were extended to human behavior outside the laboratory and focused on behaviors that were more relevant to everyday life. Initial demonstrations were conducted merely to see if environmental consequences could influence behavior outside of the context of a laboratory task. For example, could the irrational speech of psychiatric patients or interpersonal interactions of such patients with the staff be influenced by systematically providing attention and praise for positive, prosocial behavior? Several dramatic demonstrations in the early 1960s showed that marked behavior changes could be achieved. These demonstrations were unique because they included extensions of procedures developed in laboratory research, systematically applied consequences to develop behavior, carefully assessed behavior to evaluate the immediate effects of consequences, and demonstrated experimental control of the consequences. Experimental control was evident by showing that behaviors (e.g., delusional speech of psychiatric patients) could be increased and decreased as a function of systematically altering consequences in the environment (e.g., staff attention and praise). Of course, the control did not mean or imply that all behaviors could be influenced by environmental events or that current influences in the environment are the only causes of behavior. However, the early demonstrations raised the prospect that one way to intervene on many behaviors would be to alter antecedents and consequences and to do so in a systematic way. Laboratory research provided guidelines on how this might be accomplished. The early extensions of operant conditioning principles to human behavior began an area of research that is now formally recognized as applied behavior analysis.

III. ESSENTIAL FEATURES OF APPLIED BEHAVIOR ANALYSIS

Applied behavior analysis is an approach to intervention. The approach is characterized by attention to a specific set of influences and how they can be used to develop behavior as well as methods of assessment and evaluation. It is useful to describe these substantive and methodological components separately before conveying how they are intertwined.

A. Contingencies: The ABCs of Behavior

Behavior change in applied behavior analysis is achieved by altering the contingencies of reinforcement. The contingencies refer to the relationships between behaviors and the environmental events that influence behavior. Three components are included in a contingency, namely, antecedents (A), behaviors (B), and consequences (C). The notion of a contingency is important not only for understanding behavior but also for developing programs to change behavior. Antecedents refer to stimuli, settings, and contexts that occur before and influence behaviors. Examples include verbal statements, gestures, or assistance in initiating the behavior. Behaviors refer to the acts themselves, what individuals do or do not do, and the actions one wishes to develop or change. Consequences refer to events that follow behavior and may include influences that increase, decrease, or have no impact on what the individual does. Table 2 illustrates the three components of a contingency with simple examples from everyday life.

Antecedents include a number of potential influences on behavior. Setting events are one category of antecedents and refer to contextual factors or conditions that influence behavior. They are broad in scope and set the stage for the behaviors and consequences that follow. Examples include features of the situation, features of the task or demands presented to the individual, conditions within the individual (e.g., exhaustion, hunger, expectations of what will happen), or behaviors of others that influence the likelihood of specific behaviors that follow. For example, stress at work can influence the subsequent behavior of an individual when he or she returns home at the end of the day. The stress may influence interactions at home and reactions to other events (e.g., comments from a spouse, "bad" habits of a spouse). Setting events are important influences on behavior. The "same" request delivered to a child may lead to quite different responses depending on how the request is delivered, when, and in the context of other influences. Prompts are another type of antecedent event and refer to specific antecedents that directly facilitate performance of behavior. They are distinguished from setting events, which are more contextual, indirect, and broader influences. Common examples of prompts include instructions to engage in the behavior (e.g., "Please wash up before dinner"), cues (e.g., reminders or notes to oneself, lists of things to do), gestures (e.g., to come in or leave the room), ex-

TABLE 2
Three Components of a Contingency and Illustrations from Everyday Life

Antecedent	*Behavior*	*Consequence*
Telephone rings	Answering the phone	Voice of person at the other end
Wave (greeting) from a friend	Walking over to the friend	Visiting and chatting
Parent instruction to a child to clean the room	Picking up toys	Verbal praise and a pat on the back
Warning not to eat spoiled food	Eating the food	Nausea and vomiting

amples and modeling (e.g., demonstrations to show this is how the behavior, task, or skill is performed), and physical guidance (e.g., guiding a person's hands to show her how to play a musical instrument).

Behavior, the second part of the contingencies of reinforcement, refers to what an individual does and the goal of the program, that is, what one wants the individual to do. The goal of the intervention may be to increase performance in some way (e.g., initiating a behavior that never occurs, developing more frequent performance of behavior that is occurring, fostering longer periods or more consistent performance of the behavior, or fostering the behavior in new situations). In these instances, providing antecedents and consequences may be sufficient to increase or extend the behavior. In many other cases, the individual does not have the behavior in his or her repertoire or only has the behavior partially. The desired behavior may be so complex (e.g., driving a car, reading a story) that the elements making up the response are not in the repertoire of the individual. In these cases, one cannot merely wait for the behavior to occur and provide consequences; the response may never occur. The behavior can be achieved by reinforcing small steps or approximations toward the final response, a process referred to as shaping.

Consequences, the third component of the contingencies, refers to what follows behavior. For a consequence to alter a particular behavior, it must be dependent or contingent on the occurrence of that behavior. Behavior change occurs when certain consequences are contingent on performance. A consequence is contingent when it is delivered only after the desired behavior has been performed and is otherwise not available. When a consequence is not contingent on behavior, this means that it is delivered independently of what the person is doing. For example, praise might be used to increase the compliance of an oppositional child. To exert influence, praise would need to be contingent on performance, in this case on instances of compliance. The example is helpful in another way. For a very noncompliant child, there may be no instances of the performance to praise. The use of antecedents to prompt compliance (e.g., prompts of precisely what the child could say), shaping to approximate compliance (e.g., partial compliance to simple requests), and praise contingent on performance can readily develop the behavior.

The principles of operant conditioning include the many ways in which consequences follow behavior. The principles can be translated into a very large number of techniques. For example, positive reinforcement was mentioned as a principle (Table 1). The positive consequences that can be applied contingently to alter behavior can include food, praise, attention, feedback, privileges, and activities. Indeed, often many of these are combined into a single reinforcement program where the individual can earn tokens (e.g., points, starts, tickets, or money) contingent on the desired behavior. The tokens are then used to purchase a variety of other reinforcers available in the setting. Many reinforcers (praise, attention, tokens) have broad applicability across many individuals and generally are effective. However, individual preferences and special features of the situation (e.g., at home, at school) can be readily incorporated into a behavior-change program.

Providing positive reinforcers after behavior can have a potent effect. Yet, identifying the reinforcers that might be used can oversimplify the task of changing behavior. To be effective, the consequences must be provided in special ways; these ways have been well studied in research. Merely providing some positive consequence for behavior is not likely to achieve changes unless several conditions are in place. Table 3 conveys several conditions that influence the effectiveness of reinforcement.

Although it is useful to distinguish antecedents, behavior, and consequences, they are interrelated. Antecedent events (e.g., setting events and prompts) often

TABLE 3
Factors in the Delivery of Reinforcement That Influence Effects on Behavior

Contingent Application of Consequences
The reinforcer is provided only if the desired response is performed and otherwise not given.
Delay of Reinforcement
The reinforcer should be delivered immediately after the desired behavior.
Magnitude or Amount of the Reinforcer
Larger magnitude reinforcers (e.g., quantity of food, number of points, amount of money) increase effectiveness of reinforcement, up to a point that the individual might be satiated (e.g., if food is used).
Quality or Type of the Reinforcer
Reinforcers that are highly preferred lead to greater performance than do those that are less preferred.
Schedule of Reinforcement
When behavior is being developed, reinforcement after every occurrence of the response (continuous reinforcement) is much more effective than reinforcement for only some of the responses (intermittent reinforcement).

become associated with a particular behavior and its consequences. For example, in some situations (or in the presence of certain stimuli), a response may be reinforced, whereas in other situations (in the presence of other stimuli), the same response may not be reinforced. The concept of differential reinforcement is central to understanding stimulus events and their influence. Differential reinforcement refers to reinforcing a response in the presence of one stimulus or situation and not reinforcing the same response in the presence of another stimulus or situation. When a response is consistently reinforced in the presence of a particular stimulus (e.g., at home) and not reinforced in the presence of another stimulus (e.g., at school), each stimulus signals the consequences that are likely to follow. A stimulus whose presence has been associated with reinforcement is referred to as a discriminative stimulus (S^D). A stimulus whose presence has been associated with nonreinforcement is referred to as a nondiscriminative stimulus or (S^Δ or S delta). The effect of differential reinforcement is that eventually the reinforced response is likely to occur in the presence of the S^D but unlikely to occur in the presence of the S^Δ. When responses are differentially controlled by antecedent stimuli, behavior is said to be under stimulus control. When there is stimulus control, the presence of a stimulus increases the likelihood of a response. The presence of the stimulus does not cause or automatically elicit the response but rather merely increases the probability that a previously reinforced behavior will occur.

Instances of stimulus control pervade everyday life. For example, the sound of a doorbell signals that a certain behavior (opening the door) is likely to be reinforced (by seeing someone). Specifically, the sound of the bell frequently has been associated with the presence of visitors at the door (the reinforcer). The ring of the bell (S^D) increases the likelihood that the door will be opened. In the absence of the bell (S^Δ), the probability of opening the door for a visitor is very low. The ring of a doorbell, telephone, alarm, and kitchen timer all serve as discriminative stimuli (S^D) and signal that certain responses are likely to be reinforced. Hence, the probability of the responses is increased. In a quite different context, when a robber confronts us, this is not an S^D for really friendly and social behaviors on our part. The cues that robbers present (weapon, hostile demeanor, outfit, context) suggest that probably only one response will be reinforced (e.g., compliance).

Stimulus control and discrimination illustrate how antecedents, behaviors, and consequences become connected. In applied behavior analysis, often the goal is to develop behavior in some situations (e.g., at home) or in multiple situations. Usually, it is important to develop behavior, so it transfers across many stimulus conditions; this can be accomplished during training, as mentioned later in this entry.

B. Assessment

Implementing an intervention requires clearly stating the goal, carefully describing the behaviors that are to be developed, and measuring these before the program begins. The main goal of a program is to alter or develop a particular behavior, referred to as the target behavior. There might well be multiple target behaviors.

Identifying the goal of the program in most cases seems obvious and straightforward because of the direct and immediate implications of the behavior for the adjustment, impairment, and adaptive functioning of the individual in everyday life. For example, many interventions have decreased such behaviors as self-injury (e.g., headbanging) among autistic children, anxiety and panic attacks, and driving under the influence of alcohol, and have increased such behaviors as

engaging in practices that promote health (e.g., exercise, consumption of healthful foods) and academic performance among individuals performing poorly at school.

More generally, behaviors are selected for intervention for any of several reasons. First is impairment, or the extent to which an individual's functioning in everyday life is impeded by a particular problem or set of behaviors. Impairment consists of meeting role demands at home, at school, and at work, interacting prosocially and adaptively with others, and not being restricted in the settings, situations, and experiences in which one can function. Second, behaviors that are illegal or rule-breaking too are brought to treatment. Illegal behaviors would include driving under the influence of alcohol, using illicit drugs, and stealing; rule-breaking that is not illegal might include a child leaving school repeatedly during the middle of the day or not adhering to parent-imposed curfew. Third, behaviors that are of concern to individuals themselves or to significant others serve as the basis for seeking interventions. For example, parents seek interventions for a variety of child behaviors that affect daily life but may or may not be severe enough to reflect impairment or rule-breaking. Examples might include toilet training, school functioning, and mild versions of other behaviors that, if severe, might lead to impairment. Finally, behaviors are focused on that may prevent problems from developing. For example, premature babies and children from economically disadvantaged environments are at risk for later school difficulties. Early interventions within the first months and few years of life are intended to develop pre-academic behaviors and avert later school difficulties. Also, developing behaviors to promote safety (e.g., in business and industry or in the home) or health are selected to prevent later problems.

A behavioral program usually begins with a statement from someone that there is a problem or a need to intervene to address a particular end. Global statements of behavioral problems are usually inadequate for actually beginning an intervention. For example, it is insufficient to select as the goal alteration of aggressiveness, learning deficits, speech, social skills, depression, psychotic symptoms, and self-esteem. Traits, summary labels, and personality characteristics are too general to be of much use. Moreover, definitions of the behaviors that make up such general labels may be idiosyncratic among different behavior-change agents (parents, teachers, or hospital staff). The target behaviors have to be defined explicitly so that they can actually be observed, measured, and agreed upon by individuals administering the program.

The general complaint (e.g., the child has tantrums) must be translated into operational definitions. Operational definitions refer to defining a concept on the basis of the specific operations used for assessment. Paper-and-pencil measures (questionnaires to assess the domain), interviews, reports of others (e.g., parents, spouses) in contact with the client, physiological measures (e.g., arousal, stress), and direct observation are the among the most commonly used measures in psychological research to operationalize key concepts. Several measures might be selected in any given intervention program, and no single measure can capture all components of the concept. In applied behavior analysis, emphasis is placed on direct observation of overt behavior because overt behavior is viewed as the most direct measure of the treatment focus. For example, if tantrums are of interest, it is useful to observe the tantrums directly and to see when they occur, under what circumstances, and whether they change in response to an intervention.

Once the target behavior(s) is carefully defined, observations are made to collect data on the problem. The observations may be made by tallying their occurrence within a period of time or recording whether or not they occurred in a particular time interval. The behavior is sampled on a continuous basis, usually daily or multiple times per week. For example, if the goal is to increase the social behavior of a withdrawn psychiatric patient, to develop completion of homework in an adolescent with academic difficulties, or to increase the activity of an elderly person in a residential home, the specific target behaviors will be defined and assessed directly. The purpose is to obtain the rate of performance prior to the intervention, referred to as the baseline rate. Because interventions are often conducted in everyday settings, parents, teachers, and others may be involved in the collection of this information. Careful assessment is central because the assessment data are used to make decisions about the treatment while the intervention is in effect.

C. Functional Analysis: From Assessment to Intervention

Functional analysis consists of a methodology of identifying the relation of a target behavior to antecedents and consequences and using this information to select the intervention. "Functional" emphasizes identifying the functions of the behavior, that is, the

TABLE 4
Hypothetical Examples of the Consequences or Purposes of Behaviors

Behavior	*Outcomes that may maintain that behavior*
Tantrum of a child before going to bed	Attention from a parent, extra time with the parents, reduction of parent's arguing with each other
Arguing or fighting with a spouse/partner	Affection and promises of life-long commitment that result from making up after the fight, time away from the spouse as he or she walks out for a few days
Complaining	Attention and sympathy from others, not hearing the complaints of others, personal relief or stress reduction as a function of expressing unfortunate conditions
Attaining good grades in school	Praise from others, success, reduction in anxiety about failing

Note: The functions of a behavior are usually determined on an individual basis so there is no single function that a particular behavior invariably serves for all or even most individuals. Indeed, different behaviors can serve the same function for two individuals, and the same behavior may serve different functions for two individuals.

purposes the behavior may serve in the environment or the outcomes that maintain the behavior. Table 4 provides some examples of behaviors and some of the functions the behaviors may serve. "Analysis" emphasizes the careful assessment and systematic evaluation to isolate precisely the factors that control behavior. The analysis consists of obtaining data about the hypothesized purposes that the behavior may serve and testing whether these purposes actually control or influence behavior.

The elements of functional analyses are assessment, development and evaluation of hypotheses about factors that control behavior, and intervention. Initially, assessment is designed to identify the relations of antecedents and consequences to the behavior of interest and hence the purposes or functions of the behavior. This assessment is likely to suggest circumstances or stimulus conditions with which the behavior is associated. For example, the behavior may appear to be more frequent at some times of the day rather than others, when some persons are present rather than others, and when certain effects or consequences occur.

The patterns raise hypotheses about what may be maintaining or controlling behavior. If at all possible, the hypotheses are tested directly by assessing the target behavior as various conditions are changed. The conditions in which the hypotheses are tested may be brief and transient merely to see if different conditions systematically influence behavior. This is an experimental phase designed to evaluate if the controlling conditions can be identified.

The information gained from manipulating conditions and from assessment under different conditions is used to help the client directly. Specifically, the conditions shown to influence behavior are altered to decrease inappropriate or deviant behavior and to foster appropriate, prosocial behavior. This is the intervention phase of functional analysis. The purpose of this phase is to put into place the condition that controls behavior to achieve a significant therapeutic change.

Consider, as an example, a child (Kathy, age 8) who frequently fought (physically) with her younger sister (Mary, age 4). The parents wanted to eliminate fighting. Both children were in the home from late afternoon (after school and day care) and were observed by the mother for several days from the afternoon until the children's bedtime. We asked the mother to chart two related behaviors when the children were together (in the same room). The first behavior was fighting and included arguing, shouting, and hitting. The second behavior was playing cooperatively or being together in an activity without the above behaviors. We recorded these latter behaviors because developing positive opposite behaviors typically serves as the focus of interventions that are stimulated by interests in decreasing deviant behavior. The behaviors were observed using a frequency count, that is, merely tallying the occurrence of any instance of the behavior. One minute of either behavior was scored as an instance of that behavior.

Table 5 includes two charts the mother was asked to use to track fighting (Chart A) and playing cooperatively (Chart B). The purpose of using a chart was to identify whether any patterns emerged and suggest the conditions that may contribute to the behavior. The entries in the chart are samples and reflect some of the information collected from the mother. After several days, it appeared (from Chart A) that Kathy's fighting with her sister occurred mostly during the following antecedent conditions: after school but before dinner, in the presence of the mother when she was by herself,

TABLE 5
Charts to Record Fighting (Chart A) and Playing Cooperatively (Chart B)—Sample Entries from the Charts

Chart A Episodes of Fighting

Time/day/date	*Antecedents situation/setting conditions/others present*	*Consequences*
Monday, 3:45 P.M.	Watching TV, no else home	Separated children, sent Kathy to her room, read to her for 15 min
Tuesday, 5:00 P.M.	Playing on the computer	Took Kathy to her room and talked with her about playing better with her sister, talked about what happened at school
Wednesday, 4:10 P.M.	Playing on the computer	Sent Kathy to her room and she showed me drawings and a poem she made at school.

Note: The behavior observed is the fighting of Kathy with her younger sister. Any entry (row) on the chart refers to a time in which an episode of fighting with her younger sister.

Chart B Episodes of Playing Cooperatively

Time/day/date	*Antecedents situation/setting conditions/others present*	*Consequences*
Monday, 7:00 P.M.	Watching TV; Bill (husband) and I watching with them	None
Tuesday, 4:00 P.M.	Watching TV; Marge (neighbor) in the kitchen with me	None
Thursday, 7:30 P.M.	Watching TV; no one else present	Watched until bath time and then went to bed

Note: The behavior observed was playing cooperatively, that is, together in the same room and without fighting. Any entry (row) on the chart refers to a time (5 minutes or more) in which the sister played cooperatively.

and when the girls were playing a game or watching television together. The consequences usually consisted of the mother intervening to stop the fight, sending Kathy to her room, and remaining in the room with Kathy until she calmed down. Chart B was rather interesting as well. Playing cooperatively was associated with the following antecedent conditions: the presence of another adult in the home (the father or a neighbor visiting the mother) and the time in which one or both parents were also in the room. No consequences systematically followed playing cooperatively. The parents felt that they ought to leave well enough alone—a strategy that is not helpful when one wants to develop specific behaviors. Here the undesired behavior was positively reinforced (with attention, time with mom), and the desired behavior was not.

Using information from the charts, we hypothesized that Kathy's fighting served as an occasion to have private time with the mother. Quite likely, time with the mother was a positive reinforcer that inadvertently contributed to or maintained fighting. Kathy's interest in attention from the mother, obviously "normal" for any child, was heightened according to the mother, because of the strong sibling rivalry she had felt since her younger sister was born. Also of interest were the observations (Chart B) that playing cooperatively among the two children was not systematically associated with positive consequences.

Based on the baseline observations of the target behaviors (fighting, playing cooperatively) and the use of the charts, we generated the following simple hypothesis. Kathy's fighting served to provide time alone with her mother. The fighting only occurred when the mother was home without another adult because only on these occasions was the mother likely to provide the private and alone time with Kathy. That is, the mother probably was less likely to leave conversations with the husband or visiting friend even when Kathy was fight-

ing. We decided to begin directly with a simple intervention to test this hypothesis.

The intervention consisted of providing positive reinforcement (time with the mother) for cooperative play and time out from reinforcement (a period of time when opportunities for reinforcement were removed) for Kathy for fighting. When the girls came home from school/day care, Kathy was told she and the mother could have some play time together if she and her sister played cooperatively for 30 minutes. (Time alone also was provided afterwards with the sister.) Briefly, after the time elapsed without fighting, the mother effusively praised the girls and then played with Kathy in her room. If Kathy had a tantrum, she was sent to her room for 10 minutes and the mother did not remain in the room with her. Requiring longer periods of cooperative play to earn time with the mother and adding father and mother praise for cooperative play essentially eliminated all fighting within the first five days of the program. The functional analysis was helpful in conveying the many factors associated with fighting and suggesting what might be used to increase cooperative play.

In this simple example, the initial assessment suggested a pattern of factors related to the behavior. The pattern suggested a hypothesis, and this led directly to an intervention. In research, there is a separate step of testing the hypotheses experimentally before moving into the intervention. Usually, the tests are conducted in controlled laboratory conditions. The conditions are sometimes referred to as analogue testing because the behavior and events associated with it are evaluated in a contrived situation that is only roughly analogous to conditions in everyday life. Yet, if the laboratory conditions can identify and isolate possible influences (antecedents and consequences), these conditions are likely to exert similar effects in everyday life.

Several studies have evaluated self-injurious behavior among children and adults diagnosed with autistic disorder. A challenge has been eliminating such behavior. Functional analyses have evaluated several possible controlling factors. Three possibilities have been evaluated frequently, including (1) social attention provided for self-injurious behavior (i.e., positive reinforcement), (2) escape from the situation to reduce demands from others (i.e., negative reinforcement), or (3) the stimulation resulting from the behavior itself (i.e., reinforcement from tactile stimulation). Assessment is conducted for brief periods by an experimenter who presents these conditions in alternating order. Each condition might be presented for one to several 10-minute periods. Plotting data separately for each condition often shows that one of the conditions is associated with changes in self-injury and others are not. More often than not escape from task demands seems to negatively reinforce self-injury. That is, the rate of self-injury is much higher when the experimenter ends the task as the person engages in self-injury. Once this is demonstrated, one can make escape from task demands contingent on noninjurious behavior rather than injurious behavior. Escape reinforces positive behavior, and in this way self-injury is no longer reinforced and can be eliminated.

Functional analysis represents a significant contribution of applied behavior analysis. The analysis can suggest specific antecedent conditions that promote or give rise to the behavior as well as identify the consequences maintaining behavior. Scores of demonstrations have shown how functional analysis can be used to identify controlling influences and then move to an effective intervention (see Sturmey, 1996). Consequently, a main benefit of functional analysis is in the treatment gains that have been achieved in many applications of reinforcement, punishment, and extinction.

Functional analysis is not merely a method of assessment and intervening but also a way of thinking about behavior. The way of thinking alerts us to the importance of considering a range of antecedents and consequences that may influence behavior. Also, the method provides a way of testing hypotheses to help the individual client. What in fact is controlling behavior, and how can this be translated into effective treatment? Functional analysis provides a means for answering these questions.

Functional analysis also provides a methodology for addressing important complexities of behavior. The first of these is that two (or more) individuals may be performing identical behaviors (e.g., getting into fights at school on the playground, coming late to work or to class, arguing with one's boyfriend or girlfriend), but for quite different reasons. Moreover, a given child may engage in two or more quite different behaviors that in some way serve the same purpose. For example, a child may have a tantrum at the dinner table every night and also get into trouble at school and be placed on detention. These are quite different behaviors; they bear no obvious resemblance, and they occur in different settings. It is possible that they serve a similar function, which might be, for example, that both bring the mother and father together to discipline the child.

Conducting a functional analysis is not always feasible. Also, controlling factors may not be obvious or evident in the day-to-day life of an individual if, for example, the consequences are intermittent or the behavior is reinforced by its own performance (e.g., the stimulation it provides). Detailed analyses and extended observations may not be feasible, either because the resources for observation are limited or because of the urgency to intervene (e.g., to stop a child's fighting).

Many of the techniques based on reinforcement, punishment, and extinction, and other contingency manipulations have proven to be enormously effective in situations in which functional analyses have *not* been done. This is useful to know especially because systematic but simple interventions are often surprisingly effective if they are carried out systematically. Even so, functional analysis has provided a powerful tool to identify the current factors in the environment that control behavior and to move to an intervention phase in which these factors are altered to promote prosocial and adaptive behavior.

D. Evaluation and Single-Case Designs

Assessment of the target behavior(s) is quite valuable for identifying the scope of the problem, and possible factors contributing to the problem as well as for evaluating whether there has been a change over the course of the intervention. Assessment may reveal that a change has occurred, but it does not show what *caused* the change. Proponents of applied behavior analysis are extremely interested in determining the causes of behavior change. The short-term benefits of interventions to the individual client and the long-term benefits of interventions for society at large will derive from understanding what produces change, the bases or reasons for the change, and the factors that one might alter to optimize the change. The prior comments on functional analysis convey explicitly how assessment can be used to identify factors that control behavior and then how this information is used to develop effective interventions. Evaluating the basis or reason for change extends beyond functional analysis. Whether or not one conducts a functional analysis, there is an interest in evaluating whether the intervention was responsible for change.

The cause of behavior change can be demonstrated in different ways. The clinical investigator who designs the intervention usually plans the situation to identify whether the intervention was responsible for behavior change. The plan to demonstrate the cause of behavior change is referred to as the experimental design. The purpose of the experimental design is to identify the variables that influence, control, or are responsible for behavior change. In applied behavior analysis, this is referred to as the demonstration of a functional relation between the target behavior and the intervention. A functional relation is demonstrated when altering the experimental condition or contingency systematically changes behavior. Behavior is shown to be a function of the environmental events that produced change.

Different experimental designs can be used to show that the intervention, rather than extraneous events, was responsible for behavior change. The designs are referred to as single-case experimental designs. These designs are true experiments, which means that they represent a strong basis for drawing causal inferences. Although such designs can be used with large groups of individuals, their unique characteristic is that they can be used with individual cases (e.g., one patient or student). In single-case research, inferences are usually made about the effects of the intervention by comparing different conditions presented to one or a few individuals over time.

