# STRESS INOCULATION TRAINING: A PREVENTATIVE AND TREATMENT APPROACH

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Clinicians who seek to provide help to stressed individuals, on either a treatment or on a preventative basis, are confronted with a major challenge. As Elliott and Eisdorfer (1982) observed, stressful events come in diverse forms that include exposure to

- acute time-limited stressors including such events as preparing for specific medical procedures (e.g., surgery, dental examination), or preparing for invasive medical examinations (e.g., biopsies, cardiac catherization), or having to confront specific evaluations(e.g., a PhD defense);
- b) a sequence of stressful events that may follow from the exposure to traumatic events such as a terrorists attack, a rape, a natural disaster that results in a major loss of resources, or exposure to stressors that require transitional adjustments due to major losses (e.g., death of a loved one, becoming unemployed), each of which gives rise to a series of related challenges;
- c) <u>chronic intermittent stressors</u> that entail repeated exposures to stressors such as repetitive evaluations and ongoing competitive performances (e.g., musical or athletic competitions), recurrent medical tests or treatments, or those experiencing episodic physical disorders such as recurrent headaches, as well as the exposure to intermittent stress that accompanies certain occupational roles, such as combat;
- d) <u>chronic continual stressors</u> requiring individuals to cope with debilitating medical or psychiatric illnesses and those who experiencing physical disabilities resulting from exposure to traumatic events (e.g., burn patients, spinal cord injuries, traumatic brain injuries), or exposure to prolonged distress including marital or familial discord, urban violence, poverty, racism, as well as exposure to persistent

occupational dangers and stressors in professions such as police work, nursing and teaching.

These varied stressful events may range from being time-limited requiring situational adjustments to those chronic stressful events that are persistent and that require long-term adaptation. Stressors may also differ in terms of whether they are potentially controllable (i.e., stress can be lessened, avoided or eliminated by engaging in certain behaviors) <u>versus</u> those stressors judged to be uncontrollable (i.e., an incurable illness, exposure to ongoing threats of violence, caring for a spouse with severe dementia); predictable <u>versus</u> unpredictable; short duration (i.e., an examination) <u>versus</u> chronic (i.e., individuals living in a racist society, being exposed to poverty, or having a stressful job); intermittent versus recurrent; current <u>versus</u> distant in the past. Distant stressors are traumatic experiences that occurred in the distant past yet have the potential to continually impact on one's well-being and even modify the individual's immune system because of the long-lasting emotional, cognitive and behavioral sequelae (Segerstrom & Miller, 2004).

In some instances, individuals are exposed to multiple features of such stressful events. For instance, consider the most recent example of where I was asked to consult in the possible application of cognitive behavioral stress inoculation techniques for a highly distressed population. In July, 2002, the Canadian government established a treatment team to address the clinical needs of a native Inuit people in the newest Canadian province of Nunavit. The Inuit people had been dislocated, being forced to shift from a nomadic existence to confined resettlements with accompanying economic deprivations (substandard living conditions, overcrowding, poverty), and disruptions to traditional roles and relationships. On top of having to cope with all of these chronic stressors, a subset of young male Inuit youth experienced a prolonged period of victimization. Over a period of six years, in the early 1980's, in three native Inuit communities, a selfconfessed male pedophile school teacher who was appointed by the government, sexually abused 85 male Inuit youths. The aftermath of this exposure to multiple stressors has been a high rate of depression, substance abuse and domestic violence. Most telling is the high suicide rate among the Inuit who are twice as likely to commit suicide than other native populations and four times as likely to engage in self-destructive behaviors. They also have the highest completion rate of suicide attempts (some 38% of attempters) (Brody, 2000, Meichenbaum 2005).

What clinical tools exist to help individuals and communities cope with the diversity of such stressors (acute, chronic and sequential)? What empirically-based stress management procedures exist that can be used in a culturally-sensitive fashion to aide individuals in their adaptation processes? How can clinicians help individuals prepare for and prevent maladaptive responses to stressors and help them build upon the strengths and resilience that they bring to such challenging situations?

For the last 30 years, I have been involved in the development of stress prevention and reduction procedures to address these challenging questions, under the label of Stress Inoculation training (SIT) (Meichenbaum, 1975, 1976, 1977, 1985, 1993, 1996, 2001; Meichenbaum & Deffenbacher, 1988; Meichenbaum & Fitzpatrick, 1993; Meichenbaum & Jaremko, 1993; Meichenbaum & Novaco, 1978, 1986; Meichenbaum & Turk, 1987; Turk, Meichenbaum & Genest, 1983).

In this Chapter, I intend to bring together these clinical experiences and the research of this 30 year journey, highlighting the work of other clinical researchers who have adapted

SIT, or who have developed related cognitive-behavioral stress management interventions. In lieu of the multiple ongoing stressors that society now confronts including possible terrorist attacks, wars, AIDS, increasing poverty, urban and family violence, the need for effective empirically-based interventions is all the more pressing. This need is more evident as I have recently retired from the University of Waterloo in Ontario, Canada and have become the Research Director of the Melissa Institute for Violence Prevention and Treatment of Victims of Violence in Miami, Florida. (Please see *www.melissainstitute.org*).

The discussion of stress reduction interventions begins with a consideration of the concept of inoculation that gave rise to the Stress Inoculation Training (SIT) treatment approach. I will then consider the theoretical underpinnings to SIT and provide a detailed description of the clinical procedural steps involved in conducting SIT. Illustrative applications of how SIT has been applied on both a treatment and preventative basis will be offered. For a detailed summary of the empirical status and meta-analytical review of SIT, the interested reader is directed to reviews by Maag and Kotlash (1994) who examined SIT with children and adolescents; Saunders, Driskell, Johnson and Salas (1966) who reviewed patients with anxiety; Meichenbaum (1993) who provided a 20 year update of some 200 SIT case studies, demonstration projects and clinical research outcome studies; and Meichenbaum (1996, 2001) who offered a review of SIT with adults with PTSD and adults with anger-control problems and aggressive behaviors.

The primary focus of this chapter is on the "clinical wisdom" that has been garnered over 30 years of applying SIT on both a treatment and preventative basis.

#### **Concept of Inoculation**

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A central concept underlying SIT is that of "inoculation" which has been used both in medicine and in social-psychological research on attitude change. In 1796, Edward Jenner noted that inoculation of humans with cowpox conferred immunity against the more deadly smallpox virus. In medicine, vaccinations often involve exposure to weaker forms of a disease, so as to ward off more severe reactions. In such cases, the earlier exposure is generally more moderate than the stress or disease to be guarded against. Such exposure produces antibodies and physically prepares the body for future attacks.

Consistent with the concept of inoculation, Aldwin and Levenson (2004) highlight an area of biology called *Hormesis* that studies the <u>positive</u> results that derive from exposure to small amounts of toxins that in larger amounts may prove lethal. A series of studies on animals indicated that small and brief exposure to stressors can contribute to the development of repair mechanisms that protect against the impact of subsequent more intense stressors (Calabrese & Baldwin, 2002).

In a comparable fashion, SIT which is designed to intervene with humans at the psychosocial level provides individuals with experience with minor stressors that fosters psychological preparedness and promotes resilience.

Similarly, in the area of attitude change, McGuire (1964) has observed that prior exposure to attitudinal information can protect or "inoculate" individuals from subsequent more intense efforts at persuasion. Such prior exposure to persuasive efforts mobilizes counter-attitudinal strategies that can be used in subsequent conversion efforts. In both medical and attitudinal inoculations, a person's resistance is enhanced by exposure to a stimulus strong enough to arouse defences and coping processes without being so powerful that it overwhelms the individual. SIT is based on the notion that exposing clients to milder forms of stress can bolster both coping mechanisms and the individual's (group's, community's) confidence in using their coping repertoire. SIT is designed to bolster individual's preparedness and develop a sense of mastery.

## **Theoretical Underpinnings**

SIT adopts a transactional view of stress and coping as espoused by Lazarus and Folkman (1984). Their model proposed that stress occurs whenever the perceived demands of a situation tax or exceed the perceived resources of the system (individual, family, group, or community) to meet those demands, especially when the system's wellbeing is judged or perceived as being at stake. This relational process-oriented view of stress emphasizes the critical role of cognitive-affective appraisal processes and coping activities. According to the transactional perspective, stress is neither a characteristic of the environment alone nor a characteristic of the person alone. Instead, stress is defined as a particular type of transactional, bidirectional, dynamic relationship between the person and the environment, in which the individual or group perceived the adaptive demands as taxing or exceeding their perceived available coping resources to meet those demands. Like "beauty", stress is in large part in the "eye of the beholder".

