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# The Potential of Stress Management Training as a Coping Strategy for Stressors Experienced in Theater of Operation: A Systematic Review

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## 1. Introduction

This chapter provides a literature review on Stress Management Training (SMT) as a potential tool to help military personnel cope with stressors experienced in the theater of operations. It is hoped that SMT techniques can be used to prepare soldiers for potential highly stressful situations in an effort to diminish their negative reactions to stress. The ultimate long-term prospective benefits would be that training military personnel with SMT would increase resilience and lower the incidence of post-traumatic stress disorder (PTSD).

There are several definitions of stress, but essentially it can be considered an affective state that occurs in response to perceived demands and challenges in the environment with which one feels unable to cope [1]. A variety of stress management techniques have been developed over the years in order to help individuals prevent, eliminate or cope with stress. All these techniques have the objective to modify factors associated with stress (behavioral, cognitive, physiological, emotional and environmental).

Early references to SMT date back to the work of Gottlieb, Strite and Koller et al. [2] who applied stress reduction strategies in behavioral medicine. SMT now represents an extremely diverse set of strategies and our literature review confirmed that notion several times. Authors include almost any available techniques, from Yoga [3] to prayer [4], along with exposure to feared situations [5], cognitive restructuring [6], problem solving [7], etc.

In general, SMT can be defined as the application of any set of techniques aiming to improve the way people cope with stress. Coping represents efforts to manage demands, conflicts and pressures that drain, or exceed, a person's resources [1]. Murphy and Sauter [8] offered to better integrate the applications of SMT strategies to contemporary notions of prevention by dividing SMT into primary, secondary and tertiary interventions. Primary interventions focus on changing the sources of the stress response (e.g., by modifying the environment) before stress becomes a problem, while secondary interventions aim at reducing the severity of symptoms associated with stress (much like secondary prevention, before non-clinical

symptoms crystallize into disorders). Finally, tertiary interventions represent the application of SMT to treat mental and physical disorders. According to Murphy and Sauter [8], the most common stress management interventions are secondary programs aimed at the individual level and involve instruction in techniques to manage and cope with the stress associated with current problems.

Since the breath of SMT encompasses such techniques as relaxation, cognitive restructuring, problem solving, social skills training, planning behavioral changes and exposure to stressful situations, other stress management programs relying on these techniques also fall under the broad definition of SMT, such as Stress Inoculation Training [9] and Anxiety Management Training [10]. As opposed to SMT, where there is no coherent set of techniques and official definition, SIT and AMT are far from umbrella categories of various psychological techniques. SIT and AMT represent consistent intervention programs with a number of defining strategies that are carefully selected among those usually found in SMT. We therefore decided to include AMT and SIT in our literature review since they represent subtypes of SMT.

Stress inoculation training is a set of cognitive-behavioral techniques developed as a treatment by Donald Meichenbaum around the same years as SMT was gaining popularity [9]. The aim of SIT is to help individuals cope with the consequences of being exposed to stressful events and on a preventative basis to “inoculate” individuals to current and future stressors. Although it is made to be tailored to the client’s need, the application of the SIT program follows a semi-structured and clearly outlined format [11] that unfolds in three distinct phases: (a) conceptualization, (b) skills acquisition and rehearsal, and (c) application and follow through. The term inoculation is used to simulate the concept of immunization through progressive exposure. The individual uses techniques such as imagery and behavior rehearsal, role play, modeling and progressive exposure to stressful situations. Techniques for relapse prevention and attribution of success to one’s own efforts are also used.

Anxiety management training was developed by Richard Suinn [12] and research on its use was blooming at the same time as SMT and SIT [13]. It is therefore not surprising that, as cognitive-behavior techniques, they share common roots and principles. However, its focus on learning relaxation and generalizing it to daily stressors is much stronger. AMT was first developed for the treatment of what was defined at the time as “free floating anxiety”. It was geared more toward clinical anxiety than was SMT and SIT. Suinn’s basic philosophy was that patients could be taught to: (a) detect emotional, cognitive and physical signs associated with the onset of anxiety, and (b) react to these signs in manners that would make them disappear. One specific aspect of AMT is that patients are not required to find the causes or stimuli that precipitate their anxiety; they are essentially taught to focus on recognizing the presence of anxiety and its symptoms. Once anxiety-related cues are felt, the patient learns to use relaxation skills in order to alleviate the anxiety. Later on in therapy, the patient learns to identify the cognitive and physiological signs of anxiety arousal sooner. Even if AMT has been created to treat patients suffering from an anxiety disorder, it has been used in other contexts, such as enhancing performance and reducing general stress, and therefore deserves to be included in the current literature review.