There are a number of basic requirements that single-case experimental designs share and that are fundamental to understanding how conclusions are drawn. The most fundamental design characteristic is the reliance on continuous assessment, that is, repeated observations of performance over time. The client's performance is observed on several occasions, usually before the intervention is applied and continuously over the period while the intervention is in effect. Typically, observations are conducted on a daily basis or at least on multiple occasions each week. These observations allow the investigator to examine the pattern and stability of performance. The pretreatment information over an extended period provides a picture of what performance is like without the intervention. When the intervention eventually is implemented, the observations are continued and the investigator can examine whether behavior changes coincide with the intervention. There are a number of experimental designs in which causal relations can be drawn between the intervention and behavior. An example of one design is provided here to illustrate the approach.

The multiple-baseline design demonstrates the effect of an intervention by showing that behavior change accompanies introduction of the intervention at different points in time. The key feature of the design is evalua-

tion of change across different baselines. Ideally, change occurs when the intervention is introduced in sequence to each of the baselines. Multiple-baseline designs vary depending on whether the baselines refer to different behaviors, different individuals, different situations, or time periods. For example, in the multiple-baseline design across behaviors, a single individual or group of individuals is observed. Data are collected on two or more behaviors, each of which eventually is to be altered. The behaviors are observed daily or at least on several occasions each week. After each of the baselines shows a stable pattern, the intervention is applied to only one of the behaviors. Baseline conditions remain in effect for the other behaviors. The initial behavior to which treatment is applied is expected to change, while other behaviors remain at pretreatment levels. When the treated behavior stabilizes, the intervention is applied to the second behavior. Treatment continues for the first two behaviors, while baseline continues for all other behaviors. Eventually, each behavior is exposed to treatment but at different points in time. A causal relation between the intervention and behavior is clearly demonstrated if each behavior changes only when the intervention is introduced and not before. (Examples of multiple-baseline designs are presented later in the chapter.)

Multiple-baseline designs are user friendly in clinical and other applications because the intervention is applied in a sequential fashion. The investigator may wish to change many different behaviors of an individual, a behavior of an individual across many different situations, or the behavior of many different individuals. Rather than introducing the intervention to all of these at once, the program initially focuses on only one behavior, situation, or individual. If the intervention is effective, then it can be extended to all of the other behaviors for which change is desired. As importantly, if the intervention is ineffective or insufficiently effective to achieve important changes, it can be altered or improved before it is extended.

Implementing a single-case experimental design during an intervention program is not always possible because of constraints of the situation. There are, however, many designs, some of which are more feasible and flexible than others. Whether or not a formal design or some approximation is used to evaluate the causal influence of the intervention, in applied behavior analysis some evaluation is conducted. It is essential to see if behavior changes occur with treatment, if these changes are important (i.e., have a palpable impact on the problem), and, to the extent possible, if the intervention is likely to be responsible for change. Among approaches to treatment, the collection of ongoing data during the intervention, the use of this information to make changes in treatment, and the experimental evaluation of intervention effects are rather unique.

Use of the information collected during treatment and as part of an evaluation of that treatment warrants additional comment. Continuous assessment, unique to single-case designs, provides the investigator or clinician with feedback regarding how well the intervention is working. This is perhaps the main applied advantage of single-case designs, namely, the ability to see how or whether treatment is working and making changes as needed while the treatment or intervention is still in effect. Indeed, the success of interventions studied in applied behavior analysis not only stems from powerful procedures (e.g., reinforcement), but also from being able to identify weak treatment effects early and rectifying them. Clearly, the main advantage of the designs is that they allow careful investigation of an individual client. Thus, both the target focus and the interventions can be individualized to the circumstances and situation of the individual.

IV. EMPIRICAL STUDIES

Many different techniques can be derived from operant conditioning principles. It is not possible to review the evidence for each technique variation because of the scope of applications and weight of the evidence (see Further Reading). Examples are provided to illustrate the approach, selected techniques, and the type of evidence used to demonstrate effectiveness.

A. Reinforcement

Techniques based on positive reinforcement serve as the core interventions of applied behavior analysis. If the goal is to develop positive, adaptive behavior, reinforcement is obviously suitable because reinforcement operates to increase the behavior. Even if the goal is to reduce or eliminate behavior (e.g., stealing, aggression, gambling), positive reinforcement usually plays a central goal. Developing positive, prosocial behavior is effective as a way of eliminating or reducing maladaptive behavior. The positive prosocial behaviors that are reinforced are often opposite to or incompatible with the undesired behavior, so that increasing such behaviors (e.g., positive marital communication)

can be quite effective as a way of reducing undesirable behavior (e.g., arguing).

Intervention programs based on positive reinforcement have used attention, praise, feedback, and activities in which people like to engage as the reinforcing consequences for behavior. Often, multiple reinforcers are incorporated into a single program, referred to as a token economy. In a token economy, tokens function in the same way that money does in national economies. Tokens are earned and then used to purchase backup reinforcers, such as food and other consumables, activities, and privileges. The basic requirements of a token economy include specification of (1) the target behaviors, (2) the number of tokens that can be earned for performance of the behaviors, (3) the backup reinforcers that are available, and (4) the number of tokens the backup reinforcers cost.

As an illustration, token economies have been used extensively in psychiatric hospitals. In one of the most carefully evaluated programs, patients received tokens (colored plastic strips) for such behaviors as attending activities on the ward, group meetings, and therapy sessions; grooming, making one's bed, showering, and engaging in appropriate mealtime behaviors; and socially interacting. Tokens could be exchanged for a variety of backup events such as purchasing cosmetics, candy, cigarettes, and clothing; renting chairs or bedside stands for one's room; ordering items from a mail-order catalog; using a piano, record player, or radio; spending time in a lounge; watching television; having a private room, and sleeping late. As patients improved in the ward, they advanced to higher levels within the program, in which more reinforcers were available and higher criteria were set for performance. Patients could "buy" themselves off the system by doing well, and each carried a "credit card" that allowed free access to all of the available reinforcers as long as personal performance was up to standards. The program was very successful in reducing bizarre behaviors, improving social interaction and communication skills, and developing participation in activities. The gains were reflected in the number of patients discharged and in their adjustment in the community from one and a half to five years after the program ended.

Token reinforcement can be used with a group or with one or two individuals. For example, a token system was used to treat patients referred for drug addiction. Two adult males (Phil, age 28; Mike, age 35) were seen separately for cocaine addiction. Both also used marijuana, which apparently is the case for 40 to 50 percent of persons addicted to cocaine. Assessment of cocaine and marijuana use was accomplished by urinalyses that detected use within the previous 72 hours. Assessment was conducted four times a week to provide opportunities for earning tokens. Points were provided when the assessment indicated no sign of cocaine use. Bonus points were given for extended periods without a sign of drug use. Points could be exchanged for small amounts of money or goods and services, including movie tickets, sporting events, ski-lift tickets, and dinner certificates. The purpose of using these backup rewards was not only to imbue the points with value but also to involve the individuals in prosocial activities and, it was hoped, to develop a reinforcing, drug-free lifestyle. After 12 weeks of the program, a maintenance phase was initiated to reduce the frequency of the checks on drug use. In the final phase, marijuana use was added to the program. To earn tokens, the tests had to show that the individual did not use cocaine or marijuana.

Figure 1 plots the number of negative urine specimens (no sign of drug use) in a cumulative graph for each person. The figure shows that when reinforcement was given for cocaine abstinence, tests for cocaine use were negative. Marijuana continued to be used until the final phase, in which abstinence from both cocaine and marijuana was reinforced. The sequence of interventions across two individuals seen at the clinic and across two drugs follows the criteria of a multiple-baseline design. The pattern suggests that the token reinforcement program was responsible for the change. Followup assessment, including reports from others (girlfriend, roommate) and from the clients themselves, indicated no use of cocaine but some occasional use of marijuana.

The adaptability of the token economy can be illustrated by moving from the focus on one or two individuals, in the previous example, to a larger-scale application in business and industry. For example, in one study the focus was on worker safety. The study was conducted at two open-pit mines, one in Wyoming and the other in Arizona. Uranium was extracted and processed at one of the mines; coal was extracted and processed at the other. The two mines used similar equipment (trucks, bulldozers) and procedures (strip mining, crushing, storing materials). The goals of the program were to decrease job-related injuries, days lost from work due to such injuries, and costs (due to medical care, insurance, and equipment damage) among employees in each mine.

An incentive in the form of tokens (trading stamps) was provided at the end of each month to workers who

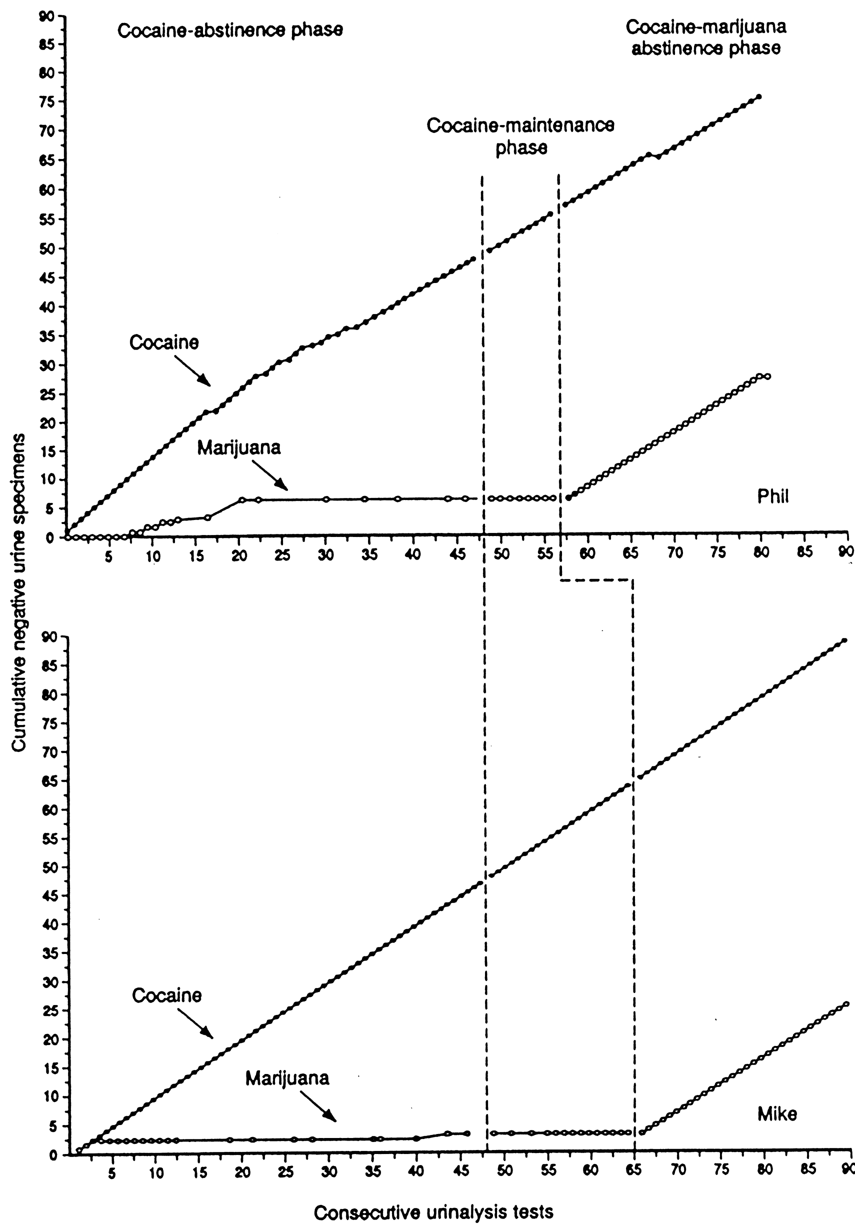

FIGURE 1 Cumulative number of negative cocaine and marijuana urinalysis results obtained with Phil and Mike during three phases of treatment as a function of tests conducted throughout treatment. Cocaine and marijuana test results are presented by closed and open symbols, respectively. Steep slopes in the cumulative record indicate change; horizontal lines indicate no change. [Budney, A. J., Higgins, S. T., Delaney, D. D., Kent, L., & Bickel, W. K. (1991). Contingent reinforcement of abstinence with individuals abusing cocaine and marijuana. *Journal of Applied Behavior Analysis, 24,* 657–665.]

had not been injured or had not required medical care because of an accident. Trading stamps were also given to all members of a group that worked under a particular supervisor if no one in the group had been injured. Bonus stamps were available to workers whose suggestions for improving safety in the facility were adopted. Trading stamps could also be lost (response cost) for missing work due to injury or for causing an accident.

The trading stamps could be exchanged at a nearby redemption center that carried hundreds of items, such as small appliances, barbecue grills, spice racks, and clocks. The program was introduced to each mine in a multiple-baseline design and integrated with the mine's routine practices for several years. Figure 2 shows a marked reduction in the number of accidents among workers (upper panel) as well as a reduction in monetary costs to the company (lower panel).

Token economies have been used with a variety of populations, including persons with mental retardation, prisoners, geriatric or nursing home residents, persons who abuse alcohol and drugs, outpatient children and adults, and members of the armed forces (e.g., in basic training). Similarly, the various settings in which token economies have been applied include the home, schools, institutions, hospitals, day-care centers, nursing homes, and business and industry. Probably the setting most often used is in the home where parents use points, marks on a chart, or stars on a temporary basis to foster behaviors such as completing chores, homework, and taking care of pets. Simple reinforcement programs are an excellent way to manage behavior, to move away from nagging, reprimands, and punishment in general. Usually in such applications tokens are not "needed." That is, the behavior could be changed with prompts, praise, and shaping. Yet, the tokens provide a useful way to structure and prompt parent behavior so that the consequences are applied systematically.

The discussion of reinforcement has emphasized token reinforcement because this is an adaptable system for integrating several behaviors and reinforcers. In many applications, reinforcers such as praise and privileges have been extremely effective in changing the behavior of children, adolescents, and adults in the diverse settings, mentioned previously. Apart from the diversity of reinforcers (e.g., praise, activities), programs can vary on whether the reinforcers are delivered on the basis of how the individual or group performs and who administers the program (e.g., parents, teachers, peers). Indeed, the range of options accounts for the broad applicability of reinforcement procedures. For example, in school settings, peers (older classmates at the school) often are involved in administering reinforcers to others for academic behavior (e.g., completing assignments correctly) or social interaction (e.g., appropriate initiations of contact with others). Peer-administered reinforcement programs have been effective in many applications. Interestingly, the individual whose behavior is reinforced changes, as would be expected. In addition, the peers who administer the program often show marked improvements in the target behaviors and hence share in the benefits of the intervention.

B. Punishment

The types of aversive events used and how they are applied in behavioral programs differ greatly from punishment practices in everyday life. In behavioral interventions, rarely is punishment used by itself. Rather, punishment is part of a larger program based on positive reinforcement that develops adaptive behavior. There are many reasons for emphasizing positive reinforcement, even when the goal is to suppress or eliminate some undesirable behavior. Perhaps most significantly, deviant behavior often can be eliminated effectively with little or no punishment. There are a variety of ways of delivering reinforcement to support behaviors incompatible with the deviant behavior that work quite well to eliminate undesired responses.

Punishment is also deemphasized because it does not train an individual regarding what to do. Merely suppressing behavior and training the individual in what not to do will not necessarily foster the desired or appropriate behaviors. Indeed, without an effort to develop behaviors through positive reinforcement, punishment may not be very effective as a way of changing behavior in the long term. The suppressed responses are likely to return unless some other behaviors have replaced them.

Punishment often is associated with undesirable side effects, such as emotional reactions (crying), escape from and avoidance of situations (e.g., staying away from a punitive parent), and aggression (e.g., hitting others). None of these is necessary for behavior to change. Punishment can foster undesirable associations with regard to various agents (parents, teachers), situations (home, school), and behaviors (doing homework). An important objective in child rearing, education, and socialization in general is to develop positive attitudes and responses toward these agents, situations, and behaviors; their frequent association with punishment may be counterproductive. For example, screaming at a child to practice a musical instrument is not likely to develop a love of music. For all of these reasons, programs emphasize positive reinforcement.

Proponents of behavioral techniques are extremely concerned with abuse and misuse of punishment. Such abuse and misuse have been shown to foster serious problems in children and adolescents. For example, use of harsh punishment in the home is related

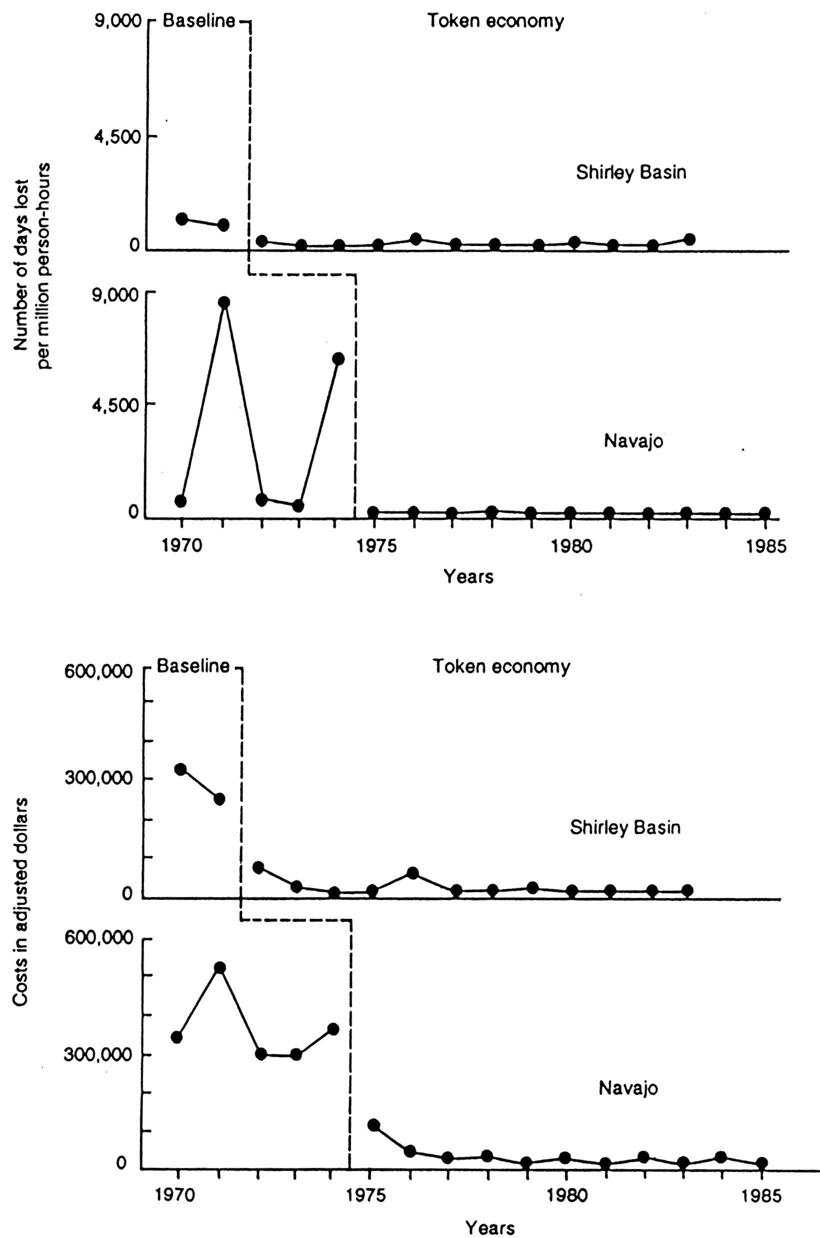

FIGURE 2 Yearly number of days lost from work per million person hours worked, resulting from work-related injuries (upper figure) and yearly cost, adjusted for hours worked and inflation, resulting from accidents and injuries (lower figure). [Fox, D. K., Hopkins, B. L., & Anger, W. K. (1987). The long-term effects of a token economy on safety performance in open-pit mining. *Journal of Applied Behavior Analysis, 20,* 215–224.]

to later deviant and delinquent behavior of the child. Both physical and verbal punishment (reprimands) can increase the very behaviors (noncompliance, aggression) that parents, teachers, and others wish to suppress.

In applied behavior analysis, when punishment is used, it usually consists of withdrawing positive events. The most commonly used form is time out from reinforcement, which refers to the removal of a positive reinforcer for a brief period of time (e.g., a few minutes).

During the time-out interval, the client does not have access to the positive reinforcers that are normally available in the setting. For example, a child may be isolated from others in class for five minutes. During that time, he or she will not have access to peer interaction, activities, privileges, and other reinforcers that are usually available.

A variety of time-out procedures have been used effectively. In many variations, the client is physically isolated or excluded in some way from the situation. The client may be sent to a time-out room or booth, a special place that is partitioned off from others (in the classroom, at home, or in an institution). In other variations, the client is not removed at all. For example, in one variation, developed initially in a special education classroom, children received praise and smiles (social reinforcement) from the teacher for performing their work. Each child in the class was given a ribbon to wear around his neck. The ribbon signified to the child and the teacher that the child could receive social and, occasionally, food reinforcers that were administered while the children worked. When any disruptive behavior was performed, time out was used. It consisted of removing the child's ribbon for three minutes. Without the ribbon, the child could not receive any of the reinforcers normally administered (e.g., attention from the teacher). This time-out procedure effectively reduced disruptive classroom behavior.

In general, time out provides an excellent alternative to many of the forms of punishment used in everyday life, such as reprimands and corporal punishment. Very brief time out, for several seconds or a few minutes, has been effective. Longer periods of time out (e.g., 10, 20 minutes) do not necessarily increase the effectiveness of the procedure. Indeed, brief and contingent time out is quite effective, especially if many reinforcers are available in the setting and these are administered for positive behavior.

An another punishment procedure is referred to as response cost and also consists of loss of a positive reinforcer. Response cost entails a penalty of some sort contingent on behavior. With response cost, there is no time period during which positive events are unavailable, as is the case with time out. Typically, response cost consists of a fine. Examples of response cost in everyday experience include fines for traffic violations or overdue books, fees for late filing of income tax or for registering for classes beyond the due date, and charges for checks that "bounce." (Although these examples illustrate response cost, the examples do not reflect punishment administered in ways that maximize behavior change. Conditions to maximize the impact of response cost include immediacy and schedule of the fine and reinforcement for alternate behavior, to mention a few.) In applied behavior analysis, fines usually consist of loss of tokens (chips, stars, points) that are provided for positive behavior in a token economy.

As an example, response cost was used to reduce aggressive and disruptive behavior in the classroom of four preschool boys (ages 3–5). The children engaged in such behaviors as throwing things, damaging other children's materials, hitting, and screaming. Response cost consisted of providing a child with five laminated smiley faces attached to a larger sheet. The chart was labeled Good Behavior Chart and posted in the classroom for all to see. Each time the child engaged in one aggressive behavior, a smiley face was taken away. The teacher stated the reason for the loss of the smiley face and provided a reprimand. If the child retained at least one smiley face at the end of the 40-minute period, he could purchase special rewards (e.g., being the teacher's helper, access to a favorite toy). Consistent performance over at least four or five days was reinforced with additional incentives (a special grab bag). Response cost was introduced in a multiple-baseline design across children. As is evident in Figure 3, aggressive behavior changed markedly as the intervention was introduced.

Many other punishment procedures are available such as the contingent use of effort (tasks, chores), loss of privileges, and requiring individuals to rectify or correct the situation their behavior may have altered. As noted previously, the primary use of punishment in applied behavior analysis is as a supplement to a positive reinforcement program. Punishment by itself raises all sorts of objections and concerns and often is not very effective. However, mild punishment (e.g., brief time out, response cost) when supplemented with positive reinforcement for prosocial behavior can be extremely effective. Although reinforcement by itself can often be used to eliminate undesirable behaviors, the addition of very mild punishment often augments the effectiveness of the reinforcement program.

A difficulty in using punishment at all is that people familiar with punishment in every day life may implement aversive events in ways that do not enhance efficacy or that promote problems (e.g., screaming, hitting, trying to evoke emotional responses). Shouting, hitting, screaming, making threats, or shaking someone, not all that rare in the home and classroom and indeed in parent–child and

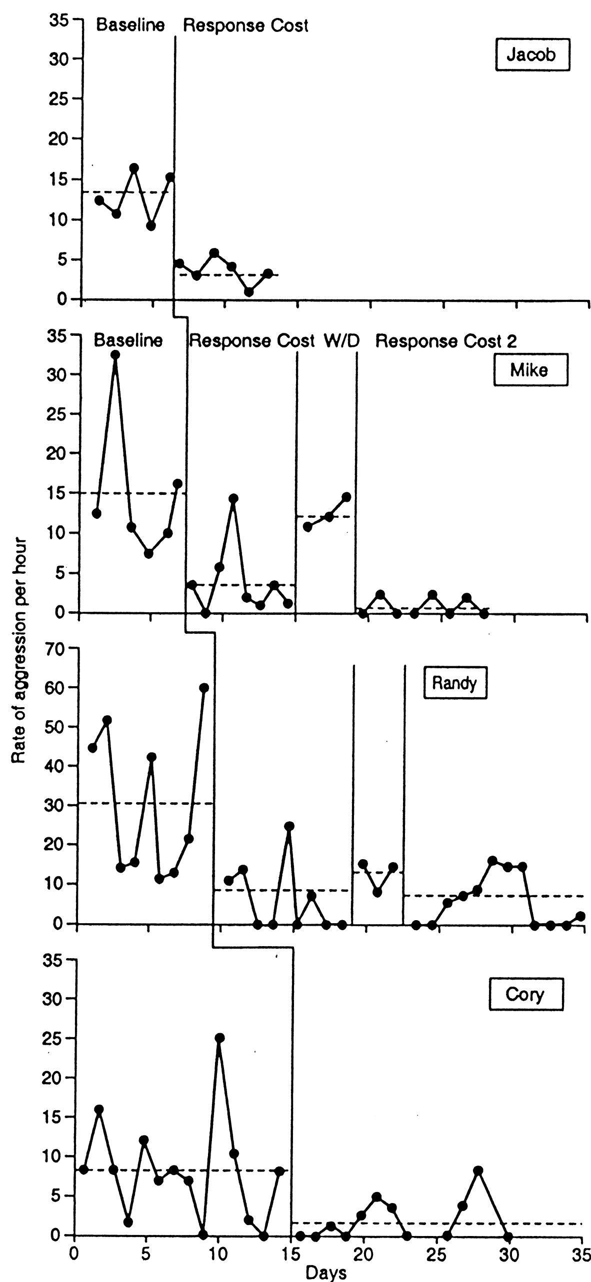

FIGURE 3 Rate of aggressive behavior during baseline and treatment conditions across subjects. [Reynolds, L. K., & Kelley, M. L. (1997). The efficacy of a response cost treatment package for managing aggressive behavior in preschoolers. *Behavior Modification, 21,* 216–230.]

spouse–spouse interactions, are not events used in applied behavior analysis. A danger of implementing punishment is that well-designed programs (e.g., two minutes of time out contingent on behavior), if not monitored carefully, may drift into one of these other punishment procedures.