Another related literature that has influenced the development of SIT is that deriving for a <u>constructive narrative perspective</u> (CNP). The CNP views individual, groups and communities as <u>story-telling entities</u> who construct narratives about themselves, others, the world, and the future. The nature and content of the "stories" that individuals tell themselves, as well as to others play a critical role in influencing the coping processes. A growing literature on the roles that cognitions and emotions play in the maintenance of stress reactions, especially in the case of persistent Posttraumatic Stress Disorder (PTSD)

has highlighted the potential usefulness of a CNP (Brewin & Holmes, 2003; Ehlers & Clark, 2000; Harvey, 1996; McAdams, Reynolds, Lewis, Patten & Bowman, 2001: Neimeyer, 2001; Smucker, Gruner & Weis, 2003). At both the personal and cultural levels, the narratives are organized around identifiable episodes, including intelligible plots and characters and convey goals and themes. In the case of traumatic stressful events, the narratives often highlight the perceived "defining moments" of the life stories. Meichenbaum (2005) has summarized the features of clients' narratives and behaviors that contribute to persistent stress reactions. These elements are enumerated in Table 1.

#### **INSERT TABLE 1 ABOUT HERE**

How distressed individuals and communities try to make sense of and transform their emotional pain can influence their coping processes. Insofar as individuals and communities engage in the cognitive and behavioral elements enumerated in Table 1, the greater the likelihood of their persistent stressful reactions. SIT can be viewed as an engaging way to help clients become aware of the impact of their narratives and maladaptive stress-engendering behaviors (e.g., avoidance, rumination and brooding, catastrophizing, safety-seeking behaviors, absence of self-disclosure and failure to access and employ social supports). SIT helps distressed individuals become aware of how they can engage in behaviors that maintain and exacerbate their distress. SIT helps clients construct a more adaptive narrative, find "meaning", and engage in more adaptive directaction problem-solving and palliative, emotional-regulation, acceptance coping skills. SIT trainers are <u>not only</u> in the business of teaching coping skills and enhancing the

clients' confidence and sense of efficacy in applying these coping skills, but the SIT trainer is also in the business of helping clients construct new life stories that move them from perceiving themselves as "victims" to becoming "survivors", if not indeed "thrivers". How does SIT help clients achieve these challenging and laudable goals?

### What is Stress Inoculation Training (SIT)?

SIT is a flexible, individually tailored, multifaceted form of cognitive-beahvioral therapy. Given the wide array of stressors that individuals, families and communities experience, SIT provides a set of general principles and clinical guidelines for treating distressed individuals, rather than a specific treatment formula or a set of canned interventions. SIT is <u>not</u> a panacea and it is often used as a supplemental tool to other forms of interventions such as Prolonged Exposure with traumatized patients or Environmental and Community Supports with individuals confronting chronic stressors, as described below.

SIT consists of three interlocking and overlapping phases:

(1) A conceptual educational phase;

- (2) A skills acquisition and skills consolidation phase; and
- (3) An application and follow-through phase.

The ways that these there SIT phases are implemented will vary depending upon both (a) the nature of the stressors (e.g., acute time-limited stressors such as a medical procedure <u>versus</u> prolonged ongoing repetitive stressors such as working in a highly stressed occupation or living in a high-risk violent environment) and based upon (b) the resources and coping abilities of the clients.

The treatment goals of SIT are to bolster the clients' coping repertoire (intra- and interpersonal skills), as well as their confidence in being able to apply their coping skills in a flexible fashion that meets their appraised demands of the stressful situations. Sometimes stressors lend themselves to change and can be altered or avoided, while other stressors are <u>not</u> changeable (e.g., irreversible loss, incurable illness). Thus, some stressful situations do <u>not</u> lend themselves to direct-action problem-solving coping efforts, since resolutions are not always attainable. In such instances, an emotionally palliative and accepting set of coping responses are most appropriate (e.g., mindfulness training, reframing, attention diversion, adaptive engaging in spiritual rituals, adaptive affective expression, and humor). SIT highlights there are is no "correct", nor one way to cope with the diversity of stressors. What coping efforts may work in one situation, or at one time, may not be applicable at other times or in other situations.

In the <u>initial conceptual education phase of SIT</u>, a collaborative working relationship and therapeutic alliance are established between the clients and the trainer. This relationship provides the basis or the "glue" that allows and encourages clients to confront stressors and implement the variety of coping skills, both within the training sessions and *in vivo* that constitute the needed "inoculation" exposure trials. Norcross (2004) has underscored the critical importance of therapy relationships factors that contribute to the change processes. Besides working on the formulation of and maintenance of a therapeutic alliance, the second objective of this initial phase of SIT is to enhance the clients' understanding and awareness of the nature and impact of their stress and coping resources. A variety of clinical techniques are used to nurture this educational process. This informational exchange is <u>not</u> a didactic lecture by the trainer/therapist, but rather a by-product of a discovery-oriented inductive Socratic exchange (i.e., the SIT trainer uses "curious" questions to promote the clients' processing). Moreover, this educational process is ongoing throughout the course of SIT training. While at the outset of SIT, the focus may be on possible warning signs or triggers and on the chain analyses of clients' accounts, later on in SIT training the education process may focus on relapse prevention and self-attributional processes (i.e., how to ensure that clients take "personal credit" for changes they have brought about).

A variety of clinical techniques including Socratic discovery-based interviewing, psychological testing with constructive feedback about deficits, styles of responding and "strengths" or signs of resilience, self-monitoring activities, bibliotherapy, exposure to modeling films, are used to foster the clients' increased awareness and sense of personal control and mastery. Table 2 provides an enumeration of the informational content that is to be covered over the course of various phases of SIT.

## **INSERT TABLE 2 ABOUT HERE**

In a collaborative fashion a more facilitative reconceptualization of the clients' stressful experiences and reactions is formulated. Rather than conceiving their stressors as being overwhelming, uncontrollable, unpredictable, debilitating, and as hopeless, the SIT trainer helps clients develop a sense of "learned resourcefulness".

The <u>second phase</u> of SIT, which follows naturally from the reconceptualization process, focuses upon helping clients <u>acquire coping skills</u> and upon <u>consolidation of those coping skills</u> that they already possess and upon removing any intra-, and

interpersonal and systemic barriers that may exist. The intra- and interpersonal coping skills are taught and practiced in the clinical or training setting and then gradually practiced *in vivo*. A major focus of this skills training phase is the emphasis placed on following guidelines to achieve generalization and maintenance of the treatment effects. Therapists cannot merely "train and hope" for generalization. SIT trainers need to explicitly build the technology of generalization training into the treatment protocol, as noted below.

The final application and follow-through phase of SIT includes opportunities for clients to apply the variety of coping skills on a graduated basis across increasingly demanding levels of stressors (that is, following the "inoculation" concept). Such techniques as imagery and behavioral rehearsal, modeling, role playing and graded in *vivo* exposure are employed. A central feature of this application phase is the use of relapse prevention procedures (Marlatt & Gordon, 1985; Witkiewitz & Marlatt, 2004). The SIT trainer explores with clients the variety of possible high-risk stressful situations that they may re-experience (e.g., reminders, anniversary effects, dysphoric emotions, interpersonal conflicts and criticisms and social pressures). Then, the clients rehearse and practice in a collaborative fashion with the trainer (and with other clients in a group setting or with significant others), the various intra-and interpersonal coping techniques that might be employed. As part of the relapse prevention intervention, clients are taught how to view any lapses, should they occur, as "learning opportunities", rather than as occasions to "catastrophize" and relapse. The follow-through features of SIT are designed to extend training into the future by means of including booster training

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sessions, active case management, engagement of significant others and environmental manipulations.

Consistent with a transactional model of stress that SIT embraces and consistent with the recognition that the stress clients experience may be endemic, societal, institutional and unavoidable, SIT often goes beyond the clients to involve significant others. For example, in preparing patients for stressful medical examination, the SIT trainer can focus on teaching coping skills to distressed medical patients, but the SIT trainer can also attempt to work with hospital staff in order to reduce the nature and level of hospital and medical stress. (See Kendall, 1983 description of work with catherized patients and Wernick, Jaremko & Taylor, 1981; Wernick, 1983 work with burn patients.) In competitive sports, a SIT trainer can help athletes develop their coping skills in order to handle the stress of competition (Long, 1980; Mace and colleagues 1983, 1986, 1987), but as Smith (1980) observes, a trainer can also attempt to influence the athlete's coaches' and parents' behaviors, thus reducing a major source of competitive stress. Similarly, in work with victims of rape, or terrorist attacks, the unfortunate "secondary victimization" of the distressed individuals from community agents (doctors, police, judges, teachers, administrators, health care providers, parents and peers) can exacerbate the stress responses (see Ayalon, 1983; Veronen & Kilpatrick, 1983). It would be shortsighted to delimit SIT interventions to just the targeted victims or distressed clients and not to attempt to influence the stress-engendering behaviors and attitudes of significant others and community members. SIT has adopted the dual-track strategy of working directly with the stressed clients, as well as with significant others and community agents

who may inadvertently, unwittingly and perhaps, even unknowingly, exacerbate stress. SIT trainers search for and enlist "allies" to support the ongoing coping efforts of clients.