This chapter sets out to report an extensive search in peer-reviewed scientific journals, analyze the published empirical data, and organize the results in such a way that studies could be examined based on their relevance to confirm with empirical evidences that SMT, or some of its strategies, is an effective approach to cope with acute stressors such as those encountered in theater of operations.

## 2. Method

A search for scientific papers was conducted using the Scopus database (which includes the following databases and more: PsychLit, PsychInfo, Medline, PubMed) with the following search terms (written without quotes): stress management training, stress inoculation training and anxiety management training. To reduce the risk of missing relevant papers the search was not limited to keywords but open to keywords, title and abstract. The search was performed with publication date ranging from 1950 (the oldest paper found in our search dates from 1958) up to 2009. Information available only from websites, dissertations and conferences were not considered. Taking into account the fact that some papers included two or more of the search terms SMT, SIT and AMT, the literature search resulted in 3 611 papers published in peer-review journals.

As intended, a manual examination of each of these results showed that our search strategy was extremely broad. The majority of the 3 611 papers (89.5%) were rejected because they either: (a) were irrelevant to SMT, SIT or AMT (usually because the search terms were not written within quotes), (b) did not include any<sup>1</sup> quantitative or qualitative data (e.g., theoretical paper, description of projects yet to be realized, clinical descriptions, policy position papers), (c) were in languages other than English or French, and (d) were limited to the development of psychometric tests. Meta-analyses and literature reviews based on systematic search of published papers were not rejected. However, their reference lists were crossed-checked to confirm we had not missed any relevant articles. The tedious process of systematic paper selection led to 350 articles, 200 falling under the general umbrella of SMT, 55 on the variation or subtype of SMT called SIT and 95 on the variation or subtype of SMT called AMT.

After reading the 350 papers addressing the broad definition of SMT techniques, they were divided into five categories, presented in increasing order of relevance to the purpose of helping military personnel to cope with acute stressors such as those experienced in theater of operations (see Table 1): (a) improving physical and medical conditions, (b) treatment of anxiety disorders and other mental disorders, (c) control of already existing stress-related issues (i.e., not clinical diagnoses), (d) preventing the consequences of traumatic events, and (e) development of strategies to cope more efficiently with future stressful situation (i.e., primary prevention). In reviewing the articles, special attention was devoted to studies on military personnel and similar populations (e.g., police SWAT teams, firefighters).

The following pages will present the results of this extensive search on SMT. Given the extremely wide variety of SMT techniques, SIT and AMT are considered to fit in the broad inclusive description of SMT. Results for all these techniques will thus be presented together. For the sake of brevity and clarity, in the first four categories only the most relevant studies will be discussed or cited as examples (for an exhaustive list of the studies compiled in this chapter, contact the first author). Category five includes studies that are clearly relevant to the purpose of our work on mental readiness training to cope with acute stress. Due to their relevance to the aim of our endeavor on preventing psychological injuries, studies in category five will be described in more details.

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<sup>1</sup> This criterion was relaxed for papers applying SMT with populations similar to military personnel (see Category 5).

Categories	Total: broad SMT definition	SIT	AMT	Other SMT techniques
1. Improving physical and medical conditions	124	13	20	91
2. Treatment of anxiety and other mental disorders	61	15	39	7
3. Control of already existing stress-related issues	140	21	36	83
4. Preventing the consequences of traumatic events	13	0	0	13
5. Development of strategies to cope more efficiently with future stressful situations related to sports, military personnel and other stressors.	12	6	0	6
Total	350	55	95	200

Table 1. Number of peer-reviewed papers found in the literature search on SMT.

3. Results

3.1 Category 1: Improvement of physical and medical conditions

Findings on the impact of SMT on physical indices and medical conditions provide objective manifestations of the efficacy of training people to use skills to cope with stress. Most SMT programs have been developed to deal with medical illness and were found in publications dealing with behavioral medicine. Among the 91 scientific papers, 39 examined the efficacy of using SMT to impact on cardiovascular and coronary heart diseases, and most report statistically significant results [14]. Other papers also revealed positive results with medical problems such as cancer [15], HIV [16], diabetes [17], asthma [18], arthritis [19] and acute pain [20].

A more structured form of SMT, AMT, has been studied in 20 peer-reviewed papers. Studies using AMT to help cope with the psychological consequences of having a serious medical condition showed more potent and lasting results, notably for coping with having HIV [21] and cancer. Other studies found a statistically significant impact of AMT on physiological parameters such as glucose level in diabetic patients [22] and systolic / diastolic blood pressure [23-25]. In most applications of AMT to medical conditions, the basic treatment program was slightly adapted to include strategies tailored specifically to the medical condition under study (e.g., pain management [26]).