C. Extinction

Many maladaptive behaviors are maintained by consequences that follow from them. For example, temper tantrums or interrupting others during conversations are often unwittingly reinforced by the attention they receive. When there is interest in reducing behavior, extinction can be used by eliminating the connection between the behavior and the consequences that follow. Extinction refers to withholding reinforcement from a previously reinforced response. A response undergoing extinction eventually decreases in frequency until it returns to its prereinforcement level or is eliminated.

Extinction has been successfully applied to diverse problems. As an illustration, extinction was used to reduce awakening in the middle of the night among infants. Nighttime waking, exhibited by 20 percent to 50 percent of infants often is noted as a significant problem for parents. Parents may play a role in sustaining night waking by attending to the infant in ways that reinforce the behavior. In this program, parents with infants (8 to 20 months old) participated in an extinction-based program to decrease nighttime awakening. Waking up during the night was defined as a sustained noise (more than one minute) of the infant between onset of sleep and an agreed-upon waking time (such as 6:00 A.M.). Over the course of the project, several assessment procedures were used, including parent recording of sleep periods, telephone calls to the parents to check on these reports, and a voice-activated recording device near the child's bed. After baseline observations, parents were instructed to modify the way in which they attended to night wakings. Specifically, parents were told to ignore night wakings. If the parent had a concern about the health or safety of the child, the parent was instructed to enter the room, check the child quietly and in silence with a minimum of light, and to leave immediately if there was no problem.

The program was evaluated in a multiple-baseline design across seven infants. Figure 4 shows the frequency of night wakings each week for the children during the baseline and intervention periods. As is evident in the figure, the frequency decreased during the intervention period. Followup consisted of assessment approximately three months and then two years later, which showed maintenance of the changes. The figure is instructive for other reasons. Two weaknesses of extinction programs were evident. First, extinction effects tend to be gradual.

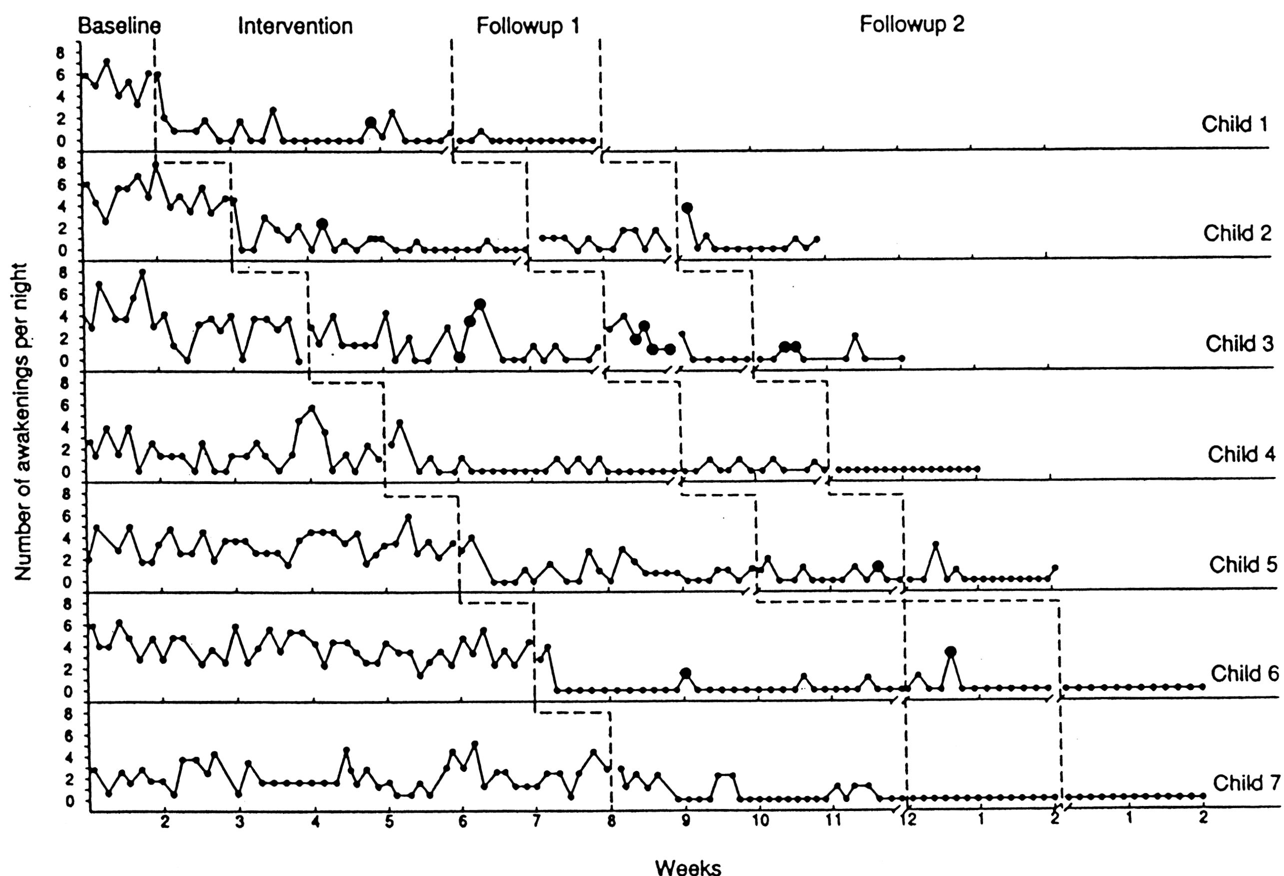

FIGURE 4 Frequency of night wakings per week for seven infants treated with extinction. The program was evaluated in a multiple-baseline design across infants. Followup 1 and 2 represent evaluation at three months and two years after the initial intervention program, respectively. The solid, large dots denote nights in which the infant was ill. [France, K. G., & Hudson, S. M. (1990). Behavior management of infant sleep disturbance. *Journal of Applied Behavior Analysis, 23,* 91–98.]

Second, during extinction the behavior may momentarily recover (i.e., emerge for one or two occasions) even though it has not been reinforced, a phenomenon referred to as spontaneous recovery. Figure 4 shows both the gradual nature of extinction and repeated instances of spontaneous recovery during the intervention and followup phases. The prospect of accidental reinforcement (e.g., attention to the behavior) during these periods requires special caution on the part of parents.

A related issue pertains to Child 3 (in Figure 4), who did not profit from the program. Parents reported difficulty in distinguishing the usual night wakings from those associated with illness of their child. Additional data revealed that these parents attended relatively frequently to nonillness awakenings during the intervention but improved during the first followup phase. The parents cannot be faulted. The pattern of behavior and eventual improvement draw attention to the difficulty in ignoring behavior and discriminating when behavior does and does not warrant attention. In any case, the demonstration is clear in showing that extinction generally was quite effective in decreasing night waking among infants.

Typically, extinction is used in conjunction with positive reinforcement. The main reason is that the effectiveness of extinction is enhanced tremendously when it is combined with positive reinforcement for behavior incompatible with the response to be extinguished. Also, the gradual effects of extinction, the emergence of the undesired behavior (spontaneous recovery), and untoward side effects are mitigated when extinction is combined with positive reinforcement. A limitation of extinction is that it is not always easy (without functional analysis) to identify what reinforcers are maintaining behavior, especially if the reinforcers are quite intermittent and hence not evident each time the be-

havior occurs. As with the use of punishment, extinction by itself does not teach the positive behaviors to be developed and may be associated with undesirable side effects. For all of these reasons, extinction usually is combined with positive reinforcement for appropriate or prosocial behavior.

Many reports have shown the successful application of extinction alone or in conjunction with other procedures (particularly reinforcement). Hypochondriacal complaints, vomiting, obsessive comments, compulsive rituals, and excessive conversation in the classroom are among the diverse problems that have been treated with extinction and reinforcement. Such applications are particularly noteworthy because they reveal that a number of maladaptive behaviors may be maintained at least in part by their social consequences.

D. General Comments

Interventions based on positive reinforcement, punishment, and extinction, merely sampled in this contribution, have been quite effective among diverse clients, settings, and target behaviors. The effectiveness can be traced to two features of applied behavior analysis. First, the principles of operant conditioning reflect potent influences on behavior. Positive reinforcement, for example, has a strong influence on behavior and has been demonstrated across multiple species and circumstances. Experimental and applied research have identified many of the conditions on which effective applications depend (e.g., immediacy and schedule of delivering consequences). Consequently, there are clear guidelines on how to apply many of the interventions effectively.

Second, the assessment and evaluation of applied behavior analysis contributes directly to program effectiveness. Ongoing measurement is made of client performance, whether the problem is changing, and to what extent. This means that during the intervention, weak, mediocre, or no effects of treatment can be identified and remedied. There are scores of applications in which programs produced mediocre effects. Alterations or additions were made in the program that then achieved the desired changes. Other approaches to treatment usually do not provide ongoing assessment and hence do not have the benefit of this immediate feedback to help decision making in treatment. Related, functional analysis is a special way in which assessment, evaluation, and intervention are interrelated. With functional analysis, the factors that are maintaining an undesired behavior or not supporting a desired behavior can be precisely identified. When functional analysis is possible, current causes of behavior are demonstrated and the information is used to develop an effective intervention.

V. APPLICATIONS

Perhaps one of the most striking features of applied behavior analysis is the scope of applications. Table 6 samples some of the applications to illustrate the breadth of the approach. Interventions have been carried out in diverse settings such as the home, at school, institutions (hospitals, rehabilitation centers, nursing homes), business and industry, and the community. Indeed, it is safe to say no other psychological intervention or approach has been applied as widely to human behavior.

The focus of behavior analysis is often on the individual. Indeed, this is strongly suggested by reliance on single-case experimental designs. Already mentioned was the fact that these designs can be applied to groups or to interventions implemented on a large scale. For example, one program (Behavior Analysis Follow Through Project) was implemented in elementary school grades over a period of several years and grade levels. The program included more than 7,000 children in approximately 300 classrooms (from kindergarten through third grade) in 15 cities throughout the United States. The program relied heavily on token reinforcement to promote academic performance and several other components, such as instructing children in small groups within the class, using academic curricula that permitted evaluation of student progress, specifying performance criteria for teachers and students, and providing special training and feedback to teachers regarding their performance and the progress of their students. The gains in academic performance of students who participated in the program were markedly greater than were the gains of students in traditional classrooms. Moreover, those gains were still evident two years after the program had been terminated and the children in the program had entered classrooms where token reinforcement was not in effect.

In large-scale programs, as for example with all people who work in a corporation, who live in a particular city or neighborhood, or who live in a dormitory, it may not be feasible to provide consequences (e.g., positive reinforcers) based on the performance of each individual. Difficulties in monitoring individual performance or insufficient resources to administer reinforcers to each individual raise special obstacles. Yet, in such circumstances, group contingencies may play an especially

TABLE 6
Sample of the Scope of Applications of Applied Behavior Analysis

Context/setting	*Interventions have been effective in …*
Therapy/treatment settings	Treating a broad range of psychological problems and psychiatric disorders including anxiety (e.g., fears, obsessive compulsive disorders, panic attacks), depression, substance use and abuse (e.g., drug, alcohol, cigarettes), conduct problems, hyperactivity, autism, and eating disorders.
Education	Improving academic performance, studying, achievement, grades, classroom deportment, creative writing, participation in activities, as relevant to elementary, middle, and high school students; mastery of the subject matter at all levels including college students. Many programs in school settings have focused on behaviors beyond the usual domain of education because schools provide a useful place to deliver the interventions. Thus, behavioral programs have been applied to reduce or prevent cigarette smoking, alcohol and drug use, and unprotected sex among adolescents.
Medicine and health	Teaching individuals to detect early signs of disease (e.g., cancer checks through self-examination), protect against sexually transmitted diseases, reduce pain associated with invasive medical procedures (e.g., lumbar taps) or postoperative recovery, and adhere to medical regimens (e.g., for cancer, diabetes).
Business and industry	Teaching workers to engage in practices that reduce accidents (e.g., when using equipment), improve health or overcome problems that compete with health and work (e.g., alcohol use, cigarette smoking). Helping individuals to obtain jobs (e.g., how to seek jobs, interview skills), improve on-the-job performance, reduce absenteeism, tardiness, improve employee customer interactions, and reduce shoplifting among customers.
Sports and athletics	Improving coaching practices, performance of athletes (e.g., in football, gymnastics, tennis, swimming, and track) and stress management among athletes.
Everyday life	Training parents to interact with their children for parents who are in special situations (e.g., handicapped child), for children who are in special situations (e.g., abused, neglected children) and parents without special difficulties or obstacles; training children to engage in safe behaviors (e.g., use of seat belts, crossing streets) or ward off dangerous situations (e.g., responding to would-be abductors). Training the elderly in nursing homes to increase physical activity and engage is more social interactions with others. Training individuals to engage in safe-driving practices, conserve energy in homes, and recycle wastes.

important role. For example, in some business organizations, special incentives are provided if a group (e.g., 90 percent of all employees) engages in a behavior of interest (e.g., donates to a charity, participates in an exercise program designed to improve health). In these situations, the interest in developing a particular behavior across many people lends itself well to group contingencies. The effectiveness of such contingencies is evaluated by charting the behavior of the group rather than the performance of one or a few individuals.

VI. ISSUES AND CHALLENGES

Although interventions based on operant conditioning principles have been extremely effective in diverse applications, many issues and challenges emerge in their application. Two salient issues pertain to the demands of implementing the techniques effectively and the importance of ensuring that the behaviors are maintained and transfer to multiple settings or conditions beyond those in which the intervention program was in effect.

A. Implementation and Program Effectiveness

The principles of reinforcement, punishment, and extinction and the techniques derived from those principles are relatively simple. Moreover, the techniques resemble practices used in everyday life, which make the behavior-change programs deceptively simple. For example, parents who are learning behavioral techniques for managing their children invariably note that these techniques are not new and that they have been using the techniques all along. They often

assert that their use of reinforcement (praise or allowance) or time out (sending the child to his or her room) has not worked. Parents are usually correct in this assertion. Yet, careful inquiry or direct observation of parent behavior in the home reveals that the procedures they have tried are faint approximations of the ways in which reinforcing and punishing consequences are used in applied behavior analysis. For example, positive reinforcers need to be contingent on performance and delivered immediately after behavior and on a continuous or close to continuous schedule, especially at the beginning of the program. As important, the target behaviors need to be carefully specified, so that reinforcement can be applied consistently and the results can be measured to see whether the program is having an impact. Rarely are these conditions in place in the causal applications of incentives or disincentives for behavior (e.g., at home or at school).

Interventions usually require consideration of antecedents, behaviors, and consequences and quite specific ways of delivering consequences. In fact, what distinguishes behavior modification techniques from everyday uses of reward and punishment is *how* the techniques are applied and evaluated. Several conditions influence whether reinforcement, punishment, and extinction are effective, and hence the interventions are more than merely providing some consequence for behavior. Once these conditions (e.g., use of prompts, shaping) are faithfully rendered, one may be in a better position to say that the procedures have not worked.

Interventions based on the principles of operant conditioning bring to bear important influences to change behavior. Yet, the techniques do not always achieve the desired outcomes. There have been many instances in which behavioral programs failed to achieve the desired changes. No change may have occurred, or the change may be too small to make an important difference in the lives of the clients or those with whom they interact. The most common reason for program failures pertains to poor, mediocre, and inconsistent implementation of the contingencies. Interestingly, several studies have shown that slight modifications in the program when clients have failed to respond often produce the desired behaviors. In some cases, the changes occur from implementing the program in ways more conducive to producing change (e.g., more immediate reinforcement). In other cases, the procedures are changed. For example, defiant and aggressive child behavior in the home or at school may not be altered by simply having parents praise appropriate child behavior. The undesired behaviors may not decrease until mild punishment (time out, response cost) is added to the contingencies.

A significant challenge is the training of behavior-change agents (e.g., parents, teachers, staff of the institution, peers who carry out the program). Many successful programs have devoted considerable attention to ensuring that these behavior-change agents are well trained. Once these change agents have been trained, their behaviors are often monitored carefully to ensure that the contingencies are carried out correctly. Without careful training and monitoring, the care with which interventions are implemented may deteriorate over time. Assessment and monitoring of those who implement the intervention may need to become a permanent part of the setting (e.g., school, hospital). For example, large-scale applications of behavioral programs in schools often include assessment and monitoring of teacher and student behavior to ensure that the techniques are implemented correctly and that children are learning. The assessment and supervision practices are central to the effectiveness of the procedures, hence, their incorporation as part of the program is critically important. A major challenge is not just changing client behavior, but also changing the behavior of those responsible for implementing the program.

B. Response Maintenance and Transfer of Training

Interventions discussed in this chapter clearly show that behavior can be changed. Two critical questions are whether the changes will be maintained once the special programs are ended and whether the changes during and after the program will extend to settings, situations, or circumstances that were not included in the program. These concerns reflect response maintenance and transfer of training, respectively. Maintenance of behavior changes might not be expected after an intervention program is ended. If the client responds to changes in the contingencies of reinforcement, one might expect changes to be lost after the intervention is terminated. Similarly, if clients make discriminations about the situations in which the intervention is and is not in effect, one might expect changes in behavior to be restricted to those situations in which the program was in effect.

Early in the development of applied behavior analysis, almost exclusive attention was devoted to changing behavior and indeed seeing whether significant behaviors of impaired populations (e.g., persons with mental retardation or psychiatric disorder) could be significantly helped by the interventions. As change became demonstrated in diverse contexts and settings, further attention was accorded to procedures that can be used during a

program to promote response maintenance and transfer of training. Currently, there are several procedures that can be implemented during an intervention program that help to ensure that the desired behaviors are maintained and are not restricted to situations, persons, or settings associated with the intervention when it was initiated. Table 7 highlights several strategies that are used after behavior has been developed to foster maintenance and transfer of the changes.

As an illustration, transfer of training was systematically trained in one program to ensure that the behaviors extended to the situations of interest after training. In this program, adult mentally retarded women were trained in sexual abuse prevention. Sexual abuse of individuals with mental retardation is a significant problem rarely discussed in the media or in the context of sexual abuse more generally. In this project, the investigators trained women to refuse sexual overtures from others, to say no, to leave the situation, to tell the incident to others, and to use similar behaviors when inappropriate approach responses were made to them. Training was conducted with pairs of women in which they practiced the target behaviors (what they would say and do) in a set of hypothetical situations. Training developed the desired behaviors using role play, practice, feedback, and praise. Then tests were provided in a realistic situation in which an unknown male made approach responses. The results revealed that the behaviors developed in the training sessions but did not transfer very well to ordinary situations. Then training was then conducted in more everyday situations with confederates (research assistants

TABLE 7
Selected Strategies to Develop Response Maintenance and Transfer of Training

Technique	*Brief description*
Programming naturally occurring reinforcers	After behavior has been established with a special program (e.g., token economy), the consequences that are more readily available in the natural environment (e.g., attention from others) are used to influence behavior.
Gradually removing or fading the contingencies	The intervention can be removed or faded by making the consequences increasingly intermittent or more delayed after the behavior is well established. Also, the intervention can be organized into levels so that as behavior is performed consistently, the incentives increase but there is less frequent and immediate control the contingencies exert over behavior.
Expanding stimulus control	During training, the desired behavior may become associated with specific stimulus conditions such as who administers the program, the setting, or circumstances (e.g., time of the day). After behavior is developed, stimulus control can be expanded by introducing a few other instances or examples (e.g., extending the program to more than one time). Behavior changes can be extended generally in this way and not all conditions or circumstances of interest need to be incorporated into training to achieve broad generalization across conditions.
Training the general case	A systematic way of ensuring transfer of training by specifying the set of stimulus situations across which a behavior is to be performed after training has been completed, defining the range of relevant dimensions or characteristics across which they vary, defining the range of response variations or the different behaviors required across the set of stimulus situations, and selecting and teaching examples that sample from the range of the stimulus and response domains of interest.

Note. For elaboration of these methods, see Kazdin, 2001.

working for the study) who made approach responses. As the behaviors developed, training ceased and assessments were made unobtrusively. The results indicated that the behaviors now carried over to everyday situations. In addition, assessment in everyday situations one month after the program ended indicated that the behaviors were maintained. The study conveys the importance of introducing into training the situations to which one wants the behavior to generalize.

Behaviors occasionally are maintained after the program is ended and transfer to novel settings, even if no special procedures are in place to foster these extensions. However, to ensure maintenance and transfer, special procedures often are introduced before the program is completely ended. Typically several procedures (e.g., as those identified in Table 7) are combined to ensure maintenance and transfer and have been shown to be effective in many applications of treatment.

VII. SUMMARY

Applied behavior analysis refers to an approach toward treatment that includes an emphasis on antecedents, behaviors, and consequences and how these can be arranged to promote behavior change and a methodological approach toward assessment and evaluation. The interventions rely on principles of operant conditioning (reinforcement, punishment, extinction, stimulus control) and the scores of techniques that can be derived from these principles. The scope of interventions has been remarkable and encompasses individuals ranging from infants to the elderly in diverse settings (e.g., home, school, , nursing homes, facilities for delinquents, prisoners, psychiatric patients, businesses, and the community at large). Also, many medical (e.g., adherence to medication, recovery from surgery, dieting and exercise), psychological problems (e.g., various psychiatric disorders), and educational objectives (e.g., reading, academic competence) have served as target foci. The diversity of applications derive from the generality of the principles and their well-established bases in laboratory research.

Implementing the techniques that derive from the principles represents a significant challenge. Altering the contingencies of reinforcement has special requirements if behavior change is to be achieved. Consequently, the seeming simplicity of the interventions is deceptive. A program involving praise or token reinforcement for behavior can easily succeed or fail based on how systematically and consistently the consequences are provided. The special feature of applied behavior analysis that also contributes to the effectiveness of the interventions pertains to the systematic assessment and evaluation of behavior-change programs. Collection of ongoing data while the program is in effect allows one to make changes to ensure that the desired outcomes are achieved.

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See Also the Following Articles

Classical Conditioning ■ Conditioned Reinforcement ■ Contingency Management ■ Functional Analysis of Behavior ■ Negative Reinforcement ■ Operant Conditioning ■ Positive Reinforcement ■ Response Cost ■ Time-Out ■ Token Economy

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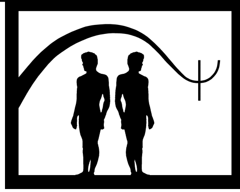

Applied Relaxation

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I. Description of Applied Relaxation
II. Theoretical Basis for Applied Relaxation
III. Applications and Exclusions
IV. Empirical Studies
V. Summary
Further Reading

GLOSSARY

application training The use of rapid relaxation in anxiety-arousing situations to reduce and eventually abort anxiety reactions.

cue-controlled relaxation The association of the cue "Relax" with the state of relaxation.

differential relaxation Practicing being relaxed in those muscles not necessary to tense for the activity at hand.

progressive relaxation The tensing and relaxing of 23 major muscle groups.

rapid relaxation A very brief relaxation used in natural situations to become relaxed quickly (20–30 seconds).

release-only relaxation Relaxing the muscle groups without the prior tension.

I. DESCRIPTION OF APPLIED RELAXATION

A. General Features of Applied Relaxation

Applied relaxation (AR) is a cognitive-behavioral coping technique first described by Chang-Liang and Denney in 1976 and later extensively developed by Lars-Göran Öst during the late 1970s and early 1980s. Applied relaxation takes as its starting point the abbreviated progressive relaxation (PR) developed by Joseph Wolpe in the 1950s as part of systematic desensitization. However, PR is not suitable as a coping technique since it takes 15–20 minutes for the patient to go through the various muscle groups in order to become relaxed. The relaxation has to be reduced into a "portable" skill that patients can use in any situation when needed. Applied relaxation is a technique that in a number of steps teaches patients to relax rapidly, the goal being 20–30 seconds, in natural situations where their problems occur.

The first step of PR training, usually takes 2 weeks of practice and the time to become relaxed is 15–20 minutes. The second step, release-only relaxation, is commonly practiced for 1 week and the time to relaxation is reduced to 5–7 minutes. The third step, cue-controlled relaxation, also requires a week of practice, and relaxation is achieved in 2–3 minutes. The fourth step is differential relaxation, which is practiced for 2 weeks and relaxation is achieved in 1 minute and the time is reduced to 1 minute. The fifth step, rapid relaxation, is also practiced for 2 weeks allowing the patient to become relaxed in 20–30 seconds. The final step, application training, usually takes 2 weeks, and now the rapid relaxation is used in natural anxiety-arousing situations.

1. Rationale for AR

In any cognitive behavior therapy it is important that patients understand the rationale for the treatment in

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question. The therapist should give an easily understandable theoretical description regarding the patient's problem and a description of how AR is scheduled and supposed to work. When presenting the treatment rationale it is also useful to give the patients a written version (1–2 pages) that they can read during the presentation and take home to examine more carefully. Below is an example of a rationale that might be used in the treatment of a person with panic disorder.