### How Is Stress Inoculation (SIT) Conducted?

One of the strengths of SIT is its flexibility. SIT has been carried out with individuals, couples, families, small and large groups. The length of the SIT intervention has varied, being as short as 20 minutes in preparing patients for surgery (Langer, Janis & Wolfer, 1975) to forty 1-hour weekly and bi-weekly sessions administered to psychiatric patients with recurrent mental disorders and to individuals with chronic medical problems (Turk, Meichenbaum & Genest, 1983). In most instances in the clinical domain SIT consists of some 8 to 15 sessions, plus booster and follow-up sessions conducted over a 3 to 12 month period.

Obviously, the manner in which the three phases of SIT (conceptualization; skills acquisition and consolidation; application and follow-through) are conducted will vary, depending upon the nature of the clients and the length of SIT training. The content of the conceptualization phase, the specific skills that will be emphasized and trained and the nature of the application phase (inoculation trials) will each be specifically geared to the targeted population. There is, however, sufficient congruence across SIT application that a procedural flow chart of the SIT treatment procedure can be outlined, as enumerated in Table 3.

### **INSERT TABLE 3 ABOUT HERE**

More detailed clinical presentations of SIT are offered in Meichenbaum (1996; 2001).

#### **Illustrative Applications of Stress Inoculation Training (SIT)**

SIT has been employed on both a treatment and preventative manner with a wide variety of medical and psychiatric populations and with a variety of diverse professional groups who experience high rates of job-related stress. Elsewhere (Meichenbaum, 1993), these diverse applications have been reviewed, and more recent review are also available (Marge & Kotlash, 1994; Saunders et al., 1996). On a treatment basis, SIT and closely aligned cognitive-behavioral stress management procedures (Antoni et al., 2001; Cruess et al., 2000), anxiety management approaches (Suinn, 1999), coping skills training (Folkman et al., 1991), cognitive-affective stress management training (Smith & Rohsenow, 1987) have been employed with a wide variety of clients. These clinical applications include:

- (1) <u>medical patients</u> who have various acute and chronic pain disorders, patients with breast cancer and those with essential hypertension, burn patients, ulcer patients and patients with rheumatoid arthritis and on <u>preventative basis</u> SIT has been employed with medical and dental patients who are preparing for surgery, invasive medical examinations, Type A individuals and with the caretakers of both child and adult medically ill patients;
- (2) <u>psychiatric patients</u> with PTSD as a result of sexual assault; adults and adolescent patients with severe problems of anxiety (e.g., panic attacks) and those with anger-control problems and aggressive behaviors such as in the case of abusive parents; aggressive individuals who are developmental delayed and chronically distressed mentally ill outpatients;

- (4) <u>professional groups</u> such as probation officers, nurses, teachers, military personnel, psychiatric staff members and disaster and safety workers;
- (5) <u>individuals</u> who have to deal with the <u>stress of life transitions</u> including coping with unemployment, transitioning into new settings such as high school or reentering university, overseas placement and joining the military.

In short, since its origin in 1976, SIT has been employed on both a treatment and preventative basis with a wide variety of diverse clinical populations and with highly stressed occupational groups. The following description provides examples of some of these diverse applications.

### Application of SIT to Patients With Medical Problems

The SIT interventions with medical patients have a heavy educational component in which patients and often their caretakers receive procedural and sensory information and are then afforded opportunities to practice coping skills. How patients can use their own preferred idiosyncratic coping strategies is highlighted. The coping training may include the use of coping modeling films, both imaginal and behavioral rehearsal and *in vivo* graded exposure. Such behavioral practice is accompanied by corrective feedback, personal attribution training where patients "take credit" for the changes they have been able to bring about, and relapse prevention strategies should lapses occur. The manner in which the SIT is conducted needs to be individually tailored to the age of the patients and to the patient's preferred mode of coping. Finally, the research on the application of SIT

to medical patients has underscored the need to ensure that the length of SIT treatment should be performance-based, rather than time-based (an arbitrarily set number of sessions). Instead of all medical patients receiving a prescribed length of treatment, the length of treatment or the number of multiple practice and "inoculation" trials should be tailored to some behavioral criteria of mastery and accompanying expressed self-efficacy, especially for patients with intense and chronic medical problems. The following three examples illustrate the varied application of SIT to medical problems.

- (1) Langer, Janis and Wolfer (1975) provided 20 minutes of coping skills training to medical patients prior to their surgery. The conceptualization phase of SIT highlighted the manner in which stress can be affected by selective attentional and cognitive processes and on how to focus on the benefits that can accrue from the surgery and on immediate coping efforts (relaxation, self-guided rethinking efforts, imaginal rehearsal). The SIT group relative to both informational and assessment control groups evidenced significantly less pre-operative anxiety and less postoperative requests for pain relievers and sedatives and the SIT treated patients also stayed in the hospital for a shorter period of time. Siegal and Peterson (1980) have used a similar multifaceted coping skills package of relaxation training, calming self-talk and guided imagery to help young dental patients reduce stress.
- (2) Jay and Elliott (1990) developed a SIT videotape film for parents of 3 to 12 year old children with pediatric leukemia who have to undergo bone marrow aspirations and lumbar punctures. One hour prior to each child's medical procedure, the parents were shown a brief film of a model parent who employed

coping self-statements, relaxation efforts and coping imagery rehearsal. The parents were then given an opportunity to practice these coping skills. Relative to parents who received a child-focused intervention, the SIT-treated parents evidenced significantly less anxiety and enhanced coping skills. Videotaped SIT modeling films have been used in a variety of clinical settings including anger-control, preparing for forensic examination with rape victims, parenting (See Meichenbaum , 1996, 2001).

(3) Finally, cognitive-behavioral stress management (CBSM) that overlaps with many of the features of SIT has been used most impressively with female earlystage breast cancer patients. Like SIT, this 10 week group CBSM begins with (a) an educational component that debunked myths about breast cancer, enhanced patients' awareness of stress and ways to reduce it and nurtured hope; (b) a skills acquisition and practice phase where patients learned ways to use intra- and interpersonal coping skills that ranged from emotional expression of concerns and feelings and acceptance skills to relaxation, problem-solving benefit-finding and ways to preserve and augment the patients' social support networks; and finally (c) an application phase where patients were given opportunities and encouraged to practice the learned coping skills. Moreover, the patients were encouraged to take credit for the changes they were able to bring about in order to further promote a positive self-image. The CBSM not only resulted in improved behavioral adjustment and posttraumatic growth, but CBSM also continued to improve immune functioning (i.e., greater lymphocyte proliferative responses at a three month follow-up) relative to a control group (Cruess et al., 2000).

# Application of SIT to Psychiatric Patients

SIT has been employed with a variety of psychiatric groups on both an inpatient and outpatient basis. In most studies, SIT has been compared to or combined with other multifaceted psychoeducational and pharmacological interventions; for example, Holcomb (1986) has examined the relative efficacy of eight 1-hour SIT sessions with and without psychotropic medications in the treatment of psychiatric inpatients. In terms of anxiety, depression and overall subjective distress, Holcomb reported that SIT with and without medication was superior to only pharmacological interventions; impressively, this relative improvement was evident at a 3-year follow-up, as indicated by fewer patient readmissions for psychiatric problems.

SIT and related cognitive-behavioral interventions have been applied to psychiatric patients who have specific disorders such as panic attacks, PTSD, and anger-control problems and aggression. In many instances, these patients have overlapping comorbid disorders.

In the anxiety domain, the panic control treatment procedures of Barlow (1988), Clark and Salkovskis (1989) and Rapee (1987) have extended the SIT treatment model to patients with anxiety disorders. During the initial conceptualization phase, the anxiety patients are offered an explanation and conceptual model based on their symptoms that highlight the interactive role that hypervigilance about bodily cues, their "catastrophic" misinterpretations of their physiological arousal, and their hyperventilation play is eliciting and exacerbating their anxiety reactions. Such a reconceptualization of panic attacks readily leads to the second phase of treatment which is the acquisition and practice of a variety of coping responses that include (1) relaxation skills in order to control physical tenseness and hyperventilation; (2) cognitive coping skills in order to control "catastrophic" misrepresentation; and (3) cognitive restructuring procedures in order to alter the patients' appraisal attributions, expectations and avoidance behaviors.