During a panic attack your are likely to feel very anxious and experience a lot of symptoms, such as palpitations, muscle tension, sweating, breathlessness, and dizziness. Usually, the attack seems to come "out of the blue" in other words without warning, making you want to leave the situation. As you leave and get home to safety the symptoms dissipate, but you are usually exhausted and fear what will happen the next time you have a panic attack.

There is a treatment method called AR that can help you cope with and eventually stop the anxiety symptoms altogether. The first thing you do in this treatment is to observe your panic attacks in order to become aware of the very first sign(s) of a panic attack coming on. The observations are recorded in a panic diary, and over the next couple of months you will realize that even if the panic attack starts rapidly there is usually a period of 30–60 seconds between the first sign and the full-blown panic attack. It is during this period you have a chance to do something to prevent the symptoms from developing further, such as "to nip it in the bud." Thus, these signs are used as an "alarm clock" to apply a relaxation technique that will counteract the anxiety symptoms.

Most patients wonder how it is possible to relax in such a short time? What you do in AR is to start by learning PR which takes 15–20 minutes. In PR you briefly tense and then relax the big muscle groups of your body. After practicing that for two weeks you then work on relaxing by using the release-only procedure, omitting the muscle tensing portion of the technique. This reduces the time it takes for you to get relaxed to 5–7 minutes. The next step is called cue-controlled relaxation, a step in which you learn to associate the self-instruction "Relax" with the state of relaxation. Then follows differential relaxation with the purpose of teaching you to do various activities while being relaxed in the muscles that don't have to be actively engaged in those activities. In this phase you might practice relaxing while sitting, standing, and walking. The next step is called rapid relaxation, which usually takes 20–30 seconds, and during this step you practice to relax in natural, but not anxiety-arousing situations. In the final phase, application training, you apply the skill of relaxing rapidly in those situations in which panic symptoms occur. Over the 8–10 weeks of training you record your panic attacks in the panic diary. This monitoring results in a lot of information about the first signs that tell you a panic attack is coming on. By applying rapid relaxation as soon as you experience the first sign you will learn that you can stop the anxiety symptoms from escalating to a high level. After a few weeks you will be able to abort the first signs or symptoms altogether. When the panic attacks have disappeared you will have the opportunity to follow a maintenance program to keep your relaxation skill fine tuned and ready to apply whenever you may need it in the future.

After the therapist has provided the treatment rationale patient questions are answered. The patient is then encouraged to take the written description home and read it carefully in order to discuss it with the therapist at the next session, during which time the treatment starts.

2. Homework Assignments

Since therapists usually only see patients once a week, the relaxation training requires that patients practice at home twice per day the skills presented in session. Practice is recorded on self-monitoring forms provided by the therapist. On these forms the patient records the degree of relaxation experienced immediately before and after the practice, the approximate duration of the practice, and any comments the patient may have. The scale for rating the degree of relaxation is a 0–100 scale, where 50 is the "normal state" (neither relaxed nor tense). A 0 means complete relaxation and 100 means maximal tension/anxiety. The same form is used for the first four steps of AR training, while alternative forms are used during rapid relaxation and application training.

It is also important to realize that it is rare to find patients that can complete every weekly practice assignment. Patients are instructed to make a note regarding the reason for missing a practice session. Furthermore, it is emphasized that it is better to practice only once a day in a calm and nonstressful situation than twice a day if both practice occasions are carried out during a fairly high level of time pressure. If patients do not have time to practice more than once a day, treatment will take longer.

3. Transitions

Patient records of the relaxation training progress at home serve as the therapist's guide in deciding when it is time to proceed to the next step in treatment. When patients experience an average increase in relaxation

from immediately before to after homework practice of 20–30 points, such as a prerating of 50 and a postrating of 20–30 on the 0–100 scale, it is time to continue. It is not necessary for patients to achieve very high levels of relaxation (ratings of 0–10) in order for the AR skill to be acquired.

B. Observation of Early Signs of Anxiety

In order for applied relaxation to work optimally patients must use the relaxation technique as early as possible in the response to an anxiety reaction or a panic attack. Reacting quickly to the first signs of anxiety greatly increases the patients' ability to employ AR effectively. In order to increase the patient's awareness of the initial signs of anxiety, homework assignments involve observing and recording these reactions. In the panic diary the patient records the situation, the symptoms of the panic attack, and the severity of the attack (0–100), as well as the very first signs that were experienced.

Therapist and patient examine the panic diary and focus on identifying the earliest signs of the onset of the panic attacks. An attempt is made to determine what the patient felt, thought about, or did just before the first symptom occurred. Sometimes it can be advantageous to let patients imagine their most recent panic attack. This procedure often assists patients in remembering things that they did not notice while recording the actual attack. Besides making the patient more aware of the early signs of anxiety, it is important to get an approximate estimate of the time between the first sign and the peak of the panic attack. As patients realize that this time period is perhaps as long as 30 seconds to several minutes, confidence that they will be able to apply AR to the early signs of anxiety and prevent it from developing into a panic attack begins to grow.

It is valuable to collect and summarize the reported early signs of anxiety. These recordings provide a database for use later in treatment. In particular, in the application phase of AR these data will allow the therapist to present to patients a systematic summary of early signs ranked by frequency and perhaps divided according to some systematic grouping. This list will prove useful as patients begin to apply AR in real life situations.

C. Progressive Relaxation

Before starting PR training, patients should be given a rationale for the PR. It should be noted that PR is easily learned and does not require any special abilities. The method involves learning to relax by first tensing and then relaxing different muscle groups in the body. Briefly tensing muscles makes it easier to experience the contrast between a tensed and a relaxed muscle, and to notice tension in various muscles during daily activities. The different muscle groups that are included can be conceived of as a menu from which patients can choose. There is absolutely nothing sacred about the constellation of muscle groups. The important thing is that as patients achieve a high degree of relaxation, they need not always follow the PR instructions to the letter. For some patients the tensing/releasing of a certain muscle group can lead to an experience of increased tension in that muscle. If that is the case, that particular muscle group may be deleted from the relaxation training.

Progressive relaxation training begins with demonstrating to patients exactly how the different muscle groups are to be tensed and relaxed. The therapist sits opposite the patient and models the procedure across the different muscle groups, while the patients simultaneously perform these behaviors. Below is a list showing the muscle group and the order in which tensing/relaxing exercises are presented.

1. Tense your right hand (make a tight fist)
2. Tense your left hand (make a tight fist)
3. Tense both hands (make tight fists)
4. Tense your biceps
5. Tense your triceps (stretch your arms without lifting them)
6. Wrinkle your forehead by raising your eyebrows
7. Wrinkle your eyebrows (bring them tight together)
8. Close your eyes tight
9. Tense your jaw muscles by biting your teeth together
10. Push the tip of your tongue against the roof of your mouth
11. Press your lips together
12. Push your head back against the top of the chair
13. Bend your head forward, touching your chin to your chest
14. Raise your shoulders towards your ears
15. Raise your shoulders towards your ears, and move them in a circular motion
16. Breathe with calm regular breaths
17. Take a deep breath; fill your lungs and hold your breath
18. Tighten your stomach muscles
19. Pull your stomach inward
20. Bend your back in a curve

21. Tense your thighs by pressing your heels to the floor
22. Point your feet and toes down (forward)
23. Point your feet up towards your face

During relaxation training patients are prompted to sit as comfortably as possible, loosen tight fitting clothes, and close their eyes. Room lights can be dimmed and the therapist's tone of voice should be low and somewhat monotonous, without being sleep inducing. Furthermore, it is important to remember that it is the relaxation and not the tension that is the important part of PR. The tension is only included as a contrast to the relaxation. The relation between the duration of time the patient tenses and relaxes the different muscle groups must be 1:2 or 1:3; that is, if a muscle is tensed for 5 seconds, the following relaxation interval should be at least 10–15 seconds.

D. Release-only Relaxation

The introduction provided before the start of the release-only phase of PR is that this step is intended to reduce the time it takes for the patient to become relaxed from 15–20 minutes with the PR to about 5–7 minutes, and to help them learn to relax without having to tense muscle groups. Patients are told they will be instructed to focus on the different parts of the body and are asked to relax as much as possible. If, after having tried to relax they still feel tension in a muscle, they should tense the muscle briefly and then relax it (such going back to the procedure used during the PR). During this phase of training the therapist adjusts the instruction to a pace which allows patients time to perform the tension-release exercises when necessary.

Below is an example of the instructions used in this phase: "Breathe with calm, regular breaths and feel how you relax more and more with each breath … Just let go …. Relax your forehead … eyebrows … eyelids … jaws … tongue and throat … lips … and your entire face …. Relax your neck … shoulders … arms … hands … and all the way out to your fingertips …. Breathe calmly and regularly … and let the relaxation spread to your stomach … waist and back …. Relax the lower part of your body, your buttocks … thighs … calves … feet … and all the way down to the tips of your toes …. Breathe calmly and regularly and feel how you relax more and more with each breath … Continue to relax like that for a while …. [Pause for about 1 minute.] Now take a deep breath, hold it … and let the air out slowly … slowly … Notice how you relax more and more."

E. Cue-Controlled Relaxation

The purpose of cue-controlled relaxation (CR) is for the patient to learn to associate the self-instruction "relax" with a relaxed state, and further reduce the time it takes to become relaxed. Cue-controlled relaxation may be introduced to patients as follows: "Most of us have probably been in situations where we or an acquaintance have been very nervous. In that situation we often get the advice to 'take it easy and relax.' This advice very seldom works since it is given when we are already mentally and physically at a high arousal level. In order to relax in these situations you must practice pairing the relax self-instruction with the relaxed state. Once you can successfully make yourself relaxed, you then need to start practicing this cued relaxation in increasingly more stressful settings."

The session starts by the patient relaxing on their own with the help of the release-only version of PR, which the patient has been practicing for 1–2 weeks. When having achieved a deep degree of relaxation the patient signals the therapist by lifting one index finger. Focus in CR is on the breathing and in following the therapist's instructions on the pace of their breathing pattern. Just before breathing in, the therapist says "inhale" and just before breathing out, the therapist says "relax." This is done 4–5 times. Then the patient is instructed to think "inhale" and "relax" silently in pace with the breathing rhythm. After the patient has been doing this on their own for about 2 minutes, the therapist comes back with the instruction "inhale … relax" a further 4–5 times, after which the patient takes over and does this exercise covertly for a couple of minutes. This practice sequence only takes about 10 minutes and after a break of 10–15 minutes during which one can do other things (such as going over the panic diary), it is suitable to repeat the entire instruction during the session.

F. Differential Relaxation

1. Introduction to Differential Relaxation

In order for AR to be an effective coping skill it must be "portable," The patient should be able to use it in practically any situation and not be constricted to a comfortable armchair in the home or in the therapist's office. The primary purpose of differential relaxation (DR) is to teach the patient to relax in other situations besides in the comfortable armchair. The secondary purpose of DR is to learn not to be tense in the muscle groups not being used for the activity at hand.

2. Instruction of Differential Relaxation

The session starts with the patient sitting in the armchair relaxing on their own with the help of CR. When the patient has signaled that they are relaxed, they then follow the instruction to perform certain movements with different parts of the body while at the same time concentrating on being as relaxed as possible in the rest of the body. During the performance of these movements the patient should scan the body often (i.e., think through the different muscle groups) in order to discover possible tensions, and in that case they should relax away these tensions. After the patient has signaled that they are relaxed the following instruction is given.

"Continue to relax as much as possible in the entire body. While you do that … open your eyes and look around in the room without moving your head. Look to your left … and to your right … up to the ceiling … and down to the floor. Concentrate on relaxing as much as possible in the rest of the body … Now do the same thing but also turn your head in order to take in a larger field of vision. Look to the left … and to the right … up to the ceiling and down to the floor. Good! Take the head back to a comfortable position and relax as much as possible. Let your arms rest against the elbow rests and now lift the right hand a bit from the support. Concentrate on the relaxation in the left hand and arm … now stretch the arm straight out … and straight up in the air … focus on the relaxation in the left arm … and now take the right arm back to a comfortable position on the armrest. Relax as much as possible in your right arm and do the same thing with the left arm. Lift the left hand a little bit from the armrest. Concentrate on the relaxation in the right hand and arm … Now stretch the arm straight out … and straight up in the air … Focus on the relaxation in the right arm … and take the left arm down to a comfortable position on the armrest. Relax as much as possible in the left arm and the entire body … Now bend the right foot up towards the face while you concentrate on relaxing in the left foot … and stretch the right leg straight out. Focus on the relaxation in the left leg … and take the right leg down and relax. Relax as much as possible in the right leg and now do the same thing with the left leg. Bend the left foot up towards the face while you concentrate on relaxing in the right foot … and stretch the left leg straight out. Focus on the relaxation in the right leg … and take the left leg down and relax. Relax as much as possible in the left leg and the entire body; the head, the arms, the chest, and legs."

After finishing the instruction you should ask the patient to note the degree of relaxation after using CR when signaling to the therapist, before starting to do the movements, and after all the exercises have been completed. What you often find is that the patient has achieved a good degree of relaxation and performing the movements has not led to less relaxation; in many cases the relaxation has instead been deeper after the exercises. You should also ask the patient to estimate how long it took them to become relaxed, which almost always gives the instructor the chance to praise the patient for achieving the relaxation in a shorter time than was estimated.

3. Further Steps in Differential Relaxation

After practicing in an armchair, the same procedure is repeated while the patient is sitting in an ordinary chair. Then you can let the patient sit in an office chair by a desk and perform various activities that are natural to that situation, such as writing, typing, and making phone calls. These three components usually cover one session and during the next session you proceed by teaching the patient to relax while standing, and doing the same activities as while sitting, except for the use of their legs. Finally, the patient should practice being relaxed while walking. In this situation it is an advantage to have a fairly long corridor to practice in.

G. Rapid Relaxation

1. Introduction to Rapid Relaxation

The purposes of rapid relaxation (RR) are to teach the patient to relax in natural but not anxiety-arousing situations, and to further reduce the time it takes to become relaxed. The goal for this is 20–30 seconds. In order to reach these goals the patient should use rapid relaxation 15–20 times a day in natural situations. At this stage it is very important that the therapist spends some time to thoroughly go over the goals with the patient and to write down suitable situations that function as signals for RR training. The therapist asks the patient to describe what an ordinary day looks like to them and what they do between getting out of bed in the morning through going to bed at night. Among those activities that the patient does one can choose signal situations in such a way that it make up at least 15 practice occasions per day.

2. Instruction of Rapid Relaxation

When the patient is relaxing in natural situations during this phase of AR the relaxation has largely been reduced. The patient is instructed and the therapist models the following sequence:

1. Take a deep breath and slowly let the air out
2. Think "relax" quietly each time you breathe out
3. Scan your body for any signs of tension and relax as much as possible in the situation
4. Stay in the relaxed state for 30–60 seconds.

If, after doing all the above, the patient still feels that they haven't achieved a deep enough degree of relaxation, one can take one more deep breath as described above. In some cases the entire sequence can be repeated for a third time. After this the patient should be content with the degree of relaxation achieved. Otherwise there is a risk that the patient will trigger symptoms of hyperventilation, which of course counteracts the purpose of RR.

H. Application Training

1. Introduction to Application Training

The only rationale you give the patient at this stage is that it is now time to start practicing in reality what they have learned in theory. Before starting this phase it is very important to give the patient an instruction that sets their expectations at the right level. You remind the patient that applied relaxation is a skill and as with any other skill it takes practice to refine it. This means that the patient should not expect that AR functions at 100% the first time it is applied, such as with a panic attack. Instead, one must be satisfied with the anxiety not increasing as much as it had before, but that it levels out at a mild to moderate level. It is very important that the patient does not get demoralized but that they continue to apply AR every time they are in an anxiety situation. Relatively soon one will notice an effect from AR, and eventually the anxiety reactions will dissipate altogether.

Before the patient goes out into real life situations and starts applying the relaxation in these situations, one must go over the list of early signs that the therapist has put together during the course of the treatment. First, the patient should try to describe by heart the early signs that have been recorded during their panic attack. Second, the patient should be given the list that the therapist has collected as a memory aid for them to start applying the relaxation technique in real-life situations. In this way, the patient's awareness of these early signs is increased directly during the phase where the application is going to take place.

2. Practical Application Training

A majority of panic patients do not think that they have a need for any special form of application training. For these patients it is enough to give them a rationale before starting the application training. This is to get their expectations at the right level, after which they are confident enough to start applying the relaxation skill in real life panic situations.

In some panic patients it has turned out to be useful to provoke a "mini-attack" during therapy for which one can practice applying AR. In this situation different methods to provoke a panic reaction can be used and the choice of the method used is dependent on which of the techniques most readily provoke panic symptoms in the patient. Voluntary hyperventilation during 1–2 minutes with 30 breaths per minute will in 50–60% of the patients produce symptoms that remind them of, or are the same as, a naturally occurring panic attack. If this technique is used, it is appropriate to let the patient breath normally using stomach breathing instead of taking a deep breath at the beginning of rapid relaxation, since the latter might be a continuation of the hyperventilation. Another technique that can be useful in some patients is using physical exercise such as letting the patient run up and down the stairs for a couple of minutes in order to get them to palpitate, which in turn one fears is the beginning of a panic attack. In patients where dizziness is an important panic symptom one can spin the patient around on an office chair for 20–30 seconds.

One further possibility is to let the patient imagine a difficult panic attack that has occurred to them before or during treatment. In this situation it is suitable to have the therapist describe the situation and the panic symptoms to the patient and letting the patient signal by raising a finger when they experience the first sign of anxiety in the current situation. When the patient has signaled, one should let them keep the image of that situation for a while (4–5 seconds) and then you should instruct the patient to stop thinking about the described situation and use AR to counteract the reactions.

II. THEORETICAL BASIS FOR APPLIED RELAXATION

So far there are no developed theoretical models to explain the mechanism of AR. However, it is possible to use a modification of the type of vicious circle explanation that has been developed for cognitive therapy in panic disorder. This model assumes that independently of what kind of a eliciting stimulus or what type of initial reaction follows there is an interaction between physiological and cognitive reactions, culminating in a

panic attack. The purpose of AR is to break the vicious circle as quickly as possible in order to stop the first signs of anxiety from escalating into a panic attack. As the patient starts using the application skill they are fully occupied by concentrating on that skill and thus the probability is lower that the chain of negative thoughts will start to develop.

Since there are no studies regarding the mechanism of change for AR at this time one can only speculate concerning this issue. Personally, I believe that AR works through the patient having acquired the skill to rapidly achieve a state of relaxation, which counteracts the anxiety reactions both on a physiological and a cognitive level. Perhaps Bandura's self-efficacy theory can be used in this regard. There are at least three contributing factors which cannot be disregarded:

1. *The reduction of the general tension level in the body.* As this happens the probability is reduced that small stressors will, when they are added to the ambient tension level, lead to the patient ascending over the panic threshold.
2. *Increased awareness and knowledge about anxiety reactions.* As the patient learns to identify early signs of anxiety they will learn more about what anxiety is and experience it in a more differential way instead of a "big black lump" or "lightning out of the blue."
3. *Increased self-confidence.* By using the relaxation skill in natural situations and noticing that it works, one can reduce or abort the anxiety altogether. The patient develops an increased confidence in their own ability to do something proactive. The patient is no longer a helpless victim of panic.

III. APPLICATIONS AND EXCLUSIONS

Applied relaxation is a coping technique that was primarily developed for the treatment of nonsituational anxiety or panic attacks. However, research and clinical applications show that it is a method that is useful for many different disorders.

In randomized clinical trials, AR has been evaluated for specific phobias such as social phobia, agoraphobia, panic disorder, generalized anxiety disorder, tension headache, mixed headache, migraine, pain (low back and upper extremities), epilepsy, tinnitus, Ménière's disease, hearing impairment, nonulcer dyspepsia, and also to improve the immune defense system in cancer patients. Furthermore, nonrandomized pilot studies have evaluated AR for stress reactions, insomnia, menopausal symptoms, genital herpes and as a stress-management technique for collegiate field hockey players, soccer players, and novice rock climbers.

In some of the disorders, not including anxiety, a combination of AR and other behavioral methods have been used. In general, AR seems to be a suitable treatment method for problems where the main component is anxiety or stress reactions, or at least is an important part of the problem. Different physiological reactions should also be part of the problem picture of the patient.

So far there are no direct contraindications in the research or clinical application of AR. The fact that AR has been used for schizophrenic patients, without the predicted "psychotic breakthrough" that psychodynamic therapists talk about, speaks for its utility in a wide range of psychiatric, psychosomatic, and somatic problems.

IV. EMPIRICAL STUDIES

There are 33 studies published between 1981 and 2000, 15 of those studies included various anxiety disorder patients, while the remaining 18 focused on different somatic disorders (headache, pain, epilepsy, tinnitus, Ménière's disease, hearing impairment, dyspepsia, and cancer).

In 19 of the studies, AR was compared to a control condition (waitlist or attention-placebo). In all instances, AR yielded significantly better results.

These studies contain 28 comparisons between AR and another active treatment. AR was found significantly more effective then progressive relaxation in panic disorder, than cognitive treatment in agoraphobia, and nondirective therapy in generalized anxiety disorder. AR was less effective than cognitive therapy in two studies of panic disorder.

AR was found as effective as exposure in claustrophobia, blood phobia, and agoraphobia; as with cognitive therapy in panic disorder, GAD, and tinnitus; as with self-instructional training in social phobia and dental phobia; as with social skills training in social phobia; as with applied tension and the combination of AR and applied tension in blood phobia; as with imipramine in panic disorder; as with anxiety management training for anxiety in schizophrenic patients; as with the combination of AR and cognitive therapy in GAD; as with progressive relaxation in mixed headache; as with biofeedback and the combination of

AR and biofeedback in pain; as with the combination of AR and an operant program in pain; and as with transcutaneous nerve stimulation in Ménière's disease. Finally, the combination of AR and an operant program was as effective as CT and the operant program, and the operant program alone, in pain patients. This combination was also more effective than regular treatment in another study of pain patients.

The conclusion that can be drawn from this is that (with two exceptions) AR is more effective than, or as effective as, other well established treatment methods for various anxiety disorders and psychosomatic/somatic disorders.

Twenty-four of the 33 studies report follow-up results on average 11 (range 4–24) months after the completion of treatment. A comparison of the percent improvement on the most important measure in each study showed that the mean pre-post change was 53% and the mean pre-follow-up change was 60%. Thus, not only were the treatment effects for AR maintained almost a year after treatment, but there was a small further improvement during the follow-up period.

V. SUMMARY

Applied relaxation is a coping technique consisting of a series of steps which teaches the patient to reduce the time it takes to become relaxed from 15–20 minutes to 20–30 seconds and to apply this skill in naturally occurring anxiety situations. The treatment usually takes 8–10 weeks to complete and clinical experience and research show that 90% of the patients acquire the skill of being able to relax rapidly. While first developed for nonsituational anxiety disorders, AR has successfully been applied to other anxiety disorders as well as various psychosomatic and somatic disorders, such as headache, pain, epilepsy, tinnitus, dyspepsia, and cancer. A summary of the randomized clinical trials shows that AR is significantly more effective than control conditions and as effective as various well-established treatment methods with which it has been compared. Follow-ups, on average 11 months after the end of treatment, show that not only have the treatment effects been maintained, but also on average there is a further improvement.

See Also the Following Articles

Anxiety Management Training ■ Applied Tension ■ Behavioral Treatment of Insomnia ■ Homework ■ Progressive Relaxation ■ Relaxation Training ■ Restricted Environmental Stimulation Therapy ■ Stretch-Based Relaxation Training

Further Reading

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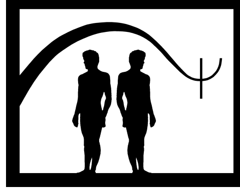

Applied Tension

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I. Description of Applied Tension
II. Theoretical Basis for Applied Tension
III. Applications and Exclusions
IV. Empirical Studies
V. Case Illustration
VI. Summary
Further Reading

GLOSSARY

application training The application of the tension technique when experiencing the early signs of a blood pressure drop while being exposed to blood stimuli.

blood-injury-injection phobia The fear and avoidance of seeing blood, injuries or receiving an injection or other invasive medical procedures.

diphasic pattern The initial increase followed by a sharp decrease of blood pressure when exposed to blood stimuli.

early signs The very first (idiosyncratic) signs that the blood pressure is dropping.

tension technique The tensioning of the arms, the chest, and the leg muscles.

I. DESCRIPTION OF APPLIED TENSION

A. General Features of Applied Tension

Applied tension (AT) is behavioral coping technique, first described by Kozak and Montgomery in 1981 in a case study and later developed within Öst's research project on the treatment of blood-injury-injection phobia. It consists of two components: the learning of an effective tension technique, and the application of this technique while being exposed to blood-injury stimuli. In its original form AT is a five-session treatment with homework assignments to carry out between sessions, but later research has shown that a one-session (2 hours) version is as effective. Both versions will be described.

B. The Physiological Response Pattern

When a patient with a specific phobia encounters the phobic stimuli the typical response pattern is an immediate activation of the sympathetic branch of the autonomic nervous system (i.e., increase of heart rate, blood pressure, skin conductance, etc.). If the patient remains in the situation there is a gradual reduction back to baseline levels. In contrast to this, patients with blood-injury phobia, and to a lesser extent those with injection phobia, usually show a diphasic pattern. After an initial increase in blood pressure and heart rate there is a sharp decrease in these variables, which eventually leads to fainting when the cerebral blood pressure has fallen below a critical level. This is illustrated by Figure 1 describing the blood pressure of a blood phobic patient treated in our clinic. The 10-minute baseline shows a rather stable systolic blood pressure (SBP) around 120 mmHg and diastolic blood pressure (DBP)

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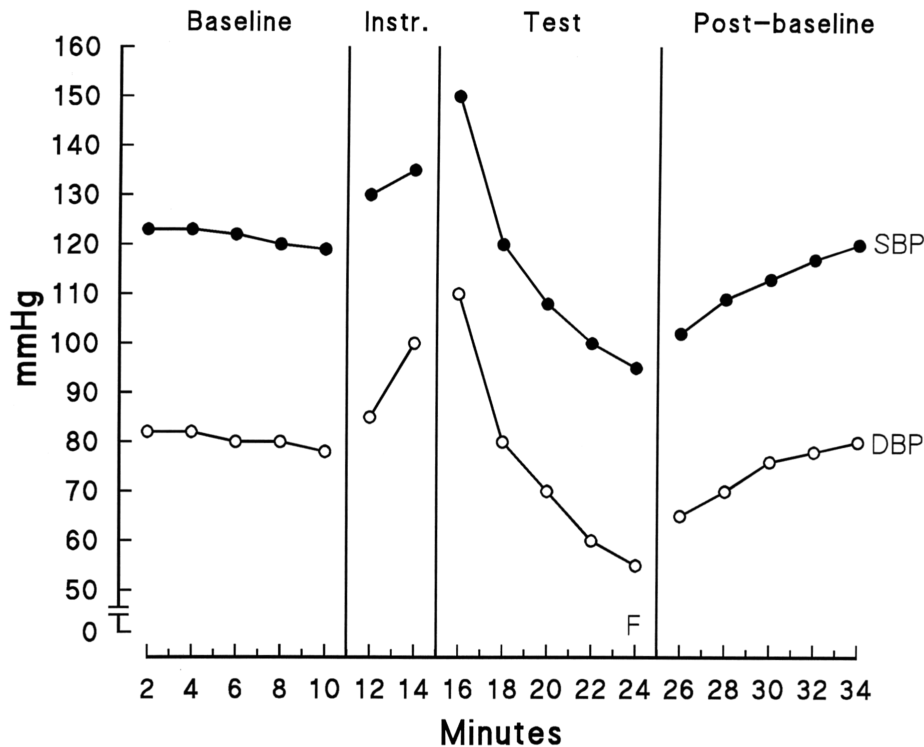

FIGURE 1 Systolic (SBP) and diastolic (DBP) blood pressure during the different phases of the blood phobia test situation. Baseline = 10 minutes rest, Instr. = instruction about the upcoming test and waiting for it, Test = watching a 30-minute videotape of thoracic surgery, Post-baseline = 10 min of recording after the patient had regained consciousness, F = fainting.

around 80 mmHg. During the 4-minute instruction phase there is an increase in both SBP (to 135) and DBP (to 100), which is continued during the first assessment of the test period (150 and 110, respectively) when the patient is watching a videotape of thoracic operations. This is the first phase of the diphasic reaction. Then there is a drop in both SBP (to 95) and DBP (to 55) 10 minutes into the tape when the patient fainted. This is the second phase. During the post-baseline there is a gradual recovery back to baseline levels.

There are different hypotheses in the literature attempting to explain this diphasic response pattern but so far none has very much research evidence.

C. Rationale for AT

After having described the diphasic pattern the therapist gives the following explanation of how AT is going to work.

> Since the second phase of the response consists of the drop in blood pressure your blood flow in the brain is also reduced and before fainting you will feel dizziness and other fainting sensations. In order to reverse this progression you need to acquire a coping skill that can be applied rapidly in any situation which triggers these sensations. Applied tension is this skill which produces an increase in blood pressure and cerebral blood flow. The method has three parts: (1) learning the actual tension technique, (2) learning to identify the very first signs of the drop in blood pressure, and (3) applying the tension technique when being exposed to various blood-injury stimuli that trigger the fainting sensations. The tension technique consists of tensioning the large body muscles; the arms, the chest, and the legs for short periods of time. By being exposed to different stimuli under my supervision you will gradually be more and more efficient at identifying the early signs and apply the tension technique so that the reduction in blood pressure will not be so dramatic, and you will get the curve to turn upward. The tension technique is easy to learn but like any other skill it takes practice to master it. You cannot expect to be perfect at it at once but with experience you will be better and better. The goal is that you should be able to encounter these situations without having stronger reactions than people in general.

After giving a rationale like this the therapist should encourage the patient to ask questions if there is something that is not clear to him or her. One frequently asked question is what happens if the first signs come on very rapidly and I am not good or quick enough to prevent the fainting; will everything be in vain? The answer is that it is no disaster if you faint during a therapy session. On the contrary, this will give you the opportunity to practice applying the tension technique as soon as you regain consciousness. Then you will learn that you recover much more rapidly than you have done so far, in 15 to 20 minutes instead of 3 to 4 hours.

D. Outline of the Treatment Program

1. The First Session

The initial part of session 1 consists of a behavior analysis concerning the patient's experiences when encountering blood-injury stimuli. This should focus on what the patient usually does in the situation, if he or she has fainted, how often this has occurred, how long the patient has been unconscious, and particularly what were the symptoms that the patient experienced before fainting. These early signs can be idiosyncratic, for example, dizziness, cold sweat, tunnel vision, ringing in the ears, a queasy sesation in the stomach, and nausea. It is important to list these symptoms carefully and in their order of occurrence since they are used as cues for applying the tension in later sessions. After having completed the behavior analysis the therapist describes the rationale as outlined earlier.

The last part of the first session consists of teaching the patient the correct tension technique. However, before starting with this it is imperative to assess the patient's blood pressure to get a baseline measure before tensing and to rule out high blood pressure. Then the therapist models the tension technique by sitting in front of the patient and showing him or her to tense the gross body muscles—arms, chest, and legs—and to keep tensing for 10 to 15 seconds, or long enough to feel a sensation of warmth rising in the face. Then the tension is released and the patient goes back to normal without attempting to relax. After a pause of 20 to 25 seconds there is a new tension of 10 to 15 seconds followed by a release and pause. After five cycles of tensing–releasing the therapist once more assesses the patient's blood pressure, and usually this will indicate an increase from baseline with 4 to 5 mmHg of DBP and 8 to 10 mmHg of SBP.

As homework assignment the patient should do five practice sessions per day, which only takes about 4 minutes when it includes five cycles as described above. One problem that a few of our patients have reported while carrying out the homework is headache. This is probably due to a tension that is too intensive and/or too frequent, and is solved by instructing the patient to reduce both intensity and frequency of the tension practice.

2. The Second and Third Sessions

During the second and third session the patient is shown a series of slides (about 30) of wounded or mutilated people. When the first slide is shown on the screen in front of the patient he or she is instructed to introspect and scan for the very first sign that the blood pressure is dropping, while watching the picture. As soon as the first symptom is detected the patient describes what it is, and if the reaction is not too strong the therapist assesses the patient's blood pressure to obtain a pretensing level. Then the patient applies the tension and keeps applying it (with brief periods of release) until he or she can watch the slide without experincing the symptom. Then the therapist once more assesses the blood pressure to obtain a post-tensing level, and at the end of the session pre- and post-tensing levels can be compared. When the patient can watch the slide for about a minute it is time to continue with the next slide and repeat the process. The aim is to complete the first 15 slides during session 2 and continue with the next 15 slides during session 3.

During these two sessions the job of the therapist is very similar to a sports coach: setting the stage for the initial BP drop, encouraging the patient to observe the first signs, and coaching him or her to apply the tension technique quickly enough and persistently, in order to reverse the physiological response.

Between sessions the patient has the same homework assignment as after the first session, that is, five practice occasions of tension–release tension per day.

3. The Fourth Session

For the fourth session the patient is taken to the hospital's blood donor center in order to provide him or her with a natural situation in which the application of tension technique can be practiced. To begin the patient is guided around the center by a nurse who also describes how the blood is managed. Then the patient watches other blood donors donating blood, and finally has a blood sample of his or her own withdrawn. The purpose of this is to assess if the patient is suitable to become a blood donor, since donating blood regularly is one way in which the patient can maintain the skill he or she has acquired during the treatment period.

One problem that might arise is if the patient has to use the tension technique during the venipuncture,

which may make it difficult, or impossible, for the nurse to draw blood. The therapist should anticipate this problem and teach the patient differential tension, that is, to be relaxed in the nondominant arm while at the same time tensing the dominant arm, the chest, and the legs.

4. The Fifth Session

For the final session the patient is brought to the department of thoracic surgery at the university hospital where he or she can observe an open-heart or lung surgery from an observation room one story above the operating theater. During this session the patient has many opportunities to practice application of the tension technique, and the therapist's primary responsibility is to coach the patient to do so. Should the patient faint, which rarely happens, the therapist will help the patient to regain consciousness and then use the tension technique for a while in order to be able to resume exposure to the operating scene as soon as possible. First the patient should be lying on the floor, then sitting on the chair but turned away from the operating table, and then gradually turning toward it while tensing continuously if necessary.

5. The Maintenance Program

At the end of session 5 the therapist describes the maintenance program to the patient. This starts with a review of the progress that the patient has made so far, and then follows a description of what the patient could do in the next 6 months in order to maintain, and further, this improvement. An agreement is made between therapist and patient that the latter should continue exposing himself or herself to blood-injury stimuli at least twice a week. Examples of situations are looking at pictures of wounded people, watching TV programs of surgical procedures, talking to others about such things, watching others donate blood, and donating blood oneself. The patient has specific forms to fill out and mail to the therapist once every four weeks. Upon receiving a form the therapist calls the patient on the phone and talks with him or her for 10 to 15 minutes about the experiences of the past period. The patient also is taught the difference between a setback and a relapse, and is given a set of instructions on what to do in case a setback occurs.

E. A Brief Version of AT

In an attempt to investigate whether the five-session version of AT described above could be abbreviated into a one-session treatment a study was undertaken in my clinic. The one-session AT was maximized to 2 hours, since pilot cases indicated that the large amount of muscle tension during an ordinary 3 hour session would lead to quite a lot of muscle soreness. This would, in turn, make it difficult for the patient to focus the concentration on what is necessary (i.e., observing the very first signs of drop in blood pressure).

The one-session AT starts with the same rationale as above. Then follows 15 minutes of tension training with the blood pressure assessment before and after to demonstrate to the patient that he or she can increase the blood pressure in a nonexposure situation. The application training uses 10 of the 30 slides used for the five-session AT, but the procedure is the same as described earlier. If time permits further exposure to blood-injury stimuli can consist of talking about blood situations, looking at blood in a test tube or at a bloody bandage, having a finger pricked, and so on. The purpose of the application training is the same as for the longer version, that is, for the patient to acquire the skill to recognize the drop in blood pressure and to apply the tension technique to reverse this curve, and abort the reaction altogether. After the session the patient is giving the same homework assignment as in the five-session AT: to practice the tension technique five times a day.

The outcome of the study indicated that the one-session AT was as effective as the five-session treatment on almost all of the measures. Thus, from a clinical point of view the brief treatment may be preferable since it does not involve taking the patient to a blood donor center or a thoracic surgery department.

II. THEORETICAL BASIS FOR APPLIED TENSION

According to the rationale for AT this coping technique works because by tensing the large body muscles the patient can stop the blood pressure from falling too low, and then increase it to a normal level for the individual patient. As a consequence of this the cerebral blood flow will not decrease below a critical level and the patient will not faint.

What evidence is there for this explanation? In the three randomized clinical trials of AT done at my clinic the patients (N = 40) increased their blood pressure significantly from the pre- to the post-tensing phase while being continuously exposed to slides of wounded people. The mean SBP increases were 13.6, 17.0, and 16.2 mmHg, and the corresponding means for DBP were 5.8, 7.8, and 12.4, respectively. This indicates that blood phobic patients can acquire the tension skill after 1 week of practice and use it effectively during the treatment sessions at the clinic. Unfortunately, we have not been able

to assess BP during sessions 4 (blood donor center) and 5 (thoracic surgery). Furthermore, our physiological equipment has not allowed us to assess cerebral blood flow, but other researchers have shown that the tension technique also leads to an increase in this parameter.

Another question concerning the mechanism of change for AT is whether the whole package consisting of the tension technique and exposure to blood-injury stimuli is necessary to obtain a good result. If this is not the case, which of the two components is the most important for the treatment effect? In one of our studies AT was compared with tension-only and exposure-only, and the results showed AT and tension-only to be equally effective and more so than exposure-only. In a subsequent study AT for one session and tension-only for one session were as effective as AT for five session. Thus the conclusion that can be drawn is that it is the coping technique (i.e., learning to tense and when to use it) that is the important component in AT.

III. APPLICATIONS AND EXCLUSIONS

AT was specifically developed for patients with blood-injury phobia and it has turned out to be the treatment of choice for this subgroup of specific phobia. In DSM-IV injection phobia is included in the same diagnostic category and about 50% of patients with injection phobia have a history of fainting in their phobic situations. For these I recommend teaching them the tension technique, but this is not enough; they also must be exposed to various injections, venipunctures, and pricking of fingers so that they acquire the skill of differential tension of the muscles (if necessary) while the nurse carries out these procedures.

Since very few patients with other anxiety diagnoses have a history of fainting when encountering their phobic stimuli there is very little need for AT in other instances. Patients with panic disorder often experience dizziness in their panic attacks, but they do not have a drop in blood pressure. Whether AT could have a beneficial effect on this subjective feeling of dizziness requires systematic research. However, there might be a risk of increasing the BP too much in patients who have a normal or elevated BP to start with.

If a patient has a diagnosed hypertension, temporal arthritis, or previous stroke one should be cautious with the tension training and assess the BP frequently to make sure that the BP does not rise to a level that is too high. However, it may be the case that blood phobic patients with essential hypertension do not react as readily with the drop in blood pressure that is characteristic of blood-phobic patients.

IV. EMPIRICAL STUDIES

So far we have completed three clinical trials of AT in patients with blood-injury phobia. These are summarized in Table 1. The conclusion that can be drawn from these studies is that AT is an effective treatment, which yields better effects than exposure. However, it also seems that the application phase is of less importance than acquiring the coping skill; learning the tension technique well and having the knowledge of when and how to use it seem to be the most important factors in AT. Our latest study also indicates that an abbreviated one-session (2 hours) treatment is as effective as the full 5-hour AT, which is good news to the practicing therapist who may not have easy access to a blood donor center and a thoracic surgery department.

V. CASE ILLUSTRATION

A 24-year-old female patient had suffered from her blood phobia for 10 years, but never actually fainted in the phobic situation since she had always managed to escape or avoid these situations altogether. She had a father and a sister who also had blood phobia. When testing her before treatment her mean baseline values were SBP 122 and DBP 79 mmHg. During the instruction phase these values increased to 133 (SBP) and 87 (DBP) and at the beginning of the test phase there was a large increase to 161 (SBP) and 100 (DBP). This was, however, followed by a dramatic decrease to 94 (SBP) and 54 (DBP), and the patient fainted after watching the videotape of thoracic operations for 4 minutes. After being unconscious for a brief period (10 to 15 seconds) the patient's blood pressure gradually approached baseline without quite reaching the initial level. After receiving the AT the patient managed to watch the entire videotape (30 minutes) without any drop in blood pressure and no fainting behavior whatsoever. She did not have to use the tension technique at the posttreatment assessment and when asked about this she explained that she now felt very confident that she could cope with a drop in blood pressure, should it occur. At the 1-year follow-up the improvements were maintained and during that year the patient had encountered a number of blood-phobic situations and coped very well with them. At one occasion she even

TABLE I
Clinical Trials of AT in Patients with Blood-Injury Phobia

Study	Treatments	Treatment time (hr)	N	Drop-out (%)	Measures	Results	Percent improvement	Follow-up (months)
Öst et al. (1989)	1. Applied tension	5	10	0	Behavioral test	1=2=3	1:100, 2:73, 3:90	6
	2. Applied relaxation	9	10	0	A. Rating of fainting	1=2=3	1:100, 2:94, 3:89	
	3. Combination 1+2	10	10	0	Self-rating of anxiety	1=2=3	1:56, 2:44, 3:89	
Öst et al. (1991)	1. Applied tension	5	10	0	Behavioral test	1=3>2	1:100, 2:64, 3:100	12
	2. Exposure *in vivo*	5	9	0	A. Rating of fainting	1=3>2	1:97, 2:41, 3:95	
	3. Tension-only	5	9	0	Self-rating of anxiety	1=2=3	1:54, 2:48, 3:37	
Hellström et al. (1996)	1. Applied tension: spaced	5	10	0	Behavioral test	1=2=3	1:88, 2:100, 3:100	12
	2. Applied tension: massed	1	10	0	A. Rating of fainting	1=2=3	1:71, 2:78, 3:71	
	3. Tension-only: massed	1	10	0	Self-rating of anxiety	1=2=3	1:58, 2:67, 3:57	

assisted at the scene of a traffic accident without experiencing any fainting sensations.

VI. SUMMARY

Applied tension is a coping method specifically developed for the treatment of blood-injury phobia (and to some extent injection phobia). This method specifically focuses on the original physiological responses, which are characteristic of blood phobia: the diphasic pattern with an initial increase and then a rapid decrease in blood pressure. The first step of AT consists of teaching the patient an effective tension technique, which leads to an increase in blood pressure. The patient is taught to tense the arms, the chest, and the leg muscles, and by assessing the patient's blood pressure the therapist can demonstrate that the tension really increases blood pressure. The second step is to expose the patient to various blood-injury stimuli (slides of wounded people, blood donation, and thoracic surgery) so that he or she can practice applying the tension as soon as the very first signs of a drop in blood pressure, are experienced. Randomized controlled trials show that AT is an effective treatment for blood phobia and the effects are maintained at follow-up 1 year later.

See Also the Following Articles

Anxiety Management Training ■ Applied Relaxation

Further Reading

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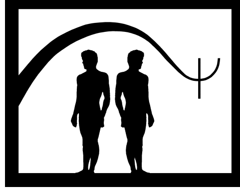

Arousal Training

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I. Description of Treatment
II. Theoretical Bases
III. Empirical Studies
IV. Summary
Further Reading

GLOSSARY

classical conditioning The main feature of this form of conditioning is that the originally neutral conditioned stimulus, through repeated pairing with the unconditioned stimulus, acquires the responses originally given to the unconditioned stimulus.

operant conditioning This type of conditioning involves the strengthening of an operant response by presenting a reinforcing stimulus if the response occurs.

I. DESCRIPTION OF TREATMENT

Arousal training is a technique that is used in the treatment of a number of clinical conditions. The essential aspect of the treatment involves training individuals to detect their levels of arousal, which are then the focus of treatment. Patients are trained either to further enhance arousal levels or to reduce levels of arousal, depending on what is required for a successful outcome.

This article focuses on two quite different conditions that utilize arousal training: enuresis and inorgasmia in females. These two conditions have been selected because (1) there is a reasonable body of literature that relates to the use of arousal training with these conditions; and (2) the treatment of enuresis involves training the individual to lower arousal levels, whereas the treatment of inorgasmia involves training to increase arousal levels.

Arousal training among children with enuresis generally involves teaching the child to use a waking device to prevent them from wetting the bed. Parental involvement is an important aspect of therapy. The focus of the therapy is on teaching the child the physiological sensations that precede nocturnal enuresis (i.e., their arousal levels), so that he or she wakes and goes to the bathroom to urinate rather than wetting the bed. Thus, the focus of the training is on increasing the percentage of dry nights rather than on eliminating bed-wetting.

This technique uses a signal alarm device. When the child wets the bed, a moisture-sensing device near the genitals is activated and triggers an alarm. This alarm can either be a sound or a vibrating device. Both mechanisms have been found to be effective in waking children. Only a couple of drops of urine are necessary to trigger the alarm. Through this process the child gradually learns the physiological sensations associated with a full bladder and wakes to urinate in the bathroom without the sound of the alarm.

Reward systems are very important for this training to work (e.g., rewards for dry nights). Both the parents and child must be highly motivated. Involvement in training

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entails recording the child's responses to the alarm and monitoring his or her progress. The success rate for therapy is in the 92% range, but the course of therapy can be two or three months. Reward systems need to remain in place for at least three weeks after complete dryness has been achieved. Relapse rates are higher if the alarm system is removed after shorter dry periods.

Arousal training for inorgasmia among women involves utilizing mechanisms that enhance sexual arousal. Women with inorgasmia generally demonstrate low levels of arousal, so therapy needs to focus on mechanisms designed to increase arousal levels. The focus of this arousal training needs to be directed toward both subjective and physiological levels of arousal. In an excellent 1995 review of the literature, Laan and Everaerd demonstrated how research studies have indicated the independence of these two dimensions of arousal, particularly among women. Thus, arousal training needs to focus on mechanisms that will enhance both aspects of arousal.

The most commonly used measure of physiological sexual arousal among women is vaginal vasocongestion. This is generally achieved by using a vaginal photoplethysmograph which measures both vaginal blood volume and vaginal pulse amplitude, with vaginal pulse amplitude generally being seen as the most accurate measure of sexual arousal. Strategies to increase physiological levels of sexual arousal include measures to reduce anxiety and sexual threats and also increasing the salience of the sexual stimulus. Although there is some speculation about the factors that need to be addressed to increase sexual arousal, the exact mechanism whereby this is achieved has not been developed or evaluated. Subjective sexual arousal generally involves an assessment of the woman's subjective evaluation of her arousal levels on a rating scale.

Sexual arousal in women has been shown to be enhanced using arousal training. Marita McCabe and her colleague have suggested that training focus on both response imagery (that is, sexual fantasy which relates to the woman's own sexual responses) and stimulus imagery (that is, sexual fantasy which relates to sexually stimulating situations), as well as relaxation. Thus, arousal training needs to focus on both a woman's responses to sexual fantasy and her generation of sexually stimulating scripts in order to effectively increase her levels of subjective sexual arousal. They also suggested that arousal training should focus on strategies to decrease performance concerns, since levels of performance anxiety were inversely related to subjective sexual arousal.

Clearly, more research needs to be conducted on the most useful treatment strategy to increase female sexual arousal. It would appear that arousal training is effective in the treatment of subjective sexual arousal, but the specific elements to include in this training process still need to be clarified. Enhancement of physiological sexual arousal among women has been largely neglected. Research needs to focus on the elements that are most useful in arousal training programs to improve the physiological levels of arousal, and also on the relationship between physiological and subjective arousal in the treatment of inorgasmia.

II. THEORETICAL BASES

Enuresis may have either an organic or a psychological etiology. This discussion focuses on the psychological explanation for development of the disorder and on the reason for the effectiveness of arousal training in its treatment. It has been proposed that the waking alarm described earlier works through classical conditioning. Repeated pairings occur between the sensation of a full bladder, the child wetting the bed, the sound of the alarm, and the child waking up. In time, the child learns to wake to the sensation of a full bladder prior to wetting the bed. Thus, the training is focused on the eventual association between a full bladder and waking up. Arousal training for enuresis also utilizes operant conditioning. Children may perceive the sound of the alarm, waking in the night, and cleaning up as an aversive condition, and so may learn to avoid this situation by learning to keep dry.

Both of these behavioral approaches use the theoretical underpinning of conditioning to increase the child's self-control of nocturnal bed-wetting behaviors. The basic assumption behind this approach is that lack of bladder control is a learned response. Arousal training, using either classical or operant conditioning, is designed to reverse change these behaviors.

Inorgasmia is viewed as being due to low physiological levels of arousal or perceived low levels of arousal for the subjective dimension, and arousal training is needed to alter this situation. Imagery training, which focuses on both stimulus and response imagery, is used to increase arousal levels. Consistent with proposals regarding imagery training among inorgasmic women, it would appear that reinforcement of appropriately recalled stimulus or response imagery during imagery training is an essential ingredient in the treatment of inorgasmia. Thus, operant conditioning would seem to

be an appropriate theoretical position to explain the effectiveness of arousal training with this disorder. Such an explanation is consistent with other approaches used to explain the treatment of inorgasmia.

Sexual arousal has been conceptualized as an emotion, which results from the interaction between cognitive processes and physiological response systems. Therefore, in order to experience subjective sexual arousal, individuals need to be able to accurately detect these bodily sensations. There appear to be substantial individual differences in the awareness of basic bodily sensations, which are related to genital responsiveness, perception thresholds, and attentional focus. A stimulus may convey different meanings, depending on the learning experiences of the individual (i.e., the individual's history), and so the interpretation placed on the current circumstances.

It has been argued that people learn to be sexual. For women, this learning process involves tuning into a wide range of situational and physiological cues. Appraisal of the current situation (based on prior learning experiences), in combination with feedback from genital sensations, combines to lead to subjective sexual arousal in women. Thus, arousal training to treat inorgasmia needs to reverse this learning process by dealing with feedback from both the interpretation of the situation and genital responses.

III. EMPIRICAL STUDIES

Arousal training has been shown to be extremely effective in the treatment of enuresis, provided it is maintained for a sufficient period of time, and implemented appropriately by parents. Clearly, if the enuresis is due to a physiological condition, the problem needs to be treated using appropriate medication. These medications, and their effectiveness, will not be considered in this chapter, for this discussion focuses primarily on the treatment of enuresis due to a psychological etiology.

Van Londen and colleagues demonstrated that arousal training obtained a 98% success rate with nonclinical boys and girls with nocturnal enuresis between the ages of 6 and 12 years. Even $2^1/_2$ years after the initial training, 92% of children were continent. This compared with a success rate of 84% where reward reinforcement only was used, and 73 percent where the urine alarm was used without any rewards. The $2^1/_2$ year success rate for these two approaches was 77% and 72%, respectively. The majority of children in the arousal training condition who experienced a relapse did so only once (62%), and most of these relapses were treated successfully by parents reinstituting arousal training techniques (60%), without seeking professional help.

In contrast to these results, Walling only reported a success rate of 70% using an alarm. However, Walling's paper does not make clear if the respondents were drawn from a clinical population and if all aspects of arousal training (reinforcement as well as the alarm) were used in treatment. Schulman, Colish, von Zuben, and Kodman-Jones also found a success rate of 56% using an alarm in the treatment of their clinical patients with enuresis. However, this rate was significantly better than the use of medication (18% and 16% for two different medical interventions).

In reviews of studies to treat nocturnal bed-wetting, it was found that the most effective treatment for enuresis was dry bed training and an enuresis alarm. The data also demonstrated that success was more likely when the problem was maturational and less likely in situations where there was a psychiatric disorder of the child, severe family stress, lack of concern by child and parents, or urological dysfunction. Medication was shown to have limited usefulness and was effective primarily when there was a physiological cause for the enuresis.