Following the SIT model, the final application and follow-through phase provides the anxious patients with "inoculation" trials by means of imaginal and behavioral rehearsal, both in the clinic and *in vivo*. The behavioral coping trials include opportunities to cope with self-induced hyperventilation and the symptoms of panic attacks, coping imagery to anxiety producing scenes, and finally, graduated exposure to panic-inducing situations. Relapse prevention and self-attribution treatment components are included in this last phase of treatment. Michelson and Marchione (1991) have documented the relative efficacy of this three-phase cognitive-behavioral intervention.

Another anxiety disorder that has been treated by means of SIT is Posttraumatic Stress Disorder (PTSD). For instance, Veronen and Kilpatrick (1982) used SIT to successfully treat rape victims. The SIT consisted of a psychoeducational component concerning the nature and impact of rape and the acquisition and practice of coping skills aimed at management of assault-related anxiety and post-assault problems. The coping skills that were taught included cue-controlled relaxation, thought –stopping, cognitiverestructuring, guided self-dialogue, covert modeling and role playing. Homework assignments consisted of patients practicing the various coping skills *in vivo*. Foa and her colleagues have also found that SIT can reduce PTSD symptoms resulting from sexual assaults. These reductions were maintained at follow-up assessments conducted up to one year post-treatment. (Foa, Rothbaum, Riggs, & Murdock, 1991; Foa, Dancu, Hembree, Jaycox, Meadows & Street, 1999). In two well-controlled studies, SIT

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demonstrated more improvement in PTSD symptoms than supportive counselling and wait list conditions (Foa et al., 1991, 1999). In a study comparing SIT, prolonged exposure (PE) and PE/SIT, SIT demonstrated significant reduction in PTSD and related symptoms. There was a trend, however, for clients who received PE to obtain higher levels of overall functioning, as evident in a composite reduction of PTSD, anxiety and depressive symptoms (Foa et al., 1999).

In evaluating the relative efficacy of prolonged exposure (PE) and stress inoculation training (SIT) in these studies, it is important to keep in mind that in the original SIT treatment protocol clients were confronted with anxiety-engendering situations, either imaginally or by means of role-playing and graded *in vivo* exposure. In the Foa et al. comparative studies, this exposure/rehearsal component that fosters inoculation was eliminated because of the possible overlap with the exposure comparison condition. Thus, the SIT was delimited to only the initial two phases of psychoeducational and coping skills training. The critical exposure and accompanying self-attribution and relapse prevention components that constitute the final phase were omitted from the SIT comparison group.

The results of the Foa et al. (1991, 1999) studies underscore the additional therapeutic benefits that accrue from including the third experiential practice component of SIT. Educating clients and teaching coping skills are necessary, but insufficient components to lead to sustained improvement. Similar conclusions have been drawn by other clinical researchers who have used variations of cognitive therapy to treat PTSD clients (Marks and his colleagues, 1998; Resick & Schnicke, 1992; Tarrier et al., 1999). The results of these studies have also highlighted that various forms of cognitive-behavioral therapies such as SIT, prolonged exposure and cognitive restructuring have broad effects in reducing associated negative emotional states such as anger, depression and anxiety, as well as PTSD symptomatology. For example, Cahill, Rauch. Hembree and Foa (2003) report that SIT, but not PE, produced a greater decrease in anger in female assault victims than did the combination treatment of PE/SIT. Thus, those intervention that included SIT seem particularly well-suited for treating clients with issues of anger control.

Cahill et al. (2003) caution that several clinical studies, both theirs and others have also demonstrated that combining treatments (e.g.,. SIT with PE and cognitive restructuring did <u>not</u> result in better outcomes, and sometimes resulted in slightly worse outcomes than those obtained by individual treatments (Foa et al. 1999; Marks et al., 1998; Paunovic & Ost, 2001). Such attempts to combine various interventions within a time-limited treatment protocol may dilute the effectiveness of the respective interventions.

Anger is an often overlooked emotional disorder in the psychiatric community, although it overlaps with some 19 different psychiatric conditions. Anger is often experienced among various survivors of sexual assault, motor vehicle accidents, torture, combat and refugees. A number of clinical researchers including Jerry Deffenbacher, Eva Feindler, Arthur Hains and Ray Novaco and their colleagues have applied SIT to adolescents and adults who have problems with anger-control and aggressive behaviors (See Deffenbacher & McKay, 2000; Feindler & Ecton, 1986; Hains, 1992; Novaco, 1975). Novaco has also applied SIT to several occupational groups for whom anger control is an important part of their job (namely, law enforcement officers, probation officers, Marine drill instructors – Novaco, 1977a, 1977b; Novaco et al., 1983).

The potential usefulness of SIT and related cognitive-behavioral interventions with adolescents and adults who have anger-control problems and who manifest aggressive behaviors was highlighted by DiGuiseppe and Tafrate (2001). They conducted a meta-analytic review and concluded that the cognitive-behavioral treatments:

"seem to work equally well for all age groups and all types of populations and are equally effective for men and women. The average effect sizes across all outcome measures ranged from .67 to .99 with a mean of .70."

(p. 263)

The results of this meta-analyses revealed that the cognitive-behavioral SIT was "moderately successful". Patients in the SIT were better off than 76% of the control untreated patients and that 83% of the treated patients improved in comparison to their pre-test scores. This level of improvement was maintained at a follow-up period that ranged from 2 to 64 weeks. These findings are similar to conclusions drawn by Beck and Fernandez (1998) who conducted a similar meta-analyses of 50 SIT and cognitivebehavioral interventions that involved 1640 subjects across the full age range. In both meta-analytic reviews, they found that those treatment programs that used standardized manuals and treatment fidelity checks were found to be most effective.

An example of SIT with individuals with anger-control problems was offered by Chemtob, Novaco, Hamada and Gross (1997) who targeted the treatment of anger among a group of veterans who experienced both PTSD and elevated levels of anger. They added SIT to routine VA clinical care and found that adding SIT, relative to a control group who only continued to receive routine care, was effective in significantly reducing state-anger, increasing anger control and coping skills, decreasing general anxiety and

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decreasing PTSD re-experiencing symptoms. The SIT treatment of anger not only decreased the targeted level of anger, but it also decreased PTSD symptoms highlighting the robustness of SIT.

See Meichenbaum (2001) for a detailed description of how to apply SIT on both a treatment and preventative basis with individuals who have problems controlling their anger and their accompanying aggressive behaviors.

# <u>Application of SIT in Individuals with Evaluative Anxiety and Those Requiring</u> <u>Transitional Adjustment</u>

From its origin, SIT has been employed with individuals who experience debilitating anxiety in evaluative situations. This may take the form of treating individuals with debilitating anxiety in such areas as test, speech, math, computer, dating, writing and performance in an athletic competition (See Hembree, 1988; Meichenbaum 1993 for reviews of these studies). In most of these treatment studies, SIT was combined with population-specific skills training such as public-speaking training, writing and study skills. In each domain, the SIT has been adapted to and "packaged" in ways that would make SIT most appealing. For instance, Smith (1980) has characterized the stress management features of SIT as a form of "mental toughness training" for athletes and their coaches. SIT was designed to help athletes "control their emotional responses that might interfere with performance and its is also designed to help athletes focus their attention on the task at hand" (p. 157). The rationale of "mental toughness training" is more likely to be acceptable that the rationale of "reducing stress", as if stress is something to be avoided. Many athletes and coaches believe that athletes need to experience stress in order to achieve peak performance. Under the aegis of "mental

toughness training", Smith has developed a cognitive behavior group training program that is offered in six twice-weekly, 1-hour sessions. The initial educational/conceptualization phase orients the participants to the nature of stress and emotions, the role mental processes play, and various ways to develop an "integrated coping response". The skills acquisition phase focuses upon cue-controlled relaxation, imagining stressful situations and cognitive rehearsal of "anti-stress" coping selfstatements. The goal of training is not to eliminate emotional arousal, but rather to give athletes greater control over their emotional responses. The athletes are given an opportunity to rehearse their coping skills under condition of trainer-induced high arousal and strong affect, which are stimulated by the trainer's offering highly charged imagery scenes. In this inoculation fashion, the athletes are taught to focus their attention on intense feelings and then to practice reframing, accepting and/or turning them off again in order to reduce and prevent high arousal levels from getting out of hand. The trainer also attends to the excessively high performance standards and distorted fear of the consequences of possible failure that distressed athletes, their coaches and their parents may hold. In addition, the trainer, in collaboration with a coach and an athlete, can set up *in vivo* practice trials and can implement a training program to improve relevant sport skills. In short, SIT with athletes is packaged as an educational program in self-control, and not as a form of psychotherapy.