Other researchers have reported up to 90% effectiveness with a short-term conditioning techniques for enuresis. However, closer examination of these techniques demonstrates that they involved the use of an alarm, but this was not accompanied by reinforcement from the parents for dry nights. Within this literature there are major difficulties in comparing results across different studies. The severity of the children's enuresis, the level of support provided by the parents, the number of treatment sessions, as well as the focus of the treatment program, all show substantial variability across studies. These factors will undoubtedly impact on the effectiveness of the arousal training procedure.

It appears that arousal training in its various forms is the most effective treatment for enuresis. This is most likely to be successful if both the child and the parents are highly motivated, and the therapist acts to clearly communicate the strategies to be employed and assists in the maintenance of motivational levels within the family.

A number of studies have evaluated the effectiveness of arousal training in the treatment of inorgasmia in women. In a review of studies that examined the factors that contributed to sexual arousal among women, it was found that masturbation frequency, coital frequency, and having a positive opinion about erotic stimulus and a

higher awareness of vaginal lubrication were the most significant predictors of both subjective and physiological sexual arousal. These results would suggest that respondents who have a positive attitude to their sexual responses, and who are attuned to their levels of arousal, are more likely to experience higher levels of both physiological and subjective sexual arousal. Thus, arousal training would be expected to be an effective therapy with women experiencing inorgasmia.

This prediction is supported by studies by McCabe and her colleagues that employed imagery training to enhance sexual arousal among inorgasmic. Imagery training was used in both of these studies to desenzitize inorgasmic women to the anxiety and fears that they held regarding sexual arousal and orgasmic responding. This process of desentitization was designed to enhance both physiological arousal and subjective levels of arousal. It was, therefore, a form of arousal training that was designed to operate at both the physiological and subjective level. The data from both studies demonstrated some level of effectiveness using these techniques.

A problem with using arousal training among women who experience inorgasmia is that there may be habituation to stimuli. As yet, there appear to be no clear data on the circumstances under which habituation occur, and some sexual stimuli continue to retain their sexual-arousing capacities despite repeated exposure.

Further studies need to be conducted on arousal training for inorgasmia, and the effectiveness of the treatment programs needs to be contrasted with both alternative treatment programs that do not utilize arousal training strategies and wait-list controls. Although theoretically one would expect arousal training to be a useful approach for the treatment of inorgasmia, until these studies are completed it is difficult to draw any confident conclusions about the effectiveness of this type of therapy among inorgasmic women.

IV. SUMMARY

Arousal training is a therapeutic technique that uses learning principles to either decrease or increase levels of arousal in order to achieve an appropriate therapeutic outcome.

This approach has been used effectively in the treatment of nocturnal enuresis among children. Interventions are most likely to be effective if both the child and the parent are highly motivated, and if the arousal alarm in combination with reinforcement is used in the treatment regime. It is also important to continue treatment for a number of weeks after the child has a dry bed in order to firmly establish the new learning processes.

Arousal training also appears to be effective in the treatment of inorgasmia in women. Learning theory can be used to explain the development of this sexual dysfunction, and inorgasmic women have been shown to experience low levels of sexual arousal. Although further research is needed to determine other strategies to enhance arousal, preliminary research would suggest that imagery training is an effective mechanism to increase arousal levels.

Further research needs to be conducted to determine the effectiveness of arousal training with other clinical disorders.

See Also the Following Articles

Bell-and-Pad Conditioning ■ Classical Conditioning ■ Nocturnal Enuresis ■ Operant Conditioning ■ Orgasmic Reconditioning ■ Sex Therapy

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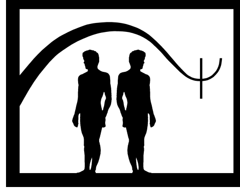

Art Therapy

Marcia Sue Cohen-Liebman

Philadelphia Children's Alliance, MCP Hahnemann University, and American Art Therapy Association

I. Definition
II. Background
III. Theoretical Constructs
IV. Materials/Media
V. Artistic Developmental levels
VI. The Art Therapist
VII. Educational Requirements
VIII. Art Therapy Credentials Board
IX. American Art Therapy Association
Further Reading

GLOSSARY

art therapy A human service profession that utilizes art media, images, the creative process, and patient/client responses to art productions as reflections of an individual's development, abilities, personality, interests, concerns, and conflicts.

American Art Therapy Association (AATA) A 5000-member association founded in 1969 that is governed and directed by a nine-member board elected by the membership.

I. DEFINITION

Art therapy is a human service profession that utilizes art media, images, the creative process, and patient/client responses to art productions as reflections of an individual's development, abilities, personality, interests, concerns, and conflicts. Art therapy practice is based on knowledge of human developmental and psychological theories, which are implemented in the full spectrum of models of assessment and treatment.

Art therapy is an effective treatment for the developmentally, medically, educationally, socially, or psychologically impaired. It is practiced in mental health, rehabilitations, medical, educational, and forensic institutions. Populations of all ages, races, and ethnic backgrounds are served by art therapists who provide services to individuals, couples, families, and groups.

II. BACKGROUND

Art therapy emerged as a distinct profession in the 1930s. Since that time art therapy has grown into an effective and important method of communication, assessment, and treatment. Sound theoretical principles and therapeutic practices govern the modality. The theoretical orientation of art therapy includes psychoanalytic theory as well as art education.

III. THEORETICAL CONSTRUCTS

Two schools of thought are fundamental to the profession of art therapy: Art Psychotherapy and Art as Therapy. Both have contributed to the progressive de-

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velopment of the field. Often basic tenets associated with both schools of thought are integrated in the practice of art therapy. Psychoanalytic tenets provide the basis for both methods of practice.

Margaret Naumburg is credited with the first use of art expression as a therapeutic modality. She encouraged her patients to draw spontaneously and to free associate to their drawings in the 1940s. Her use of art was based on psychoanalytic theory and practice. She believed that art therapy was dynamically oriented and was dependent on the transference relationship between patient and therapist. For Naumburg therapeutic art expression allows for a symbolic communication, which bypasses difficulties encountered with verbal communication. Naumburg encouraged the patient to discover for himself or herself the meaning of his or her artwork. Art psychotherapy is a process-oriented approach that involves art behavior, clinical behavior, and the associations of the patient. The latter is fundamental to comprehending a client or patient's understanding of his or her imagery.

In contrast, Edith Kramer concentrated on the integrating and healing properties of the creative process itself. Her theories evolved out of her work with children in the 1950s. For Kramer the healing quality inherent in the creative process explains the usefulness of art in therapy. In art as therapy, the therapist functions as an auxiliary ego and assumes a supportive role. Sublimation is a key component associated with Kramer's work. Judy Rubin in 1984 explained that in the creative act (art making), conflict is reexperienced, resolved, and integrated.

For Naumburg, art making assisted the therapeutic process. Kramer focused on the art making believing that the creative process in and of itself was intrinsically therapeutic.

Myra Levick in 1983 recognized the correlation between emotional development, intellectual development, and creative expression that is fundamental to art therapy. Levick also developed criteria for the identification of defense mechanisms of the ego in graphic productions. This knowledge assists with the identification of areas of fixation as well as conflicts and issues that are central to the individual.

IV. MATERIALS/MEDIA

Media is a term used to describe art materials. Media encompass a variety of items including two- and three-dimensional materials. An art therapist is familiar with the inherent properties and resulting qualities of the media as well as what may be evoked by the introduction of certain materials. The art therapist assesses the stimulus potential of the media in conjunction with the coping skills of the client/patient in an effort to introduce appropriate materials and tasks. The art therapist is trained to comprehend what is being expressed with regard to the media. Different media evoke different responses and convey different messages.

Art materials exist on a continuum from structured to unstructured. Structured media have a definitive shape and form and make a definitive mark. Two-dimensional art materials are representative of structured media, including pencils, crayons, markers, and pastels. Unstructured media, such as clay or paint, require the user to give the media shape and form. It does not make a consistent line and is more subject to gravity. The art therapist's capability to comprehend and interpret what is being expressed with regard to the media is fundamental to the practice of the modality. This information provides the art therapist with insight regarding underlying issues, conflicts, and concerns.

V. ARTISTIC DEVELOPMENTAL LEVELS

A phase-specific developmental sequence has been associated with children's drawings. Although different phases or stages have been identified by different researchers, children's artistic development is sequential and contingent on mastery of skills. Knowledge of typical developmental variants is essential to understanding the graphic productions created by children. Many factors and influences will contribute to maturation in developmental spheres including artistic. Cathy Malchiodi in 1998 explored developmental aspects of children's drawings in her text, *Understanding Children's Drawings.*

VI. THE ART THERAPIST

Art therapists are skilled in the therapeutic use of art. Art therapists use their backgrounds as artists and their knowledge of art materials in conjunction with clinical skills. The art therapist treats clients/patients through the use of therapeutic art tasks. While the art therapy process uses art making as a means of nonverbal communication and expression, the art therapist makes use of verbal explorations and interventions. Art therapists do not own art or the healing that comes from its use.

The therapeutic use of art distinguishes the art therapist from other helping professions. The art therapist may act as a primary therapist or as an adjunct within the treatment team, depending on the needs of the institution and the treatment objectives of the patient. Art therapists function in many capacities including supervisors, administrators, consultants, and expert witnesses.

VII. EDUCATIONAL REQUIREMENTS

Professional qualification for entry into the field requires a master's degree from an accredited academic institution or a certificate of completion from an accredited institute or clinical program. Specialized training programs include didactic instruction and practicum experience. Graduate art therapy training programs are commonly associated with medical colleges or universities. The designation art therapist registered, ATR, is granted to individuals who have successfully completed the required educational and professional experience.

VIII. ART THERAPY CREDENTIALS BOARD

The Art Therapy Credentials Board, Inc. (ATCB), an independent organization, grants postgraduate registration (ATR) after reviewing documentation of completion of graduate education and postgraduate supervised experience. The Registered Art Therapist who successfully completes the written examination administered by the ATCB is qualified as Board Certified (ATR-BC), a credential requiring maintenance through continuing education credits.

IX. AMERICAN ART THERAPY ASSOCIATION

The American Art Therapy Association (AATA) was established in 1969 as a nonprofit organization. AATA is governed and directed by a nine-member board that is elected by the membership. Current membership is approximately 5000 members in five membership categories. Affiliate chapters exist throughout the country and promote the field of art therapy at the local level. Educational, professional, and ethical standards for art therapists are regulated by the American Art Therapy Association.

The Mission statement of the American Art Therapy Association is as follows:

> The American Art Therapy Association, Inc. (AATA) is an organization of professionals dedicated to the belief that the creative process involved in the making of art is healing and life enhancing. Its mission is to serve its members and the general public by providing standards of professional competence, and developing and promoting knowledge in, and of, the field of art therapy.

Conceptually, AATA's philosophy, goals, and objectives endeavor to ensure credentialed art therapists deliver the highest standard of care possible to the general public. AATA's mission fosters the highest level of quality services from professional, highly trained art therapists. AATA's vision for the 21st century is the inculcation and recognition of art therapy as an integral part of all health care delivery systems.

For more information regarding the profession of art therapy and the National Association contact: The American Art Therapy Association, Inc. (AATA), www.arttherapy.org. For more information regarding registration and certification contact: The Art Therapy Credentials Board, Inc. (ATCB), atcb@nbcc.org.

Resources available from AATA include professional preparation literature as well as art therapy literature. Sample brochures include: *Art Therapy the Profession, Art Therapist Model Job Description, Fact Sheet, Membership Survey, Ethical Considerations Regarding The Therapeutic Use Of Art By Disciplines Outside The Field Of Art Therapy, Art Therapy in the Schools, Educational Programs, and Ethics Document.*

Acknowledgment

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Alternatives to Psychotherapy ■ Biblical Behavior Modification ■ Cinema and Psychotherapy ■ Therapeutic Storytelling with Children and Adolescents

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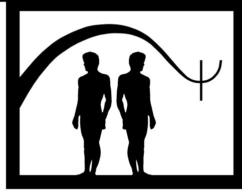

Assertion Training

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I. Description of Treatment
II. Theoretical Bases
III. Applications and Exclusions
IV. Empirical Studies
V. Case Example
VI. Summary
Further Reading

GLOSSARY

behavior rehearsal Practicing behaviors of interest.

coaching Providing corrective feedback to develop a skill.

cognitive restructuring Helping clients to increase self-statements that contribute to attaining valued outcomes and to decrease self-statements that have the opposite effect.

discrimination training Reinforcing a behavior in one situation and not in others in order to increase the rate of a behavior in situations in which it will be reinforced (followed by positive consequences or avoidance or decrease of negative consequences).

exposure Being in the presence of certain stimuli.

generalization The occurrence of a behavior in situations similar to the one in which it was established.

hierarchy A ranked order of items such as situations ranked in relation to degree of anxiety they create.

maintenance The continuation of a behavior over time.

model presentation Presenting exemplars of behavior that observers can imitate.

self-management Setting goals and arranging cues and consequences to attain certain goals.

stimulus control Procedure for altering the rate of behavior in a situation by rearranging antecedents to behaviors of interest.

The aim of assertion training is to enhance interpersonal effectiveness in social situations. Positive consequences may be forgone because of anxiety in social situations. Assertion training emphasizes the extent to which we can influence our social environment by being active in its construction. In 1973 Joseph Wolpe defined assertive behavior as "The proper expression of any emotion other than anxiety toward another person." Lack of effective social skills may result in a variety of maladaptive behaviors. Assertion training often in combination with other methods, has been used to address a wide variety of presenting complaints including substance abuse, aggressive and explosive behaviors, and obsessive–compulsive behaviors. It has been used to help people make friends, arrange dates, and acquire needed help (e.g., on the part of individuals with learning disabilities). Essentially, assertive skills are effective social influence skills acquired through learning.

The terms "assertive behavior" and "assertion" (or "assertiveness") training have been replaced by the terms "effective/competent social behavior" and *"social skills training."* Some authors use the term "assertive behavior" to refer to a circumscribed set of behaviors such as refusing requests. One problem with use of the term "assertive behavior" is confusion of "assertion" with "aggression." Another potential disadvantage is encouraging a trait approach to social behavior that obscures the situational specificity of social behavior; that is, a client may be appropriately asertive in some situations (effective in achieving desired outcomes such as arranging

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future meetings with a friend), passive in other (e.g., refusing favors), and aggressive in others (e.g., requesting changes in behavior). Assertion training differs from social skills training in emphasizing individual rights and obligations. For example, an advantage of the phrase "assertive behavior" for some groups such as women is an emphasis on taking the initiative to enhance social and other opportunities. There is an activist stance. If intervention is successful, anxiety in interpersonal situations decreases and assertive responses are used when a client believes these would be of value in attaining personal and social goals; clients may be indifferent to situations that previously caused discomfort, such as minor digs and slights, and misconceptions of situations as rejecting (perhaps due to oversensitivity) should decrease. Discussion of the limiting effects of stereotyping and role expectations may result in greater sensitivity to certain situations (such as belittling sexist remarks) and greater likelihood of assertive reactions in such situations.

I. DESCRIPTION OF TREATMENT

Assertion training usually consists of a variety of components, including instruction, model presentation, behavior rehearsal, feedback, programming of change, and homework assignments. Other procedures that may also be used, depending on what is found during assessment, include self-instruction training, relaxation training, cognitive restructuring (e.g., decreasing unrealistic expectations or beliefs), and interpersonal problem-solving training (helping clients to effectively handle challenging situations that arise in social situations such as reactions of anger that get in the way of maintaining friendships). Written material may be used to provide instructions and to clarify differences among aggressive, assertive, and passive behaviors in a situation. For example if you believe you have been treated unfairly by a professor, you could appropriately speak to your instructor about your concerns (be assertive), say nothing (be passive), or yell at the instructor (be aggressive). Selection of intervention methods should flow directly from assessment. This provides information about the nature of a client's current cognitive (what they say to themselves), emotional (what they feel), and behavioral (what they do) repertoires in relation to desired goals and related situations, as well as likely consequences of and options for rearranging the environment. Role-playing during assessment (acting out what is usually done as well as what a client thinks he or she should do) may reveal that the client has many effective components of needed skills, and it may be decided that instructions and prompts during rehearsal will be sufficient to develop and refine needed skills. If effective behaviors are not used because of anxiety, intervention may focus on enhancing anxiety management skills. However, if needed social skills are absent, procedures designed to develop them, such as instructions, model presentation, and practice, may be needed. Discrimination training is required when skills are available but are not used in situations in which they would result in valued outcomes. This is designed to increase a behavior in situations in which it will be followed by positive outcomes and/or decrease it in situations in which negative outcomes are likely. Assessment may reveal that effective behaviors simply have to be placed under new stimulus control (i.e., prompted, perhaps by self-instructions, in certain situations). For example, effective ways of requesting favors from a friend may be of value in work situations but not be used there. Training may be carried out individually or in a group setting. A session may focus on developing effective behavior in one situation or on increasing a specific behavior of value in a range of similar situations (friendly reactions such as smiling).

A. Instructions

Instructions concerning effective behavior may be given verbally or presented in written, audiotape, or filmed form. This is often combined with model presentation and coaching during role-plays. Specific behaviors are identified to increase, decrease, stabilize, or vary and their relationship to desired goals described. Instructions may be given concerning only one behavior at a time, which is then role-played, or more than one behavior may be reviewed depending on the available skills (entering repertoires) of each client. What not to do (e.g., smile or giggle while requesting a change in an annoying behavior) as well as what to do (e.g., look at the person, face the person) are described.

B. Model Presentation

Instruction, model presentation, rehearsal, and coaching can be used when clients lack requisite behaviors in certain situations or when there is a need to refine behaviors. The need to use modeling will be influenced by the complexity of the skill to be acquired and nature of the entering repertoires (available skills) of clients. The greater the complexity of the skill and

the more lacking the initial repertoire, the greater the value of model presentation is likely to be. An advantage of model presentation is that an entire chain of behavior can be illustrated and the client then requested to imitate it. Nonverbal as well as verbal behaviors can be demonstrated and the client's attention drawn to those that are especially important. For example, a client can be asked to notice the model's eye contact, hand motions, and posture. Models of both effective and ineffective behavior may be presented. The model may verbalize (say aloud) helpful positive thoughts during role plays if effective social skills are hampered by negative thoughts such as "I'll always be a failure," "I'll never succeed." At first, appropriate self-statements can be shared out loud by the client when imitating the model's behavior (e.g., "Good for me for taking a chance"), and then, by instruction, gradually moved to a covert level. Donald Meichenbaum in 1972 found that models who display coping responses (for example, they become anxious and then cope effectively with this) are more effective than are models who display mastery response (they do not experience any difficulty in a situation).

Effective behaviors may be modeled by the counselor, or written scripts, audiotape, videotape, or film may be used. Essential elements of various responses can be highlighted and written models offered. The advantage of written material is that it can be referred to on an as-needed basis. In addition, the client may be asked to observe people with effective behavior who are in similar roles and to write down the situation, what was done, and what happened. This increases exposure to a variety of effective models, offers examples to use during rehearsal and may increase discrimination as to when to use certain behaviors and when not to do so, and offers opportunities for vicarious extinction of anxiety reactions through observation of positive outcomes following assertive behavior (that is, negative emotional reactions decrease via observation of what happens to others). The opportunity to see how negative reactions to assertive reactions can be handled may be offered as well. Client observations are discussed, noting effective responses as well as other situations in which assertive behaviors may be usefully employed.

C. Behavior Rehearsal and Feedback

Following model presentation, the client is requested to practice (rehearse) the modeled behavior. Corrective feedback is offered following each rehearsal. Specific positive aspects of the client's performance are first noted and praised. Praise is offered for effective behaviors or approximations to them, and coaching provided as needed. The focus is on improvements over baseline levels (what a client can do before intervention is initiated). Thus, approximations to hoped-for outcomes are reinforced. Critical comments such as "You can do better" or "That wasn't too good," are avoided. The client is encouraged to develop behaviors that are most likely to result in positive consequences. A hierarchy of scenes graduated in accord with the client's anxiety may be used for role-playing. Role-playing starts with scenes that create low levels of discomfort. Clients who are reluctant to engage in role-playing can be requested to read from a prepared script. As comfort increases, role-playing can be introduced. If a client is too anxious to read from a script, relaxation training may be offered as a prelude to role-playing. When there are many skills to be learned, one behavior at a time may be focused on. Each role-play may be repeated until required levels of skill and comfort are demonstrated.

Models and instructions are repeated as needed, and rehearsal, prompts, and feedback continued until desired responses and comfort levels are demonstrated. Rehearsal alone (without previous model presentation or other instructions), may be effective when skills are available or relevant behaviors are simple rather than complex. The situations used during role-playing should be clearly described and closely resemble real-life conditions. Instructions prior to practice or signals during practice can be used to prompt specific responses. Instructions given before a client practices a behavior "prompt" her to engage in certain behaviors rather than others. Perhaps a client did not look at her partner during the role-play and is coached to look at others while speaking. Checklists may be prepared for clients as reminders about effective behaviors. Covert modeling or rehearsal in which clients imagine themselves acting competently in social situations may be as effective as actual rehearsal if clients possess needed social behaviors (but do not use them) and if social anxiety is low. Home sessions in which clients engage in covert rehearsal can be used to supplement rehearsal in office sessions. Not only does behavior rehearsal provide for learning new behaviors, it also allows their practice in a safe environment and so may reduce discomfort. Rehearsal involves exposure to feared situations. This exposure is considered to be a key factor in decreasing social anxiety, especially if people remain in the situation even when they are anxious and act effectively in spite of their discomfort.

D. Programming of Change

Specific goals are established for each session. Perhaps only one or two behaviors will be focused on in a session, or the initial repertoire might be such that all needed verbal and nonverbal behaviors can be practiced. Assessment of the client's behavior in relation to given situations will reveal available behaviors and training should build on available repertoires. Hierarchies ranked in terms of the degree of anxiety or anger that different social situations create can be used to gradually establish effective assertive skills and lessen anxiety. Rehearsal starts with situations creating small degrees of anger or anxiety. Higher-level scenes are introduced as anxiety or anger decreases. Thus, introduction of scenes is programmed in accord with the unique skill and comfort levels of each client. Improvements are noted and praised. Praise for improvement should be in relation to a client's current performance levels.

E. Homework Assignments

After needed skill and comfort levels are attained, assignments, graded in accord with client comfort and skill levels, are agreed on to be carried out in the natural environment. Assignments are selected that offer a high probability of success at a low cost in terms of discomfort. Careful preparation may be required if negative reactions may occur in real life. A clear understanding of the social relationships in which assertive behavior is proposed is needed to maximize the likelihood of positive consequences and minimize the likelihood of negative outcomes when assertive behaviors are used. For example, a parent may be likely to become verbally abusive if his son makes certain requests. This possibility should be taken into account (e.g., by encouraging behaviors unlikely to result in abuse, or by using some other form of intervention such as family counseling). Coping skills should be developed to handle possible negative reactions before asking the client to carry out new behaviors. With some behaviors, such as assertive behaviors in service situations, unknown individuals may be involved. Clients can be coached to identify situations in which positive reactions are likely. For example, in service situations such as returning a defective purchase, clients can be coached to approach clerks who appear friendly rather than ones who scowl and look as if they have had a bad night.

When effective social behavior occurs without difficulty in easy situations, more difficult ones are then attempted. Clients are instructed to offer positive self-statements ("I spoke up and it worked!") for effective behavior. Practice, coaching, and model presentation provide instruction concerning the essential elements of effective behavior, and clients are encouraged to vary their reactions in appropriate ways. As with any other assignment, a check is made at the next meeting to find out what happened. Client logs (records) describing relevant behaviors and the situations in which they occurred can be used to provide a daily record of progress and guide selection of new assignments. Information reviewed may include what was said and done; when it was said and done; how the client felt before, during, and after the exchange; whether positive self-statements were provided for trying to influence one's social environment (even though the attempt failed); and what consequences followed the client's behavior. If an ineffective response was given in a situation, clients can be asked to write down one that they think would be more effective. This will provide added practice in selecting effective behaviors. Positive feedback is offered for effective behaviors, additional instructions given as necessary, and further relevant assignments agreed on. Motivation to act assertively may be enhanced by encouraging clients to carry out mini cost-benefit analyses in situations of concern in which they compare costs and benefits of acting assertively (versus passively or aggressively).

F. Cognitive Restructuring—Changing What Clients Say to Themselves

Thoughts relevant to assertive behavior include helpful attributions (casual accounts or behavior), realistic expectations ("I may not succeed; no one succeeds all the time"), helpful rules ("when in doubt think the best"), self-reinforcement for efforts to improve and positive consequences, problem-solving skills, and accurate perception and translation of social cues (e.g., noting and accurately interpreting a smile as friendly). In addition, cognitive skills (e.g., distraction) are involved in the regulation of affect (e.g., anger or anxiety). Unrealistic beliefs (such as "I must always succeed") and other kinds of thoughts such as negative self-statements that get in the way of assertive behavior should be identified and replaced by helpful self-statements and beliefs. This process is initiated during assessment and continues during intervention. Discussion of beliefs about what is proper assertive behavior and who has what rights

should be held during assessment in the process of selecting goals. Cognitive restructuring may include altering unrealistic expectations, altering attitudes about personal rights and obligations, and/or self-instruction training in which clients learn to identify negative self-statements related to effective social behavior and to replace them with positive self-statements.

Self-management aspects of assertive behavior include identifying situations in which assertion is called for (and when it is not), monitoring (tracking) the consequence of assertion, and offering helpful self-feedback. The likelihood of effective social behaviors may be increased by covert (to one's self) questions that function as cues such as What's happening?, What are my choices?, What might happen if…?, Which choice is better?, How could I do it?, How did I do?

G. Anxiety Reduction Methods

Relaxation training could be provided if anxiety interferes with use of assertive skills. The specific method selected to alter anxiety will depend on the cause(s) of anxiety (e.g., negative thoughts, a past history of punishing consequences because of lack of skills), and/or unrealistic expectations ("Everyone must like me").

H. Encouraging Generalization and Maintenance

Generalization refers to the use of assertive behaviors in situations other than those in which training occurred. Maintenance refers to their continued use over time. Steps that can be taken to increase the likelihood of generalization and maintenance of assertive behaviors include recruiting natural reinforcers (e.g., involving significant others), reinforcement for using behaviors in new situations (e.g., self-reinforcement), and use of a variety of situations during training. Generalization and maintenance can be encouraged by use of homework assignments and self-monitoring (e.g., keeping track of successes). Situational variations that may occur in real life that influence assertive behavior should be included in practice examples to encourage generalization and maintenance. For example, a woman may have difficulty refusing unwanted requests in a variety of situations (e.g., with friends as well as supervisors at work). If so, practice should be arranged in these different situations. Self-reinforcement may encourage the development and maintenance of new behaviors. Such reinforcement may be of special relevance in maintaining behaviors that are sometimes followed by punishing consequences. Clients can be encouraged to reward themselves for making efforts to exert more effective influence over their social environment, even though they are not always successful (e.g., if a woman tries to speak up more during a meeting and fails to gain the floor, she should reward herself for trying).

II. THEORETICAL BASES

A key assumption behind assertion training is that we often lose out on positive outcomes or suffer negative ones because of ineffective social behavior. For example, we may not get a job that we want because we lack the skills to speak up and present ourselves well in a situation. We may not be effective in meeting friends because we do not initiate conversations. A value stance as well as an intervention strategy is associated with assertion training. It is assumed that people have a right to express their feelings in a manner that subjugates neither others nor themselves, and that well-being includes this expression. Joseph Wolpe and Andrew Salter emphasized the importance of expressing our feelings, both positive and negative, in a way that does not detract from the rights and obligations of others. This applies to the overly reticent as well as to those who are overly aggressive. Those in the former group fail to assert their rights, whereas those in the latter group achieve their goals at the expense of others. Individual rights and obligations are emphasized in a context of increasing positive gains both for oneself and others. Such training implies that it is adaptive to express ourselves in appropriate ways, and distinguish situations in which restraint is called for from those in which assertion would be best. It is considered maladaptive and unfair to be taken advantage of, to allow oneself to be unduly imposed on, and to be intimidated. It is assumed that life will be more reinforcing if we are active in the construction of our social environments. Obligations include considering the rights of others. Clients are encouraged not only to consider their own rights and obligations in a situation but those of others as well. What is viewed as a right or obligation varies in different cultures and ethnic groups, and counselors will have to be careful not to impose their cultural standards on groups in which these are not appropriate (e.g., negative consequences and/or loss of positive consequences may result). Steps are taken to deal with anxiety about possible negative reactions by the development of positive self-instructions and effective social and relaxation skills (as needed).

It is assumed that behaviors, thoughts, and feelings are interrelated. For example, negative thoughts about ourselves may interfere with expressing and acting on our feelings (e.g., initiating conversations, answering questions in class). These thoughts and lack of action may, in turn, create anxiety or feelings of depression because of a loss of positive consequences or negative consequences. If we speak up (assert ourselves) and acquire valued consequences in situations in which we were reticent in the past, this makes it easier to act on future occasions because we are less anxious. Joseph Wolpe emphasized the importance of reciprocal inhibition; that is, if we engage in a response that is incompatiable with anxiety in a certain situation, this will "countercondition" anxiety reactions and it will be easier to perform this opposite type of response in the future. Speaking up rather than not saying anything was viewed as one kind of incompatiable response (i.e., to anxiety). Research in this area suggests that it is exposure that contributes to positive effects. That is, simply getting in a situation in which we are anxious and performing effectively in that situation seems to be the effective ingredient in decreasing anxiety and encouraging assertive behavior on future occasions.

III. APPLICATIONS AND EXCLUSIONS

Assertion training requires a careful descriptive analysis of relevant interpersonal relationships. If this analysis indicates that assertion would have unavoidable negative effects, as it may for example in abusive relationships, this would not be recommended. Other methods must be explored. Clients must be willing to act differently in real-life situations and have the self-management skills to do so (e.g., remind themselves to act differently). Cultural differences regarding what behaviors will be effective in certain social situations must be considered. Effective social behavior is situationally specific; what will be effective in one situation may not be in another.

Assertion training may be carried out in groups. A group offers a number of advantages including a variety of models, multiple sources of support, normalization and validation of concerns, and the availability of many people to participate in role-plays. Groups usually include from 5 to 10 sessions lasting one and a half to two hours each. Decisions must be made about how to structure sessions (for example, each session could be structured around a specific kind of assertive reaction). Assertion training in groups has been carried out with a variety of individuals, including college students, parents, public welfare clients, people with various psychiatric diagnoses, and women. Group training may be especially important for women. Because of their socialization, women compared to men may require more social support and more opportunities to observe assertive women in order for them to express their preferences.

IV. EMPIRICAL STUDIES

Both single case and group designs have been used to evaluate the success of assertion training. Single-case designs are uniquely suited for evaluating progress with individual clients. Here, baseline levels of performance of an individual are compared with performance levels of that individual during intervention. Research suggests that assertion training can be effective with a number of different types of clients in pursuit of a number of different outcomes. Programs focused on altering cognitions believed to be related to ineffective social behavior have sometimes been found to be as effective as those focused on altering overt behavior, suggesting an equivalence of effect across cognitive methods and assertion training. There are some indications that a combination of methods is most effective. However, some studies that purport to show that cognitive methods are as effective as social skills training in enhancing social skills do not include individual assessment of specific entry level skills and do not design individually tailored programs based on this assessment. This lack may underestimate the potential value of assertion training. A number of studies show that instructions alone (without modeling) are not sufficient to develop appropriate social behaviors with some clients labeled "schizophrenic."

Comparison of the effectiveness of assertion training in different studies is often hampered by the use of different criteria for selection of subjects, different training programs, and different criteria for evaluating progress. Evaluation is sometimes limited to changes in self-report or role-play measures, leaving the question unanswered as to whether beneficial changes occur in real life. Altering behavior in one kind of situation such as refusing requests, does not necessarily result in changes in behavior in other kinds of situations such as initiating conversations. Package programs may be used leaving the question "What are the effective ingredients of assertion training?" unanswered. Use of package programs may also be a waste of time and effort in including unneeded components. Use of global self-report

measures to assess change in specific areas may result in underestimating success of assertion training in relation to behavior in specific situations. Assertion training may do little to alter political, social, and economic sources of inequity; it is individually focused. There is thus the danger of blaming clients for problems that do not originate with them. The ideology of success through "mind power" (changing what you think), which is especially prevalent in America where assertion training flowered, requires vigilance to discourage programs that offer only the illusion of greater influence over one's social environment.

V. CASE EXAMPLE

Richard Eisler and his colleagues Michel Hersen and Peter Miller in 1974 used assertion training with a 28-year-old house painter admitted to a hospital after he had fired a shotgun into the ceiling of his home. His history revealed periodic rages following a consistent failure to express anger in social situations. His behavior was assessed by asking him to role-play in social situations in which he was unable to express anger. These included being criticized by a fellow employee at work, disagreeing with this wife about her inviting company to their home without checking with him first, and his difficulty refusing requests made by his 8-year-old son. An assistant played the complementary role in each situation (wife, son, or fellow employee). The client's reactions were videotaped and observed through a one-way mirror. Review of data collected revealed expressive deficits in four components of assertion: (1) eye contact (he did not look at his partner when speaking to him), (2) voice loudness (one could barely hear what he said), (3) speech duration (responses consisted of one- or two-word replies), and (4) requests (he did not ask his partner to change his or her behavior).

Twelve situations that were unrelated to the client's problem areas but that required assertive behavior were used during training. Each was role played five times in different orders over sessions. Instructions were given to the client through a miniature radio receiver. Instructions related to only one of the four responses at any one time. Thus during the initial scenes he was coached to look at his partner when speaking to him, and during the second series he was coached to increase the loudness of his voice but received no instructions concerning any other response. During the fourth series, he was coached to speak longer, and during the last, instructed to ask his partner for a behavior change. Feedback was provided concerning his performance after each role-play. Each response increased after specific instructions regarding this were given and effects generalized to the specific situations that were problematic for this client. Ratings of his behavior were made by reviewing videotapes of his performance.

VI. SUMMARY

Assertion training is designed to increase competence and decrease social anxiety in social interactions. It may be carried out in individual or group meetings. Both broad and narrow definitions of assertive behavior have been used, ranging from definitions that restrict the term to behaviors such as refusing unwanted requests to broad definitions that include a wide range of behaviors involving the expression of both positive and negative feelings. The distinctions among assertive, passive (doing nothing), and aggressive (e.g., yelling) behavior are made with assertion referring to effective behavior. Assertive training differs from social skills training in its emphasis on personal rights and obligations. There is a philosophy or ideology that accompanies assertion training that does not accompany social skills training. A number of procedures are usually involved in assertion training, including instructions, model presentation, behavior rehearsal and coaching, feedback, programming of change, homework assignments, and the cultivation of attitudes and beliefs that encourage assertive behavior. The more outstanding the behavior deficits and need for behavior refinement, the more likely that instructions, model presentation, and rehearsal will be required. Intervention may also include efforts to replace negative thoughts with positive self-instructions. Homework assignments are a component of assertion training, and client-recorded logs can be reviewed to offer feedback and to encourage use of effective skills. Careful assessment is required to identify skills needed and relevant situations, to determine whether there are discrimination problems in relation to when certain behaviors can most profitably be used, to identify unrealistic beliefs or expectations that may interfere with assertive behavior, and to determine whether negative self-statements or lack of effective self-management skills interfere with effective behavior. Sources of assessment data include the interview, self-report measures such as the Assertion Inventory, role-playing, and observation in the natural environment.

Research to date indicates that assertion training is effective in helping clients achieve a variety of valued

outcomes in real-life settings. Assertion training is usually individually focused. It thus may not redress political, social, and economic inequities that impede change. Planning for generalization and maintenance will be required to increase the likelihood that desired behaviors will occur in relevant situations and will be maintained. Has the term "assertive behavior" outlived its usefulness? As a term connoting a traitlike approach to behavior, it has. As a term that is sometimes confused with aggressive reactions, it has not been helpful. As a term that highlights our potential for influencing our social environments, it has been helpful.

See Also the Following Articles

Anger Control Therapy ■ Avoidance Training ■ Bibliotherapy ■ Communication Skills Training ■ Discrimination Training ■ Heterosocial Skills Training ■ Homework

Further Reading

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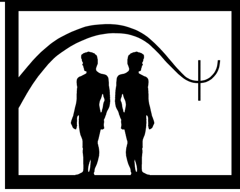

Assisted Covert Sensitization

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I. Description of Treatment
II. Theoretical Basis
III. Empirical Studies
IV. Clinical Case Study
V. Summary
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GLOSSARY

assisted covert sensitization A behavioral strategy in which standardized scripts are employed to guide the client through clinically relevant scenarios in which ultimately aversive imaginal consequences are presented.

covert conditioning A family of behavior therapy procedures which combine the use of imagery with the principles of operant conditioning.

I. DESCRIPTION OF TREATMENT

Covert sensitization represents one of the major psychotherapeutic, behavioral techniques to be applied to the remediation of sexual deviations. Techniques such as covert sensitization, olfactory aversion, and faradic or electrical aversion therapy have in common the clinical goal of reducing sexual arousal to deviant stimuli through the introduction of aversive events. Covert sensitization is a form of conditioning therapy in which a behavior and its precipitative events are paired with some aversive stimulus in order to promote avoidance of the precipitative events and thereby to decrease the undesirable behaviors. In 1990, the originator of the procedure, Joseph Cautela and A. J. Kearney defined the conditioning procedure as follows:

> Covert conditioning refers to a family of behavioral therapy procedures which combine the use of imagery with the principles of operant conditioning. Covert conditioning is a process through which private events such as thoughts, images, and feelings are manipulated in accordance with principles of learning, usually operant conditioning, to bring about changes in overt behavior, covert psychological behavior (i.e. thoughts, images, feelings) and/or physiological behavior (e.g. glandular secretions).

In covert sensitization, the aversive stimulus usually consists of an anxiety-inducing or nausea-inducing image that may be presented verbally by the therapist or imagined by the client. The aversive scene is individually created, and is specific to each client's problem behavior. Covert sensitization has frequently been successfully employed by itself (as described by Brownwell and Barlow in 1976; Curtis and Presley in 1972; Dougher, Crossen, Ferraro, and Garland in 1987; Haydn-Smith, Marks, Buchaya, and Repper in 1987; Hayes, Brownwell, and Barlow in 1978; Hughes in 1977; King in 1990; McNally and Lukach in 1991; and Maletzky and George in 1973) as well as in combination with other techniques (as discussed by Kendrick and McCullough in 1972; Moergen, Merkel, and Brown in 1990; Rangaswamy in

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1987; and Stava, Levin, and Schwanz in 1993) in the treatment of sexual deviance.

Assisted covert sensitization is a basic variant of the covert sensitization procedure in which standardized scripts are employed to guide the client though clinically relevant scenarios in which ultimately aversive imaginal consequences are presented. A study conducted by Plaud and Gaither in 1997 illustrates the clinical methodology used in assisted covert sensitization, and will now serve as a case illustration of the use of assisted covert sensitization in the treatment of a paraphilia.

II. THEORETICAL BASIS

The principles of learning and behavior have been integrated into many of the most commonly employed therapy techniques in use today with sexual deviations, or the paraphilias, as discussed by Gaither, Rozenkranz, and Plaud in 1998. Abel and Blanchard in 1976 stated 25 years ago that "The problem of deviant sexual behavior was one of the earliest areas of psychopathology to which behavioral techniques were applied, and it continues to be a major area of research and treatment." The earliest behavioral theories of sexual deviations were based on a classical conditioning paradigm. Theorists such as Binet in 1888, Jaspers in 1963, and Rachman in 1961 believed that these deviations were the result of accidental pairings between stimuli that naturally elicited sexual arousal and originally neutral stimuli. According to Jaspers in 1963, "Perversion rises through the accidents of our first experience. Gratification remains tied to the form and object once experienced, but this does not happen simply through the force of simultaneous association with that former experience."

Why some individuals choose to incorporate deviant stimuli into their masturbatory fantasies is also explained using a conditioning hypothesis. One factor is the stimulus value of "deviant" stimuli, which is continually strengthened through the pairing of these stimuli with ejaculation. According to a conditioning model, nondeviant stimuli or fantasies, at the same time, undergo extinction (a decrement in responding) as a result of their lack of pairing with ejaculation. Another contributing factor is a common belief held by sexual deviants that a normal sex life is not possible. This belief, according to McGuire and colleagues in 1965, may develop from a number of different sources including aversive adult heterosexual experiences, or feelings of physical or sexual inadequacy. These researchers found that in 45 cases, all of the patients held this belief before their first deviant sexual encounter. This leads one to the conclusion that the belief (a covert behavior) may play a precipitating role in the development of sexual deviations (overt behaviors) rather than being an effect of the deviation.

Sexual deviations may be best understood through a combination of classical and operant conditioning processes, according to O'Donohue and Plaud in 1994, and Plaud and Martini in 1999. Deviant sexual behavior begins with an accidental pairing of an "abnormal" or deviant stimulus with sexual arousal and/or ejaculation, giving this stimulus a high amount of erotic value. Thus, through a classical conditioning process, the deviant stimulus begins to elicit sexual arousal. The deviant stimulus is then incorporated into sexual fantasies during masturbation, which is reinforced by ejaculation. Thus, ejaculation serves as a reinforcer for the covert behavior of deviant fantasizing.

III. EMPIRICAL STUDIES

McGuire and colleagues in 1965 discussed the implications of their hypothesis for the treatment of sexual deviations. First, the authors stated that "since the original conditioning was carried out in most cases to fantasy alone, treatment also need only be to fantasy." Thus, in the treatment of deviations such as pedophilia, it is not necessary to present the subject with children, but only with fantasies involving children. Another implication of this hypothesis is that therapists can warn their patients of the conditioning effects of orgasm on the immediately preceding fantasy. Finally, according to McGuire and colleagues, "positive conditioning to normal heterosexual stimuli can follow the same lines as it is deduced that the deviation followed."

A study conducted by Lamontagne and Lesage in 1986 nicely illustrates the use of covert sensitization in the treatment of exhibitionism. The subject in this study was a 37-year-old male who had been exposing himself several times per week. The treatment consisted of covert sensitization techniques and allowing the client to privately expose himself at home with his wife. Before treatment, this client had fantasized about exhibitionism approximately 60% of the time during masturbation, and 30% of the time during sexual intercourse with his wife. In the covert sensitization sessions, the subject imagined exposing himself to a woman who would then angrily scold him. As another part of the aversive image, he imagined losing his wife

because of the exhibitionism. Thus, the deviant fantasy was paired with two powerfully aversive images. In combination with the covert sensitization procedures, the client was allowed to expose himself two times per week at home with his wife. This private exposure was always followed by either masturbation or sexual intercourse without deviant fantasies. Also, the client was instructed not to masturbate unless his wife was present, so that nondeviant sexual fantasy and behavior could be promoted. A posttreatment follow-up indicated that the subject had not publicly exposed himself for 2 years. It would seem that the treatment rendered the exhibitionism appropriate, and even socially acceptable, since it occurred in the privacy of the home. Interestingly, the couple even reported that their sex life improved following treatment.

The underlying theory of this treatment approach is probably best thought of as a combination of classical and operant conditioning processes. The therapist works with a client to develop an aversive image that will be paired with the precipitative events, and with the image of the deviant behavior itself, according to a classical conditioning paradigm. The aversive image serves as the unconditioned stimulus (UCS). The images of the precipitative events, being continually paired with the UCS, become the conditioned stimulus (CS). Both the conditioned response (CR) and the unconditioned response (UCR) consist of a negative reaction that may be emotional (e.g., fear), physiological (e.g., nausea), or in some other way repulsive. Once the client's deviant behavior has been classically conditioned, the client should begin to actively avoid or escape the situations associated with the deviant behavior. The precipitative events, as well as the behavior itself, should elicit a negative reaction, and thus be aversive.

According to the principles of operant conditioning, and specifically of negative reinforcement, the client should behave in ways that would minimize contact with the aversive stimulus, in this case the precipitative events and the deviant behavior. If the client does pursue the deviant behavior further, hopefully the treatments will have at least reduced the effectiveness of the reinforcement for the deviant behavior, which should lead to a lower frequency of the behavior. It would also be possible for classical conditioning to work alone, if the CR was so powerful that it rendered the person unable to engage in the deviant behavior, or consisted of a response that was incompatible with the deviant behavior. For example, if the CR was extreme anxiety or fear, and the deviant behavior required an erect penis, it may be the case that the CR would preclude the possibility of erection, and thereby preclude the occurrence of the deviant behavior.

Lamontagne and Lesage in 1986 combined classical conditioning and operant conditioning in their covert sensitization treatment approach. Another important part of their treatment consisted of the operant reinforcement of private exposure through orgasm from masturbation or intercourse, both of which took place with the client's wife. Essentially, only the context of the exhibition behavior changed, not the behavior itself. The client learned that the behavior would be reinforced in one situation (at home with his wife), while it would either be extinguished or punished in any other situations.

IV. CLINICAL CASE STUDY

The client in this case study of the use of assisted covert sensitization was a 24-year-old male. The client was originally referred for a penile plethysmographic evaluation by a local human service center psychologist in relation to a show cause hearing for his failure to progress in group treatment at the human service center, which ultimately led to his termination from the group. The group treatment focused on psychoeducational issues relating to human sexuality, consent and victim empathy issues, appropriate and inappropriate sexual behavior, and disclosure to other members of the group. The client chose not to participate actively in any phase of the group treatment. The client had an extensive history of sexually abusive behavior. He earlier pled guilty to a charge of sexual assault, and was serving probation at the time of the initiation of therapy services. According to police records, when he was 19 years old the client engaged in sexual activities with a 15-year-old male. The victim reported that the client attempted anal intercourse on approximately 15 occasions. It was reported that the client ejaculated on a "couple" occasions, although there was no notation of anal penetration, oral sexual contact, or masturbation. The victim also reported on several of these sexual encounters that the client would gain compliance by the victim through purchasing soft drinks, and that consent by the victim to sexual interactions was verbally coerced by the client. The client denied engaging in anal intercourse and verbally coercive activities, and indicated that the victim engaged in sexual activities, including masturbation, in a mutual fashion.

The client's penile responses during the course of therapy were recorded by a penile plethysmograph utilizing a Type A mercury-in-rubber penile strain gauge.

During the original assessment of the client's sexual preferences, penile tumescence was continually monitored as he listened to sexually explicit audiotapes. A total of 18 standard audio scripts were presented during the initial assessment. These were descriptions of two adult homosexual interactions, two adult heterosexual interactions, two acts of adult female exhibitionism, two adult female rapes, one male child physical aggression, one female child physical aggression, one male child nonphysical coercion, one female child nonphysical coercion, three male child fondling, and three female child fondling. The client's subjective reports of sexual arousal were assessed by having him rate how aroused he felt using a 10-point Likert scale (0 = not at all aroused, 9 = extremely aroused).

Results of this assessment component before initiating assisted covert sensitization indicated that the client was aroused by adult females; however, he also displayed an active pattern of arousal toward stimuli depicting sexual activities with a male child, specifically anal intercourse. Based on these data, three "deviant" categories that elicited the greatest levels of sexual arousal—fondling a male child (MPF), coercing a female child into sexual activity (FPC), and fondling a female child (FPF)—were noted, and a follow-up recommendation was made for the client to participate in eight sessions of assisted covert sensitization in addition to being readmitted to group treatment at the local human service center.

Shortly after the initial assessment was conducted, an assisted covert sensitization protocol was begun. The client was given a consent form and full explanation of the procedure, and all questions were answered concerning the procedure. The initial assisted covert sensitization session was scheduled for the following week. During the week, audiotapes were developed for treatment. These tapes contained 3-minute descriptions of a deviant sexual activity (MPF, FPC, or FPF) followed by a description of a possible negative (aversive) consequence for this type of activity. The consequences were either legal (e.g., being beaten up by the father of the child and then being arrested) or physiological (e.g., feeling very nauseous and vomiting) in nature. The development and implementation of these guided scripts represents the "assisted" component in assisted covert sensitization.

When the client arrived for the first session, an abbreviated assessment was conducted to obtain baseline measurements of his sexual arousal to MPF, FPC, and FPF stimuli, as well as mutually consenting heterosexual (FAD), and mutually consenting homosexual (MAD) activity.

Following a 10-minute break the treatment was initiated, involving the presentation of 10 MPF stimuli described earlier. At the end of the session, the client was given a copy of the tape and instructed to listen to and visualize the sexual activity as well as the aversive consequences being delivered five times per day. The remaining five sessions were conducted at 1-week intervals apart beginning with Session 1.

During Session 2, the client was presented with the same 10 MPF stimuli from the previous session, and again instructed to listen to the tape five times per day until the next session. In Sessions 3 and 4, the same procedures were followed with the exception that MPF stimuli were presented only two times and FPC stimuli were presented the other times. The client was again provided with a copy of the new tape and instructed to listen to it five times per day between sessions (with explicit instructions to visualize the stimuli being presented). In Sessions 5 and 6 FPF stimuli were presented six times, MPF two times, and FPC two times each.

After completion of Session 6, the client returned to the clinic for a 30-day follow-up assessment. The same stimuli from the baseline assessment were used to determine present patterns of sexual arousal. The same procedure was again followed 3 months later in a final follow-up assessment.

The client's physiological data for the initial assessment, pretreatment assessment, 30-day follow-up, and 90-day follow-up were calculated and converted to percentages of full erection. This was computed by subtracting his minimum penile circumference for an entire session (e.g., assessment period) from his maximum penile circumference for each trial (the presentation of one audiotaped stimulus represents a trial) and dividing this number by 3. Three centimeters is thought to reflect the circumference change most males undergo from flaccidity (no sexual arousal) to complete engorgement (maximum sexual arousal). This number was then multiplied by 100 to give a percentage of full erection. Thus, percentage of full erection data give an indication of absolute levels of arousal. In other words, the client's response to each stimulus is viewed in this manner independently of the other stimuli presented in the session. It was found that the stimuli elicited less arousal each time the client was assessed during the assisted covert sensitization procedure.

The client's physiological data for the assessments were next converted to standardized scores (z-scores). Z-scores form a distribution in which the mean of the

distribution equals zero (0) and the standard deviation is 1.0. Using this scoring method, the client's sexual preferences are expressed as positive z-scores, while negative z-scores reflect sexual aversions. The greater that a score falls from zero, the stronger the preference or aversion. Thus, a score of +2.0 indicates a greater preference than a +1.2, while a score of –2.0 indicates a greater repulsion than a score of –1.2. Z-scores, then, give an indication of relative arousal or preferences and aversions among a group of stimuli. It was found that in the initial assessment, four of the five categories including the three that were treated, were positive and above 0.50. Looking across the assessments for each of the deviant categories, it was clear that the client's arousal to these decreased across time, although his arousal to adult mutually consenting sexual activity (FAD) indicated that this was clearly his most preferred stimulus in all assessments except for the 30-day follow-up, in which mutually consenting heterosexual activity (MAD) was the most preferred stimulus.

The client's self-report of sexual arousal using the 10-point Likert scale (0 = not at all aroused, 9 = extremely aroused) for each category of stimulus across the four assessments, yields an indication of an individual's subjective experience of arousal, which is not always perfectly related to his physiological responding. Once again, it was found that FAD stimuli elicited the greatest levels of arousal, whereas all others dropped off to 0.

The client clearly showed clinical progress in both his physiological and self-report of arousal toward sexually deviant stimuli that were the main areas of concern, using the assisted covert sensitization procedure. Recall that the underlying behavior principle of covert sensitization is most often theorized to be a combination of classical and operant conditioning, as described earlier. Given decrements in physiological arousal and self-report normally observed in covert sensitization procedures, such as in the present case study, it is logical to conclude that the aversive image associated with deviant sexual arousal (the UCS) becomes a CS by virtue of its being contingently paired with the UCS (classical conditioning). Also, it is logical and theoretically coherent to conclude that both the conditioned response (CR) and the unconditioned response (UCR) consist of a negative reaction that may be emotional (e.g., fear), physiological (e.g., nausea), or in some other way repulsive, which further serves to negatively reinforce avoidance or escape behavior (operant conditioning).