Another anxiety-producing situation where SIT has been employed successfully is that accompanying the transitional adjustment of addressing the effects of unemployment. A randomized field experiment conducted by Caplan, Vinokur, Price and van Ryan (1989) provides encouraging data. As part of a comprehensive intensive intervention, eight 3-

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hour sessions were conducted with the unemployed over a 2-week period. Following the educational phase about the impact of the stress of being laid-off and the acquisition and practice of job-seeking and problem-solving skills, the participants were given inoculation trials about how to cope with possible rejection and setbacks. This comprehensive cognitive-behavioral intervention contributed to higher rates of re-employment, higher motivation and greater job satisfaction in the SIT treatment group, relative to a matched attention control group.

Meichenbaum (1993) reviewed the literature on the potential usefulness of SIT in helping individuals adjust to entry into the military, senior students re-entering university, and individuals taking up overseas assignments.

In <u>conclusion</u>, the last 30 years have witnessed a broad application of SIT to a variety of stressed populations, both in a treatment and preventative manner. In each instance, the clinical application of SIT has been individually tailored to the specific target population and circumstances. It is the flexibility of the SIT format that has contributed to its robust effectiveness. It should also be apparent that SIT is a complex, multifaceted cognitive behavioral intervention that incorporates key elements of nurturing a therapeutic working alliance with clients, psychoeducational features that incorporate inductive Socratic discovery-oriented inquiry, collaborative goal-setting that nurtures hope, direct-action problem-solving and acceptance-based coping skills training which incorporates training generalization guidelines, relapse prevention and self-attributional training procedures. In those instances where clients have been victimized the SIT can be readily supplemented with symptom-specific interventions (e.g., cognitive-behavioral coping techniques to address physiological arousal, dissociation, emotional

dysregulation, physical pain) and "memory work" such imaginal and *in vivo* exposurebased techniques. From a SIT perspective, the treatment goal is <u>not</u> to merely have clients relive and retell their abuse histories, but rather to have them consider the nature of the "stories" they tell both themselves and to others as a result of such trauma exposure. SIT is designed to help clients consider the conclusions that they draw about themselves, the world and the future as a result of such trauma experiences. SIT is designed to help clients construct a more adaptive narrative, moving from viewing themselves as "victims" to "survivors", to becoming "thrivers". The SIT concludes with a consideration of how to help clients find meaning in or to transform their "emotional pain" into healing processes and activities and to learn how to reclaim their lives. Finally, SIT focuses on ways to ensure that such victimized individuals are <u>not</u> revictimized.

In short, SIT is <u>more</u> than a mere collection and application of a variety of coping techniques. The coping skills features of SIT are critical, but without the other contextual features of SIT, especially the "inoculation" trials and application opportunities, the skills training components are unlikely to prove effective, nor sufficient. SIT is not a Chapter heading for a collection of cognitive-behavioral coping techniques, but rather a client sensitive, highly collaborative intervention that is as much concerned about working with clients, as it is in working with significant others and agencies who may inadvertently, unwittingly and unknowingly engender and help maintain even more stress. As noted, the SIT model embraces both the transactional model of stress and coping and the mandate for clinicians and trainers to be as preoccupied in assessing both the clients, as well as their environments. Such a SIT treatment plan will go a long way in helping

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individuals and communities cope more effectively in a post September 11 stressful environment that we live in.

# REFERENCES

- Aldwin, C. M., & Levenson, M. R. (2004). Posttraumatic growth: A developmental perspective. <u>Psychological Inquiry</u>, <u>15</u>, 19-22.
- Antoni, M. H. (2003). <u>Stress management intervention for women with breast cancer</u>.Washington, DC: American Psychological Association.
- Antoni, M. H., Lehman, J. M., Kilburn, K. M., Boyers, A. E., Yont, S. E., & Culver, J. L. (2001). Cognitive-behavioral stress management intervention decreases the prevalence of depression and enhances the sense of benefit among women under treatment for early-stage breast cancer. <u>Health Psychology</u>, 20, 20-32.
- Ayalon, O. (1983). Coping with terrorism: The Israeli case. In D. Meichenbaum & M. Jaremko (Eds.), <u>Stress prevention and management: A cognitive behavioral approach</u>. New York: Plenum Press.
- Barlow, D. (1988). <u>Anxiety and its disorders: The nature of and treatment of anxiety and panic</u>. New York: Guilford Press.
- Beck, R., & Fernandez, E. (1998). Cognitive-behavioral self-regulation of the frequency, duration and intensity of anger. <u>Journal of Psychopathology and Behavioral</u> <u>Assessment, 20</u>, 217-229.
- Brewin, C. R., & Holmes, E. A. (2003). Psychological theories of posttraumatic stress disorder. <u>Clinical Psychological Review</u>, <u>23</u>, 339-376.
- Brody, H. (2000). The other side of Eden. New York: North Point Press.
- Cahill, S. P., Rauch, S. A., Hembree, E. A., & Foa, E. B. (2003). Effect of cognitivebehavioral treatment for PTSD on anger. <u>Journal of Cognitive Psychotherapy</u>, <u>17</u>, 113-131.

- Calabrese, E. J., & Baldwin, L. A. (2002). Hormesis: A dose-response revolution. Annual Review of Pharmacology and Toxicology, <u>43</u>, 175-197.
- Caplan, R. D., Vinokur, A. D., Price, R. H., & Van Ryan, M. (1989). Job seeking reemployment, and mental health: A randomized field trial in coping with job loss. Journal of Applied Psychology, 74, 10-20.
- Chemtob, C. M., Novaco, R. W., Hamada, R. S., & Gross, D. M. (1997). Cognitivebehavioral treatment for severe anger in posttraumatic disorder. <u>Journal of</u> <u>Consulting and Clinical Psychology</u>, <u>65</u>, 184-189.
- Clark, D. M., & Salkovskis, P. M. (1989). <u>Panic disorder treatment manual</u>. Oxford: Pergamon Press.
- Cruess, D. G., Antoni, M. H., McGregor, B. AS., Kilbourn, K. M., Boyers, A. E., & Aferi, S. M. (2000). Cognitive behavioral stress management reduces serum cortisol by enhancing benefit finding among women being treated for early-stage breast cancer. <u>Psychosomatic Medicine</u>, 62, 304-308.
- Deblinger, E., & Heflin, A. H. (1996). <u>Treating sexually abused children and their</u> <u>nonoffending parents: A cognitive-behavioral approach</u>. Thousand Oaks, CA: Sage.
- Deffenbacher, J. L., & McKay, M. (2000). <u>Overcoming situations and general anger</u>. Oakland, CA: New Harbinger.
- DiGuiseppe, R., & Tafrate, R. C. (2001). <u>Anger treatment for adults: A meta-analytic</u> <u>review</u>. Unpublished manuscript. St. John's University, Jamaica, New York.
- Ehlers, A., & Clark, D. M. (2000). A cognitive model of posttraumatic stress disorder. Behaviour Research and Therapy, <u>38</u>, 319-345.

Elliott, G. R., & Eisdorfer, C. (1982). Stress and human health. New York: Springer.

- Epstein, S. (1990). The self-concept, the traumatic neurosis and the structure of personality. In D. J. Ozer, J. M. Healy & A. J. Stewart (Eds.), <u>Perspectives in</u> <u>personality: Self-and emotion</u>. Greenwich, CT: JAI Press.
- Feindler, E. L., & Ecton, R. B. (1986). <u>Adolescent anger control: Cognitive behaviroal</u> <u>techniques</u>. Elmsford, NY: Pergamon Press.
- Foa, E. B., Dancu, C., Hembree, E. A., Jaycox, L. H., Meadows, E. A., & Street, G. D. (1999). A comparison of exposure therapy, stress inoculation training and their combination for reducing posttraumatic stress disorder in female assault victims. Journal of Consulting and Clinical Psychology, 67, 194-200
- Foa, E. B., Keane, T. M., & Friedman, M. J. (2004). <u>Effective treatment of PTSD:</u> <u>Practical guidelines</u>. New York: Guilford.
- Foa, E. B., & Rothbaum, B. O. (1998). <u>Treating the trauma of rape: Cognitive-behavioral</u> <u>therapy for PTSD</u>. New York: Guilford.
- Foa, E. B., Rothbaum, B. O., Riggs, D. S., & Murdock., T. B. (1991). Treatment of posttraumatic stress disorder in rape victims: A comparison between cognitivebehavioral procedures and counseling. Journal of Consulting and Clinical <u>Psychology</u>, 59, 715-723.
- Folkman, S., Chesney, M., McKusik, L., Ironson, G., Johnson, D. G., & Coates, T. J.
   (1991). Translating coping theory into an intervention. In J. Eckenrode (Ed.),
   <u>The social context of coping</u>. New York: Plenum Press.

- Hains, A. A. (1992). A stress inoculation training program for adolescents in a high school setting: A multiple baseline approach. <u>Journal of Adolescence</u>, <u>15</u>, 163-175.
- Harvey, J. H. (2000). Embracing the memory. Needham Heights, MA: Allyn & Bacon.
- Hembree, R. (1988). Correlates, causes, effects of test anxiety. <u>Review of Educational</u> <u>Research, 58</u>, 47-77.
- Holcomb, W. R. (1986). Stress inoculation therapy with anxiety and stress disorders of acute psychiatric patients. <u>Journal of Clinical Psychology</u>, <u>42</u>, 864-872.
- Howard, G. S. (1991). Cultural tales: A narrative approach to thinking, cross-cultural psychology and psychotherapy. <u>American Psychologist</u>, <u>46</u>, 187-197.
- Janoff-Bulman, R. (1990). Understanding people in terms of their assumptive worlds. In D. J. Ozer, J. M. Healy & A. J. Stewart (Eds.), <u>Perspectives in personality: Self-and emotion</u>. Greenwich: CT, JAI Press
- Jay, S. M., & Elliott, C. H. (1990). A stress inoculation program for parents whose children are undergoing painful medical procedures. <u>Journal of Consulting and</u> <u>Clinical Psychology</u>, <u>58</u>, 799-804.
- Keane, T, M., Street, A. E., & Orcutt, H. K. (2000). Posttraumatic stress disorder. In M. Hersen & M. Biaggio (Eds.), <u>Effective brief therapies: A clinician's guide</u>. (pp. 140-155). New York: Academic Press,
- Kendall, P. C. (1983). Stressful medical procedures: Stress management and prevention.
   In D. Meichenbaum & M. Jaremko (Eds.), <u>Stress prevention and management: A</u> <u>cognitive behavioral approach</u>. New York: Plenum Press.

- Langer, T., Janis, I., & Wolfer, J. (1975). Reduction of psychological stress in surgical patients. Journal of Experimental Social Psychology, <u>11</u>, 155-165.
- Lazarus, R. S., & Folkman, S. (1984). <u>Stress appraisal and coping</u>. New York: Springer-Verlag.
- Long, B. C. (1980). Stress management for the athlete: A cognitive-behavioral model.
   In C. H. Nadeau, W. R. Halliwell, K. M. Newell, & G. C. Roberts (Eds.),
   <u>Psychology of motor behaviour and sport</u>. Champaign, IL: Human Kinetics.
- Maag, J., & Kotlash, J. (1994). Review of stress inoculation training with children and adolescents: Issues and recommendations. <u>Behavior Modification</u>, <u>18</u>, 443-469.
- Mace, R. D., & Carroll, D. (1986). Stress inoculation training to control anxiety on sports: Three case studies in squash. <u>British Journal of Sports Medicine</u>, 20, 115-117.
- Mace, R. D., Eastmen, C., & Carroll, D. (1986). Stress inoculation training: A case study in gymnastics. <u>British Journal of Sports Medicine</u>, 20, 139-141.
- Mace, R. D., Eastman, C., & Carroll, D. (1987). The effects of stress inoculation training in gymnastics on the pommeled horse: A case study. <u>Behavioral Psychotherapy</u>, <u>15</u>, 272-229.
- Marks, I., Lovell, K., Noshirvani, H., Livanou, M., & Thrasher, S. (1998). Treatment of post-traumatic stress disorder by exposure and/or cognitive restructuring: A controlled study. <u>Archives of General Psychiatry</u>, <u>55</u>, 317-325.
- Marlatt, G. A., & Gordon, J. R. (Eds.). (1988). <u>Relapse prevention: Maintenance</u> <u>strategies in the treatment of addictive behaviors</u>. New York: Guilford.

- McAdams, D. P., Reynolds, J., Lewis, M., Patten, A. V., & Bowman, P. J. (2001). When bad things turn good and good things turn bad: Sequences of redemption and contamination in life narratives and their relation to psychological adaptation in midlife adults and in students. <u>Personality and Social Psychology Bulletin</u>, 27, 474-285.
- McCann, I. L., & Pearlman, L. A. (1990). <u>Psychological trauma and the adult survivor</u>. New York: Brunner/Mazel.
- McGuire, W. (1964). Inducing resistance to persuasion: Some contemporary approaches. In L. Berkowitz (Ed.), <u>Advances in social psychology</u> (Vol. 1). New York: Academic Press.
- Meichenbaum, D. (1975). Self-instructional methods. In F. H. Kanfer & A. P. Goldstein (Eds.)., <u>Helping people change</u> (pp. 357-391). New York: Pergamon Press.
- Meichenbaum, D. (1976). A self-instructional approach to stress management: A proposal for stress inoculation training. In C. Spielberger & I. Sarason (Eds.), <u>Stress and anxiety in modern life</u>. New York: Winston.
- Meichenbaum, D. (1977). <u>Cognitive behavior modification: An integrative approach</u>. New York: Plenum Press.
- Meichenbaum, D. (1985). Stress inoculation training. Elmsford, NY: Pergamon Press.
- Meichenbaum, D. (1993). Stress inoculation training: A 20-Year Update. In R. L. Woolfolk and P. M. Lehrer (Eds.), <u>Principles and practices of stress management</u>. (pp. 373-406).
- Meichenbaum, D. (1996). <u>Treating adults with post-traumatic stress disorder</u>. Waterloo, ON: Institute Press.

Meichenbaum, D. (2005). Trauma and suicide: A constructive narrative perspective. InT. E. Ellis (Ed.), <u>Cognition and suicide: Theory, research and practice</u>.Washington, DC: American Psychological Association.

- Meichenbaum, D., & Deffenbacher, J. L. (1988). Stress inoculation training. <u>Counseling</u> <u>Psychologist, 16, 69-90</u>.
- Meichenbaum, D., & Fitzpatrick, D. (1993). A narrative constructivist perspective of stress and coping: Stress inoculations applications. In L. Goldberger & S.
   Breznitz (Eds.), <u>Handbook of stress</u> (2<sup>nd</sup> Ed.). New York: Free Press.
- Meichenbaum, D. & Fong, G. (1993). How individuals control their own minds: A constructive narrative perspective. In D. M. Wegner & K. Pennebacker (Eds.), <u>Handbook of Mental Control</u>. New York: Prentice Hall.
- Meichenbaum D., & Jaremko, M. E. (Eds.). (1993). <u>Stress reduction and prevention</u>. New York: Plenum Press.
- Meichenbaum, D., & Novaco, R. (1978). Stress inoculation: A preventative approach. InC. Spielberger & I. Sarason (Eds.), <u>Stress and anxiety</u> (Vol. 5). Washington, DC: Hemisphere.
- Meichenbaum, D., Turk, D. C. (1976). The cognitive behavioral management of anxiety, anger and pain. In P. Davidson (Ed.), <u>The behavioral management of anxiety</u>, <u>depression and pain</u>. New York: Brunner/Mazel.
- Meichenbaum, D., & Turk, D. C. (1987). <u>Facilitating treatment adherence: A</u> practitioner's guidebook. New York: Plenum Press.

- Michelson, L. K., & Marchione, K. (1991). Behavioral, cognitive and pharmacological treatment of panic disorder with agoraphobia: Critique and synthesis. <u>Journal of</u> <u>Consulting and Clinical Psychology</u>, <u>59</u>, 100-114.
- Neimeyer, R. A. (2001). <u>Meaning reconstruction and the experience of loss</u>.Washington, DC: American Psychological Association.
- Norcross, J. (2004). Empirically-supported therapy relationships. <u>The Clinical</u> <u>Psychologist, 57, 19-24</u>.
- Novaco, R. (1975). <u>Anger-control: The development and evaluation of an experimental</u> <u>treatment</u>. Lexington, MA: D.C. Health.
- Novaco, R. (1977a). Stress inoculation: A cognitive therapy for anger and its application to a case of depression. <u>Journal of Consulting and Clinical Psychology</u>, <u>45</u>, 600-608.
- Novaco, R. (1977b). A stress inoculation approach to anger management in the training of law enforcement officers. <u>American Journal of Community Psychology</u>, <u>5</u>, 327-346.
- Novaco, R. (1980). Training of probation officers for anger problems. <u>Journal of</u> <u>Consulting Psychology</u>, <u>27</u>, 385-390.