V. SUMMARY

Assisted covert sensitization represents an empirically validated approach to treating sexually deviant behavior patterns, focusing on both the covert and overt behavioral manifestations of inappropriate sexual arousal patterns, and therefore assisted covert sensitization is a main line behavior therapy technique in the treatment of sexual offenders.

See Also the Following Articles

Coverant Control ■ Covert Positive Reinforcement ■ Covert Reinforcer Sampling ■ Orgasmic Reconditioning ■ Self-Control Desensitization ■ Sex Therapy ■ Systematic Desensitization

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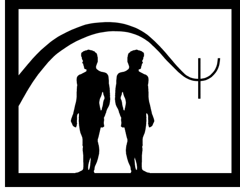

Attention Training Procedures

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I. Description of Treatment
II. Theoretical Bases
III. Empirical Studies
IV. Summary
Further Reading

GLOSSARY

anhedonia A psychological condition evidenced as an inability to experience pleasure in activities that normally produce it.

avolition Lack of intent or will to perform activities.

contextualization Placing the learning exercise in a context so that the practical utility and link to everyday interests and activities are obvious to the learner.

errorless learning The elimination of trial and error approaches to learning by beginning with easily mastered exercises and slowly increasing the difficulty level.

generalization The transfer of a learned skill or behavior to other situations besides the one where the training occurred.

intrinsic motivation The motivation to do an activity because performance of that activity is in and of itself rewarding. Contrasts to extrinsic motivation, which occurs when there are external rewards for performing an action.

reaction time Time taken to respond to an auditory, visual, or proprioceptive stimulus.

shaping Process of systematically reinforcing an individual for demonstrating behaviors that increasingly approximate a target behavior.

Attention training refers to the procedures used to improve attention deficits as they impact on cognitive and social aspects of functioning. This article reviews the various training techniques that are used, the conceptual underpinnings of the treatment procedures, and studies of treatment efficacy.

I. DESCRIPTION OF TREATMENT

Remediation of attentional impairments is approached with different techniques depending on the aspect of attention that requires improvement, and the specific characteristics of the population being treated. The actual process of remediating attention typically includes various exercises that are done in a controlled treatment setting with the ultimate goal of increasing attention performance in everyday life. Before treatment begins, assessment of the particular needs of the patient is done. This assessment forms the basis for a treatment plan, and also can serve as a baseline measure in studies of treatment effectiveness.

A. Assessment

The assessment includes a thorough history that helps to identify the etiology of the attention problems. Medical and psychiatric history identifies conditions known to affect attention and other cognitive functions, and establishes the extent to which attention problems are

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state (episode) versus trait (interepisode) related. Current medications and other treatments are reviewed with note made of how they are tolerated by the individual. Medication and electroconvulsive therapy (ECT) induced attention impairment is treated by titrating the dose, or changing drug class to minimize cognitively toxic effects. Assessment also includes educational and occupational history to identify baseline/premorbid functioning. Current functioning is reviewed with an emphasis on identifying how attentional impairments are evidenced in everyday life. Ability to attend during therapeutic activities, at school, in work, and in social situations is evaluated. Some formal testing of attention is done to provide objective data on how the patient's attention compares to a normative group. This testing includes measures of different aspects of attention such as ability to encode, focus, and sustain attention. Some of the commonly used tests are Digit Span, Coding, Cancellation Tests, Continuous Performance Test (CPT), as well as others. Ability to stay on task in therapeutic or vocational activities may be quantified as time on task or rated with scales. Some assessment of differences in ability to attend to auditory versus visual stimuli can be done.

Learning style is discussed as a way of increasing and assessing patient awareness of cognitive strengths and weaknesses. Patient awareness of attention deficit and how it impacts on their functioning is assessed, as is motivation for treatment and attitude about learning. Ultimately, this assessment identifies how attention processes are functioning relative to those of an age (and education) matched group, possible etiologies for the impairment, areas to focus on in attention remediation, and treatment techniques most suited to the learning style and needs of the patient. The assessment, inasmuch as it is done in one of the first meetings with the cognitive remediation staff, should also serve to engage the patient in treatment. As in any first therapeutic encounter, the cognitive remediation assessment not only assesses but also lays the groundwork for a productive therapeutic collaboration between the patient and the provider.

B. Treatment Plan

A treatment plan in cognitive remediation delineates the overall goal, the specific objectives, and the interventions. For example, the overall goal may be to improve ability to focus and sustain attention. The specific objectives may be to increase ability to stay on task from 15 minutes to 45 minutes, or to improve performance on the CPT. Specific objectives include some measures of test performance and some functional measures to show that the attention training has generalized outside the remediation setting. The interventions indicate the actual attention training procedures to be used and the person who will be doing them.

C. Treatment Interventions

1. Computer-Based

There are several computerized attention training exercises that have been developed for head-injured patients and these have also been used with psychiatric populations. The Orientation Remedial Module (ORM) is a program developed at NYU Rusk Institute that has a number of attention training exercises and a reaction time test that can be administered before and after each training session. The tasks are intended to improve arousal, alertness, rapid and well-modulated responsiveness, scanning, target detection, and rapid processing of simple information. There are five modules (attention reaction conditioner, zeroing accuracy conditioner, visual discrimination conditioner, time estimates, and rhythm synchrony conditioner) that involve receiving auditory and visual stimuli and eliciting a series of simple visual–motor responses. Progression through one module builds skills necessary for subsequent modules. The tasks are somewhat engaging and feedback is provided to the patients about their performance.

Captain's Log software, available through BrainTrain, and the training exercises developed by Bracey are examples of other computer-based cognitive training packages that include tasks intended to improve auditory and visual attention. There are a number of software exercises available through different vendors, all designed to improve attention, in head-injured or ADHD populations. Although there is no software designed specifically for use by psychiatric populations, some success has been reported in the application of the exercises to this patient group. Psychiatric patients often have severe motivational problems that can affect response to any treatment. Characteristics of software that are best suited to populations with motivational problems include engaging presentation of material, options for personalizing and controlling aspects of the task, frequent feedback, and placing the activity in appealing, relevant contexts. Educational software, developed for use in primary and secondary curriculums, is frequently designed with these features, and some include exercises to improve attention and memory.

Computer-based software exercises are intended to be worked on by individuals, but it is possible to have several individuals working simultaneously at separate computer stations. Depending on the patient profiles,

one therapist typically works with one to four clients. The therapist monitors and facilitates productive engagement in the activity and guides the patient to appropriate exercises.

2. Noncomputer-Based

Attention is sometimes the focus of group exercises done within the context of psychiatric rehabilitation. These exercises are rarely as purely cognitive as those done on the computer and are often done in conjunction with the computer exercises to facilitate generalization to an ecologically meaningful context. For example, Integrated Psychological Therapy (IPT) is a highly structured group therapy approach that includes five subprograms, three of which are devoted to development of those cognitive abilities thought to be the prerequisite for effective social interaction. Attention is the focus of a few of these IPT exercises; for example, one task requires verbatim repetition and paraphrasing of what another group member said. A wide variety of other group exercises that target attention can be accessed through occupational therapy manuals. For example, a group exercise to tone visual scanning and vigilance may involve a version of I Spy, whereby patients search a highly intricate picture for target objects.

For those clients who are so severely attentionally impaired that they are unable to tolerate group formats, behavioral techniques such as shaping can be integrated into the skills training. Shaping refers to the systematic reinforcement of behaviors that increasingly approximate a target behavior. When the goal is to enhance social attention, the behaviors that indicate attentiveness, such as keeping eyes open or looking at the speaker, can be reinforced. Shaping techniques can be used to enhance social aspects of attention or to develop attention in nonsocial contexts such as target detection.

Other noncomputer-based attention tasks can be done individually or in a group with each patient working on his or her own exercises. Some exercises are actually versions of attention tests that are instead used to train performance. For example, cancellation tasks that require the patient to scan a paper and mark all the target stimuli, and coding tasks that are similar to Digit Symbol, can be used as a remediation or assessment tool. These exercises are best used in conjunction with other tasks since there is a disadvantage associated with exclusive use of outcome measures as a remediation tool. Generalization of skill is promoted when target behaviors are paired with multiple cues in multiple contexts, something that does not happen when the outcome measure is the only remediation tool used.

3. Holistic versus Targeted Treatment Approaches

Attention training is typically done in the context of a comprehensive treatment program. Whereas a targeted approach would focus on the purely cognitive, nonsocial aspects of attention, a holistic approach addresses both the cognitive and social aspects of attention. Issues of awareness, self-esteem, and learning style are appreciated as having a potential impact on cognition, and they are therefore addressed in the remediation sessions.

4. Intensity and Duration of Treatment

There are no conclusive data to provide guidelines on these treatment parameters. Many studies of treatment efficacy used a model of three sessions per week. There is considerable variability in the duration of treatment. The more comprehensive programs, which target several cognitive functions in addition to psychosocial skills, typically involve 6 to 12 months. More focused programs, which target nonsocial aspects of cognition, typically involve 10 to 24 sessions. The length of each treatment session may vary from 30 to 60 minutes.

II. THEORETICAL BASES

Impairment in attention is a common symptom of severe psychiatric illness. Patients with schizophrenia perform poorly on tasks that require vigilance, quick responses, or sustained attention. Because these deficits are evident during and between episodes of active psychosis and have been noted in individuals at risk for schizophrenia, they are considered to be trait or vulnerability markers of the disease. Patients with bipolar and unipolar depression, especially if the illness is treatment refractory or has accompanying psychotic features, also have severe problems with attention. Attention has several aspects, and it is possible for some elements of attention to remain intact while others are deficient. For example, the ability to encode information, which can be measured by Digit Span, is differentiated from the ability to sustain attention and maintain readiness to respond to a signal. Tasks such as the CPT measure vigilance or ability to sustain attention, ability to be ready to respond to a target, and not to respond to noise or nontargets.

Impairments in attention have been associated with functional outcome in psychiatric patients. In schizophrenia, impaired encoding and vigilance has consistently been associated with poor social problem solving and difficulty benefitting from rehabilitation

services. Psychosocial skills training is a form of rehabilitation that is widely available for people with persistent psychiatric illness, and it is intended to teach basic life skills such as social interacting, illness management, independent living, and leisure skills. The patients with schizophrenia who have more severe attentional problems are least likely to acquire skills in these programs. The attentional problems make it difficult for them to process the information given in groups, and they may not be able to sustain attention for the duration of the sessions.

Medication does not have a major impact on attention in schizophrenia. There appears to be a positive impact on the gross attentional problems associated with acute psychotic decompensation but the enduring attentional problems that are seen throughout the course of the illness are surprisingly resistant to medication. In the affective disorders, medication can significantly reduce attention problems if attentional deficits are state related and the illness responds to psychopharmacologic intervention. In the treatment refractory patients, attentional problems tend to persist. Furthermore, some medications, such as lithium, can impair attention. Many medications, if not in the therapeutic range, or if idiosyncratically tolerated, can cause attention impairment.

Because attentional problems are so prevalent in the psychiatric disorders, often so unresponsive to pharmacological intervention, and because they are associated with outcome and ability to benefit from treatment, they are targeted for remediation. This remediation is typically done within the context of rehabilitation programs, serving people who have persistent psychiatric illness. As acute care has become increasingly triage oriented, remediation of cognitive deficits is more likely found in outpatient settings or long-term inpatient facilities. Major influences on the development of attention remediation models in psychiatry come from neuropsychology, behavioral learning theory, educational theory, and rehabilitation psychology.

A. Neuropsychology and Attention Remediation

Neuropsychology, and the related field of cognitive psychology, have made major contributions to our understanding of the attentional system, at the levels of both cognitive operations and neuronal activity. The attention system is believed to be composed of subsystems that perform different but interrelated cognitive functions. These different subsystems are mediated by different anatomic areas that together work as a network. Neuropsychology has emphasized the importance of studying the cognitive origins of psychiatric disorders. From this perspective, the disorders in attention and information processing are seen as critical links in the causal chain leading to formation of schizophrenic symptoms. Attention impairments are not necessarily seen as directly causal in symptom formation but rather as a vulnerability factor that when coupled with other vulnerability factors and stresses, contribute to the onset of psychosis. Sometimes these attention deficits are referred to as nonsocial cognitive deficits, inasmuch as they refer to pure cognitive functioning, or the basic cognitive processes that operate regardless of environmental context. The profile of attention impairment informs the intervention strategy. Those deficits that are vulnerability factors or that limit functional outcome are considered the important ones to target for intervention.

Attention remediation has long been the focus of treatment in programs for the head injured and many remediation exercises have been developed to improve attention in the head injured. These exercises show the influence of neuropsychological models of attention in their singular focus on specific nonsocial aspects of attention. The ability to focus, encode, rapidly process and respond, maintain vigilance, and avoid distraction from competing stimuli, are all aspects of attention that may be isolated for remediation in these exercises. Often these exercises are computerized to facilitate standardization of presentation, precise measurement of response, and frequent feedback. Because nonsocial aspects of attention have been identified as vulnerability factors in schizophrenia, the exercises are considered relevant in psychiatric rehabilitation as well.

Given the ultimate goal of improving attention in real-life contexts it is important that the gains made on laboratory tasks of attention generalize outside the remediation setting. For this to happen there must be an appreciation of how skills are best learned and what factors influence recovery. It is in this regard that learning and educational theory, and rehabilitation psychology have had the most influence.

B. Learning Theory and Attention Remediation

The use of techniques such as shaping, errorless learning, and frequent positive feedback show the influence of behavioral and learning theory. Errorless learning refers to the careful titration of difficulty level

so that the patient learns without resorting to trial and error, and has a positive experience with increasing challenge. Shaping and positive feedback are integral components of the social learning approach of Paul and Lentz, and have been used extensively to decrease maladaptive behaviors in the chronic, highly regressed psychiatric patient. Although Paul's social learning approach was not developed for use with cognitively impaired individuals, methods such as shaping and positive reinforcement have since been found effective for treating attention impairment. Learning theory has also indicated some of the factors that promote generalization of skill. Within the remediation exercises, target behaviors need to be paired with multiple cues, ideally in various contexts, so that the behavior will be elicited in multiple settings. In attention training this occurs when the focus/execute response is paired with auditory, visual, and social cues in a variety of tasks. Patients who do multiple tasks that exercise the ability to focus and quickly execute a response are more likely to improve than those whose training is limited to repetitive execution of one task.

C. Educational Psychology and Attention Remediation

Apathy, anhedonia, and avolition are frequent symptoms in the severely mentally ill, and these motivational problems compromise engagement in treatment. Educational psychology has shown that engagement in a learning activity is most likely to occur when the person is intrinsically motivated, that is, when the person finds the learning experience compelling and not when the person is compelled by external forces to do it. Intrinsic motivation and task engagement occur when the tasks are contextualized, personalized, and allow for learner control. Contextualization means that rather than presenting material in the abstract it is put in a context whereby the practical utility and link to everyday life activities are obvious to the student. In attention remediation, a decontextualized focusing task would require the person to press a button every time a red square appeared on the otherwise blank computer screen. A contextualized focusing task would require the person to assume the role of pedestrian in a task that simulated the experience of responding to crosswalk signals. Personalization refers to the tailoring of a learning activity to coincide with topics of high interest value for the student. Learner control refers to the provision of choices within the learning activity, in order to foster self-determination. In attention training, this occurs when the patient can choose task features such as difficulty level or presence of additional auditory cues when doing a visual vigilance exercise. Intrinsic motivation, depth of engagement in the task, amount learned, and self-efficacy can all be increased when task design incorporates educational principles.

D. Rehabilitation Psychology and Attention Remediation

Rehabilitation psychology emphasizes an integrated approach to the patient that appreciates the complex interaction of cognitive, emotional, and environmental variables in the recovery process. From this perspective, attention deficits are not seen simply as a manifestation of neuropsychological dysfunction, but rather social–cognitive dysfunction. Rehabilitation psychology favors a more interactive, learning process approach to attention remediation over the formal didactic exercises used in a purely cognition-oriented program. This allows for the social and emotional as well as the cognitive needs of the patient to be addressed and promotes a smooth interplay of cognitive and emotional variables in everyday functioning.

E. Rationale for Computer-Assisted Exercises

Computer-based technology is used in attention training because it is possible to give frequent and consistent feedback, there are opportunities for positive reinforcement, the learning experience can be individualized and personalized, there are opportunities for giving control over the learning process, difficulty levels can be individualized so that the task is challenging but not frustrating, and the student can be given ample opportunity to apply the targeted skill in contextualized formats. The computer itself simply provides the overall learning platform; the software provides the learning tools. The design of the software program and whether or not it incorporates basic educational principles, largely dictates whether the remediation experience will be frustrating or engaging. Computer exercises exert a remedial effect on attention through two broad categories of mechanisms: specific and nonspecific. Specific mechanisms refer to those aspects of the activity that focus specifically on attention. The nonspecific mechanisms refer to those aspects of computer activity that promote or facilitate skill acquisition without directly targeting attention. An example of a nonspecific mechanism would be self-pacing, an option many tasks provide. Self-pacing provides a measure of

control, which is known to facilitate learning. Both the specific and nonspecific mechanisms contribute meaningfully to the overall therapeutic effect.

III. EMPIRICAL STUDIES

The largest and best controlled studies of treatment efficacy indicate a positive effect of attention training. These effects can be seen both in terms of improved performance on pure measures of (nonsocial) attention and improvement in social and psychological functioning. Patients exposed to computerized attention exercises such as the ORM have been shown to improve both on the remediation exercises themselves and on the CPT, an independent measure of ability to focus and sustain attention. Noncomputerized attention training such as the IPT groups, which offer exercises to improve attention in social contexts, has also been demonstrated to improve performance on some aspects of pure, nonsocial attention. Performance on the Span of Apprehension, which requires rapid scanning of stimulus features, was improved in patients exposed to 6 months intensive IPT training. There is also evidence that computerized and noncomputerized attention training impacts on social competence and psychological status as measured by such instruments as the AIPSS and BPRS. Shaping techniques used in group therapy to improve social aspects of attention have been found to improve ability to stay on task as measured in minutes, in small samples of chronic treatment refractory patients, some who had low IQ. Well-controlled, large treatment efficacy studies are still rather scarce and replication of results is required. Many parameters have yet to be studied, for example, optimal intensity and duration of treatment, characteristics of treatment responders and nonresponders, and optimal balance of focus on social and nonsocial aspects of attention.

IV. SUMMARY

Attention impairment is a common symptom of psychiatric disease. In schizophrenia, attention impairment is associated with poor outcome, deficient social skills, and diminished ability to benefit from rehabilitation and skills training. The attention system is composed of subsystems that perform different but interrelated cognitive functions such as the ability to focus, encode, rapidly process and respond, maintain vigilance, and avoid distraction from competing stimuli. These aspects of attention can be differentially impaired and the first step in designing a treatment program is to identify the type of attentional problems that will be the target of intervention. Both the purely cognitive and more social aspects of attention can be addressed in the remediation program. The procedures available for remediation of attention include computerized and noncomputerized exercises that may be done individually or in groups. Computerized exercises tend to focus on the more purely cognitive aspects of attention, whereas group exercises often target attention as it applies in a social setting.

Given that attention deficits are not simply a manifestation of neuropsychological dysfunction, but rather social–emotional–cognitive dysfunction, remediation procedures that emphasize an integrated approach to the patient are more likely to appreciate the complex interaction of cognitive, emotional, and environmental variables in the recovery process. Attention remediation has been found to be effective in improving performance on pure measures of (nonsocial) attention and social and psychological functioning. Replication of well-controlled treatment efficacy studies is needed. Many treatment parameters have yet to be researched, for example, optimal intensity and duration of treatment, characteristics of treatment responders and nonresponders, and the various contributions of specific and nonspecific treatment effects.

See Also the Following Articles

Differential Attention ■ Neuropsychological Assessment

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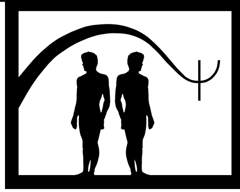

Aversion Relief

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I. Description of Treatment
II. Theoretical Bases
III. Empirical Studies
IV. Summary
Further Reading

GLOSSARY

aversion relief A therapeutic procedure in which the occurrence of desired behavior leads to the cessation of an aversive stimulus.

aversion therapy A variety of specific techniques based on both classical and operant conditioning paradigms intended to change maladaptive behavior.

covert sensitization The pairing in imagination of undesired behavior with covert negative consequences.

negative reinforcement Removal of an aversive stimulus that leads to an increase of the future probability of the desired response.

punishment A method of behavior control in which an undesired response is followed by a noxious stimulus, thus leading to a reduction of the future probability of the undesired response.

I. DESCRIPTION OF TREATMENT

Aversive methods were used widely in the 1960s and 1970s, but for a variety of reasons these methods are less accepted today. Aversive methods are used for treating maladaptive approach behavior, such as alcohol dependence, smoking, overeating, obsessive-compulsive behavior, and various forms of deviant sexual behavior. Furthermore, perhaps most controversial, aversive methods have also been used in patients with autism and mental retardation.

Aversive conditioning is intended to produce a conditioned aversion to, for example, drinking or deviant sexual interest. *Aversion therapy* includes a variety of specific techniques based on both classical and operant conditioning paradigms. With aversive conditioning in alcohol-dependent subjects, a noxious stimulus (unconditioned stimulus, UCS) is paired with actual drinking (conditioned stimulus, CS) or with visual or olfactory cues related to drinking. A variety of aversive stimuli have been used, the most popular of which were electric shock and nausea- or apnea-inducing substances. *Covert sensitization* is a variant of aversive conditioning wherein images (e.g., of drinking situations or of deviant sexual stimuli) are paired with imaginal aversive stimuli. It is actually “covert” because neither the undesirable stimulus nor the aversive stimulus is actually presented, but these are presented in imagination only. “Sensitization” refers to the intention to build up an avoidance response to the undesirable stimulus.

In *aversion relief* the subject is enabled to stop the aversive stimulus by performing more appropriate behavior, which will lead to feelings of relief. For example, deviant sexual stimuli (e.g., pictures of nude children) may be the UCS followed by the onset of shock (CS), while the cessation of shock is preceded by the appearance of pictures of nude adult women. The procedure is

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intended to condition the pleasant experiences associated with the cessation of shock (aversion relief) to adult females, while the unpleasant experiences associated with the onset of shock are conditioned to children.

A classical example of aversion relief therapy in children with autism was presented by Lovaas and his coworkers. Autistic children were asked to approach the therapist. If the child did not approach, shock was delivered and continued until an approach was made. Subsequently, shocks could be avoided by approaching within 5 seconds of the request. This application of aversion relief led to a dramatic increase in the approach behavior of autistic children and had maintained its effect nine months later without further shocks.

A common example of aversion relief therapy is the application of bitter-tasting substances on the thumb in children who engage in thumb- or finger-sucking activity. Thumb- or finger-sucking will now lead to a bad taste, which will stop as soon as the child withdraws the thumb or finger out of the mouth (aversion relief).

Aversion relief has also been applied in treating anxiety disorders by Solyom and colleagues, including obsessive compulsive behavior, specific phobias, and agoraphobic avoidance. Solyom detailed an aversion relief procedure in the context of agoraphobic avoidance. Patients were repeatedly guided through audiotaped self-generated narratives of phobic avoidance. The vignettes might be interspersed with short pauses after which mild electric shocks (ES) were delivered. Patients could terminate the shock by pressing a button and continuing the taped approach scenario. For a particular female patient the narrative was: *"I am getting dressed … 15 sec … ES, button pressed (by patients to terminate ES) to leave my home, as I am getting prepared and put my make-up on … 15 sec … ES, button pressed, the bell rings … 15 sec … ES button pressed. My heart is beating very fast I answer the bell and my boyfriend comes in, he says … 15 sec … ES button pressed, let's go Mary, … 15 sec … ES button pressed, the party is already on."*

Covert sensitization might be considered an imaginal variant of aversion relief and is also referred to as aversive imagery. Before the formal treatment by covert sensitization begins, it is important to gather detailed information concerning the characteristics associated with the maladaptive approach behavior to be changed. This information is essential in order to develop realistic scenes for the patient. Furthermore, some time is spent in providing the treatment rationale. It is explained that the problem (e.g., drinking) is a strongly learned habit that must be unlearned by the association of the pleasurable situation (e.g., drinking) with an unpleasant stimulus (feelings of nausea and vomiting).

The procedure will be illustrated with a case of a male alcohol-dependent patient. In this procedure, the patient first learns to relax. When he is able to relax, he is asked to close his eyes and to visualize very clearly a drinking situation. For example, he may be asked to visualize himself in a pub, looking at a glass full of beer, holding the glass in his hand, and having the glass touch his lips. Then he is asked to imagine that he begins to feel sick to his stomach and that he starts vomiting all over himself and the female bartender. Then he is told to imagine that he rushes outside, or that whenever he is tempted to drink but refuses to do so, the feeling of nausea goes away and he will feel relieved and relaxed (aversion relief).

It is important to use as many aversive details as possible. A verbatim account might run as follows: *Your stomach feels rather nauseous. As you look at the glass, puke comes up into your mouth. As soon as you smell the beer, you cannot hold it any longer: you vomit. It goes all over your hand, and your glass. Snot and mucous comes out of your nose, you can see it floating around in the beer. There is an awful smell. As you look at this mess you just can't help but vomit again and again. The female bartender gets some on her shirt and pants. You see her shocked and disgusted expression. You run out of the bar and you feel better and better.*

The patient is usually asked to repeat the scenes presented during the therapy sessions a number of times daily until the next appointment. These scenes can be written on pocket-sized cards. The patient is instructed to carry these cards and to read these scenes several times a day. Furthermore, the patient is also instructed to use this procedure immediately upon noticing an urge to drink. Thus, a lot of *in vivo* conditioning occurs in actual temptation situations, when the patient applies the procedure in the prescribed manner outside the therapist's office.

II. THEORETICAL BASES

Aversion relief procedures are rooted in learning theory. Decreasing the frequency of a behavior by presenting an aversive stimulus immediately after an inappropriate response is a case of punishment. Increasing the rate of a behavior by removing aversive stimuli contingently following a desired response is termed negative reinforcement. Escape responses produce relief from aversive stimuli; this procedure is