Novaco, R., Cook, T., & Sarason, I. (1983). Military recruit training: An arena for stresscoping skills. In D. Meichenbaum & M. Jaremko (Eds.), <u>Stress prevention and</u> <u>management: A cognitive-beahavioal approach</u>. New York: Plenum Press.

Paunovic, N., Ost, L. G. (2001). Cognitive-behavioral therapy vs. exposure therapy in treatment of PTSD in refugees. <u>Behaviour Research and Therapy</u>, <u>39</u>, 1183-1197.

- Resick, P. A., & Schnicke, M. K. (1992). Cognitive processing therapy for sexual assault victims. Journal of Consulting and Clinical Psychology, <u>60</u>, 748-756.
- Saunders, T. Driskell, J. E., Johnston, J. H., & Salas, E. (1996). The effect of stress inoculation training on anxiety and performance. <u>Journal of Occupational</u> <u>Psychology</u>, <u>1</u>, 170-186.
- Segerstrom, S. C., & Miller, G. E. (2004). Psychological stress and the human immune system: A meta-analytic study of 30 years of inquiry. <u>Psychological Bulletin</u>, <u>130</u>, 601-630.
- Siegal, L. J., & Peterson, L. (1980). Stress reduction in young dental patients through coping skills and sensory information. <u>Journal of Consulting and Clinical</u> <u>Psychology</u>, <u>48</u>, 785-787.
- Smith, R. E. (1980). A cognitive-affective approach to stress management training for athletes. In C. H. Nadeau, W. R. Halliwell, K. M. Newell, & G. C. Roberts (Eds.), <u>Psychology of motor behaviour and sport</u>. Champaign, IL: Human Kinetics.
- Smith, R. E., & Rohsenow, D. J. (1987). <u>Cognitive-affective stress management training:</u> <u>A treatment and resource manual</u>. San Rafael, CA: Select Press.
- Smucker, M. P., Grunet, B. K., & Weis, J. M. (2003). Posttraumatic stress disorder: A new algorithm treatment model. In R. L. Leahy (Ed.), <u>Overcoming roadblocks in</u> <u>cognitive therapy practice</u>. (pp. 175-194). New York: Guilford Publications.

Suinn, R. M. (1990). Anxiety management training. New York: Plenum Press.

- Tarrier, N., Pilgrim, H., Sommerfiled, C., Faragher, B., Reynolds, M., Graham, E., Barrowclough, C. (1999). A randomized trial of cognitive therapy and imagined exposure in the treatment of chronic posttraumatic stress disorder. <u>Journal of</u> <u>Consulting and Clinical Psychology</u>, <u>29</u>, 12-18.
- Turk, D. C., Meichenbaum, D., & Genest M. (1983). <u>Pain and behavioral medicine: A</u> <u>cognitive-behavioral perspective</u>. New York: Guilford.
- Turk, D. C., Meichenbaum, D., & Genest, M. (1983). <u>Pain and beahavioral medicine: A</u> <u>cognitive behavioral perspective</u>. New York: Guilford Press.
- Veronen, L. J., & Kilpatrick, D. G. (1982, November). <u>Stress inoculation training for</u> <u>victim of rape: Efficacy and differential findings</u>. Symposium conducted at the 16<sup>th</sup> Annual Convention of the Association for the Advancement of Behavior Therapy, Los Angeles, LA.
- Veronen, L. J., & Kilpatrick, D. G. (1983). Stress management for rape victims. In D. Meichenbaum & M. Jaremko (Eds.), <u>Stress prevention and management: A</u> <u>cognitive behavioral approach</u>. New York: Plenum Press.
- Wernick, R. L. (1983). Stress inoculation in the management of clinical pain: Applications to burn patients. In D. Meichenbaum & M. Jaremko (Eds.). <u>Stress</u> reduction and prevention: A cognitive behavioral approach. (pp. 191-218). New York: Plenum Press.
- Wernick, R. L., Jaremko, M., & Taylor, P. (1981). Pain management in severely burned adults: A test of stress inoculation. <u>Journal of Behavioral Medicine</u>, <u>4</u>, 103-109.

Wertkin, R. A. (1985). Stress inoculation training: Principles and application. <u>Social</u> <u>Casework, 12</u>, 611-616.

Witkiewitz, K., & Marlatt, G. A. (2004). Relapse prevention for alcohol and drug problems: That was Zen, this is Tao. <u>American Psychologist</u>, <u>59</u>, 224-235.

Wortman, C. B., Silver, R. C. (1987). Coping with irrevocable loss. In G. R. Vandenbox
& B. K. Bryant (Eds.), <u>Cataclysms, crises and catastrophes: Psychology in action</u>.
Washington, DC: American Psychological Association.

## TABLE 1

# SUMMARY OF WHAT YOU NEED TO DO TO HAVE PERSISTENT PTSD AND PROLONGED STRESS RESPONSES: A CONSTRUCTIVE NARRATIVE PERSPECTIVE (CNP)

## A. ENGAGE IN <u>SELF-FOCUSED COGNITIONS</u> THAT HAVE A "VICTIM" THEME

- 1. See self as being continually <u>vulnerable</u>
- 2. See self as being <u>mentally defeated</u>
- 3. Dwell on negative <u>implications</u>
- 4. Be preoccupied with <u>others'</u> views
- 5. Imagine and ruminate about <u>what might have happened</u> ("Near Miss Experience")

## B. HOLD <u>BELIEFS</u>

- 1. Changes are <u>permanent</u>
- 2. World is <u>un</u>safe, <u>un</u>predictable, <u>un</u>trustworthy
- 3. Hold a negative view of the <u>future</u>
- 4. Life has <u>lost its meaning</u>

#### C. <u>BLAME</u>

- 1. <u>Others</u> with accompanying anger
- 2. <u>Self</u> with accompanying guilt, shame, humiliation

#### D. ENGAGE IN COMPARISONS

- 1. Self <u>versus</u> others
- 2. Before <u>versus</u> now
- 3. Now <u>versus</u> what might have been

#### E. <u>THINGS TO DO</u>

1. Be continually <u>hypervigilant</u>

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- 2. Be <u>avoidant</u> <u>cognitive level</u> (suppress unwanted thoughts, dissociate, engage in "undoing" behaviors)
- 3. Be <u>avoidant</u> <u>behavioral level</u> (avoid reminders, use substances, withdraw, abandon normal routines, engage in avoidant safety behaviors)
- 4. <u>Ruminate</u> and engage in <u>contrafactual</u> thinking ("Only if")
- 5. Engage in <u>delaying</u> change behaviors
- 6. Fail to <u>resolve</u> and <u>share</u> trauma story ("Keep secrets")
- 7. Put self at risk for <u>revictimization</u>

## F. WHAT <u>NOT TO DO</u>

- 1. <u>Not believe</u> that anything <u>positive</u> could result from trauma experience
- 2. <u>Fail</u> to retrieve, nor accept data of <u>positive self-identity</u>
- 3. Fail to seek social supports
- 4. Experience <u>negative</u>, <u>unsupportive environments</u> *(indifference, criticism,*

## *"moving on" statements)*

5. <u>Fail</u> to use <u>faith</u> and <u>religion</u> as a means of coping

#### TABLE 2

#### ONGOING EDUCATIONAL COMPONENTS OF SIT

SIT helps clients:

- Appreciate that the stress they experience is <u>not</u> abnormal and <u>not</u> a sign that they are "going crazy", nor "losing their minds". Rather, their distressing reactions may be a "normal" reaction to a difficult and challenging stressful situation.
- 2. Appreciate that many of their reactions may be the "wisdom of the body", or "Nature's way" of coping with overwhelming stressors. For example, intrusive ideation may be a way to try and make sense of what has happened; denial may be a way to "dose oneself" in order to deal with so much stress at a given time. (In fact, each of the symptoms of PTSD could be reframed as a coping efforts – See Meichenbaum, 1996).
- 3. View their current coping efforts as a reflection of a "stuckiness" problem, namely using (or overusing) a coping pattern such as dissociation that at one time was adaptive (e.g., when being repeatedly raped in an incestuous situation) or being hypervigilant (i.e., continually being on "sentry duty" even when it is no longer required). The problem is that clients are "stuck" (not "crazy", nor "inadequate", "weak") using coping efforts that at one time were adaptive, but are now being overemployed.
- Recognizing how they may inadvertently, unwittingly, and perhaps even unknowingly employ intra-personal coping efforts (avoidance, suppression, rumination and brooding, contrafactual thinking, and safety behaviors) that make

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the stressful situation worse. Educate clients about the transactional nature of stress.

- 5. Appreciate that their stress reactions are made up of different components (biopsychological perspective, physiological arousal, plus cognitive appraisals) and that these reactions go through different phases (namely, the phase of preparing for a stressor, the phase of confronting the stressor, the phase of being truly tested or overwhelmed, and the phase of reflecting on how they handled or did not handle the stressor). In this way, their stress reactions are differentiated into several phases that are made up of different components. Patients are educated about how each phase can trigger appropriate coping efforts.
- 6. Notice the "cycle" by which internal and external triggering events (12 o'clock on an imaginal clock) elicit primary and secondary emotions (3 o'clock) and accompanying thoughts (automatic thoughts, thinking processes and schemas or beliefs) (6 o'clock) which , in turn, lead to specific behaviors and resultant consequences (9 o'clock). Clients can be asked to self-monitor, if indeed, they engage in such "vicious" (stress-engendering) cycles. Moreover, clients can beasked if they do so, "What is the impact, what is the toll, what is the price of engaging in such a cyclical pattern?" Moreover, what can be done to break the cycle?" The various coping efforts follow naturally from such probes.
- 7. Appreciate the distinction between the "changeable" and "unchangeable" aspects of stressful situations and to fit either problem-focused or emotional-focused coping efforts to the perceived demands of the stress-engendering situation.

- Break down or disaggregate global stressors into specific short-term, intermediate and long-term coping goals. Such goal-directed thinking nurtures a sense of hopefulness.
- 9. Debunk any client or significant others myths concerning their presenting problems (e.g., myths concerning rape, sexual abuse) and challenge so-called Stage-models of reactions to stress. Also address any myths concerning stress and coping such as: (1) People need to go through uniform emotional stages of reactions in response to stress; (2) There is a "right" way to cope' (3) Distressed people cannot experience positive emotions in the aftermath of traumatic stress; and (4) People should <u>not</u> expect to <u>experience</u> stressful reactions well after stressful life events occur.

#### TABLE 3

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#### **Phase I: Conceptualization**

- In a collaborative fashion, identify the determinants of the presenting problem of the individual's stress concerns by means of (1) interview with the client and significant others; (2) the client's use of imagery-based reconstruction and assessment of a prototypic stressful incident; (3) psychological and environmental assessments; and (4) behavioral observations. (As Folkman et al., 1991, suggest, have the client address "who, what, where, and when" questions: "Who is involved?", "What kind of situations cause stress?", "When is this kind of situation likely to occur?", "When did it occur last?" Also, see interviews in Meichenbaum 1996, 2001)
- Permit the client to tell his or her "story" (solicit narrative accounts of stress and coping, and collaboratively identify the client's coping strengths and resources).
   Help the client to transform his or her description from global terms into behaviorally specific terms.
- Have the client disaggregate global stressors into specific stressful situations.
   Then help the client break stressful situations and reactions into specific behaviorally prescriptive problems. Have the client consider his or her present coping efforts and evaluate which are maladaptive and which are adaptive.
- Have the client appreciate the differences between changeable and unchangeable aspect of stress situations.

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- Have the client establish short-term, intermediate, and long-term behaviroally specifiable goals.
- Have the client engage in self-monitoring of the commonalities of stressful situations and the role of stress-engendering appraisals, internal dialogue, feelings, and behaviors. Help the client appreciate the transactional nature of his or her stress. (Use the clock metaphor of a "vicious cycle", as learned in Table 2). Train the client to analyze problems (e.g., to conduct both situational and developmental analyses and to seek disconfirmatory data "Check things out").
- Ascertain the degree to which coping difficulties arise from coping skills deficits or are the result of "performance failures" (namely, maladaptive beliefs, feelings of low self-efficacy, negative ideation, secondary gains).
- Collaboratively formulate with the client and significant others a
  reconceptualization of the client's distress. Socratically educate the client and
  significant others about the nature and impact of stress, and the resilience and
  courage individuals manifest in the face of stressful life events. Using the client's
  own "data", offer a reconceptualization that stress is composed of different
  components (physiological, cognitive, affective, and behavioral) and that stress
  reactions go through different "phases", as described in Table 2. The specific
  reconceptualization offered will vary with the target population; the plausibility of
  the reconceptualization is more important than its scientific validity. In the course
  of this process, facilitate the discovery of a sense of meaning, nurture the client's
  hope, and highlight the client's strengths and feelings of resourcefulness.
- Debunk any client myths, as noted in Table 2.

#### Phase 2: Skills Acquisition and Consolidation

- A. Skills training (tailor to the needs of the specific population and to the length of training)
  - Ascertain the client's preferred mode of coping. Explore with the client how these coping efforts can be employed in the present situation. Examine what intrapersonal or interpersonal factors are blocking such coping efforts.
  - Train problem-focused instrumental coping skills that are directed at the modification, avoidance, and minimization of the impact of stressors (e.g., anxiety management, cognitive restructuring, self-instructional training, communication, assertion, problem soling, anger control, applied cue-controlled relaxation training, parenting, study skills, using social supports). Select each skill package according to the needs of the specific client or group of clients. Help the client to break complex stressful problems into more manageable subproblems that can be solved one at a time.
  - Help the client engage in problem-solving by identifying possibilities for change, considering and ranking alternative solutions and practicing coping behaviroal activities in the clinic and *in vivo*.
  - Train emotionally-focused palliative coping skills, especially when the client has to deal with unchangeable and uncontrollable stressors (e.g., perspective taking, selective attention diversion procedures, as in the case of chronic pain patients; adaptive modes of affective expression such as humor, relaxation, reframing the situation, acceptance skills and spiritual rituals).

- Train clients how to use social supports effectively (i.e., how to choose, obtain, and maintain support). As Folkman et al. (1991) observe, help clients appreciate what kind of support is needed (informational, emotional, tangible), from whom to seek such support, and how to maintain support resources.
- Aim to help the clients develop an extensive repertoire of coping responses in order to facilitate flexible responding. Nurture gradual mastery.

## B. Skills rehearsal and consolidation

- Promote the smooth integration and execution of coping responses by means of behavioral and imagery rehearsal.
- Use coping modeling (either live or videotape models). Engage in collaborative discussion, rehearsal, and feedback of coping skills.
- Use self-instructional training to help the client develop internal mediators to self-regulate coping responses.
- Solicit the client's verbal commitment to employ specific efforts.
- Discuss possible barriers and obstacles to using coping behaviors and ways to anticipate and address such barriers.
- Build in the technology of generalization.

## Phase 3: Application and Follow-through

## A. Encouraging application of coping skills in the from of stress inoculation trails

- Prepare the client for application by using coping imagery, together with techniques in which early stress cues act as signals to cope.
- Expose the client in the session to graded stressors via imagery, behavioral exposure to stressful and arousing scenes.

- Use graded exposure and other response induction aids to foster *in vivo* responding.
- Employ relapse prevention procedures: Identify high-risk situations, anticipate possible stressful reactions, and rehearse coping responses.
- Use counterattitudinal procedures to increase the likelihood of treatment adherence (i.e., ask and challenge the client to indicate where, how, and why he or she will use coping efforts).
- Bolster self-efficacy by reviewing both the client's successful and unsuccessful coping efforts. Ensure that the client makes self-attributions ("takes credit") for success or mastery experiences (provide attribution retraining).

## **B.** Maintenance and generalization.

- Gradually phase out treatment and include booster and follow-up sessions.
- Involve significant others in training (e.g., parents, spouse, coaches, hospital staff, police, administrators) as well as peer and self-help groups.
- Have the client coach someone with a similar problem (i.e., put client in a "helper"/consultative role).
- Help the client to restructure environmental stressors and develop appropriate escape routes. Ensure that the client does not view escape or avoidance, if so desired, as a sign of failure, but rather as a sign of taking personal control.
- Help the client to develop coping strategies for recovering from failure and setbacks, so that lapses do not become relapses.
- Work with clients to avoid revictimization.

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September 2, 2004

Dear Paul:

Here are two copies of my Chapter on Stress Inoculation Training. **Please confirm that you have received this.** You can call my voice mail and leave a message (519-885-1211, ext. 2551). Thank you for inviting me to contribute,. I look forward to both your and fellow editor's reactions to the Chapter.

Best wishes,

Don Meichenbaum

P.S. My email address is dmeich@watarts.uwaterloo.ca