SIT was also demonstrated to be effective in coping with pain, such as third-degree burns [27], performance of athletes after a surgery [28], dental treatment [29], preparing for surgery [30], and experimental pain [31, 32]. The efficacy of SIT on physiological parameters has also been reported in hypertensive patients [33, 34]. Like AMT, SIT has been tested with success to help patients cope with stress and anxiety related to a medical condition, such as open-heart surgery [35], leukemia [36] and multiple sclerosis [37].

3.2 Category 2: Treatment of anxiety and other mental disorders

The purpose of the current literature review is to document how stress management strategies can be used to help military personnel cope with stressful situations in theatre of operation,



not to treat existing anxiety disorders. Nevertheless, one cannot ignore that we found 61 scientific papers on that topic. Among all SMT techniques, AMT has clearly been the tool most often studied in regard to the treatment of anxiety disorders and other mental disorders found in the DSM-IV [38], with 39 papers. Most studies ( $n = 29$ ) were conducted with people suffering from an anxiety disorder: a third of them targeted generalized anxiety disorder [39-41], while others were conducted with patients suffering from all types of anxiety disorders, ranging from posttraumatic stress disorder [6, 42] to specific phobias [43, 44]. For most of these disorders, at least one randomized controlled trial was conducted with reliably diagnosed patients and long-term follow-up. There is strong evidence to claim that AMT can have a favourable impact on anxiety disorders, including PTSD. AMT has also been used with patients suffering from other mental disorders, such as schizophrenia [45, 46] and alcoholism [47], with statistically significant impact on associated anxiety symptoms.

SIT has been used in 15 published studies to treat anxiety disorder or symptoms of anxiety in people suffering from mental disorders such as schizophrenia (e.g., in comparison with drug treatment [48]) or addictions [49]. Ten studies were conducted on the treatment of PTSD [50-52] and five on specific phobia [53, 54]. For example, in a randomized controlled trial Foa, Rothbaum, Riggs and Murdock [42] compared SIT to prolonged exposure, minimal support (active control condition) and waiting list (passive control condition) for rape victims suffering from PTSD. Results were statistically superior to the other two control conditions at post-treatment and gains were maintained at follow-up. There are only a limited number of outcome studies using SIT with clinical populations, but their results clearly support the efficacy of this approach to psychological injuries that are severe enough to warrant the clinical diagnosis of PTSD.

Much less research has been conducted on the use of more vaguely defined sets of SMT strategies. Our literature search found seven studies conducted on learning stress management skills in different populations suffering from schizophrenia [55-57], substance abuse [58, 59], attention deficit disorder [60], and ambulatory psychosomatic patients [61]. Four of these studies are randomized controlled trials with rigorous designs, acceptable sample and long-term follow-up. For example, it can be safely stated that for people with chronic schizophrenia, training in stress management clearly provides skills for coping with acute work and daily-life stressors and reduces the likelihood of subsequent acute exacerbation of symptoms with needs for hospitalization. It is also useful for substance abuse and ADHD as tools to better regulate stress.

### **3.3 Category 3: Control of already existing stress-related issues (i.e. non clinical diagnoses)**

Intervening on general, non pathological, anxiety symptoms is the most frequent application of the broad set of SMT techniques. Researchers have published 136 studies on controlling already existing stress-related problems and non-clinical anxiety. Some of these studies did not focus on efficacy but even if it was not the aim of their study, they collected meaningful pre/post data and thus were not excluded from our literature search.

A total of 33 studies have focused on using the broad range of SMT strategies with student populations, with 11 studies using essentially the AMT protocol for school related or exam stressors [62, 63]. In a classic experiment, Suinn and Richardson [12] successfully treated 24 students suffering from math anxiety. Additional studies were conducted with university students, seven studies used the SIT protocol [64, 65] and 15 studies used various other SMT strategies, mostly relaxation.

The most frequent use of broad SMT strategies is for coping with work-related stress. Applications to the workplace of various SMT strategies, like relaxation, breathing retraining and repeating coping self-statements, SIT and AMT have been used with numerous types of professionals. Among those, six studies were conducted with high-risk jobs such as policemen or maintenance worker [66, 67]. Richardson and Rothstein [68] also published a meta-analysis of 36 carefully designed studies using SMT in the workplace and demonstrated that it is clearly effective. The most interesting aspect of their study is the dismantling and assessment of the effectiveness of specific strategies. They regrouped broadly defined SMT strategies into five types: cognitive-behavioral (such as SIT and AMT), relaxation training, organizational changes interventions, holistic / multimodal approaches, and alternative strategies (such as biofeedback and meditation). Structured cognitive-behavioral intervention, namely SIT and AMT, were the most effective strategies, with an average effect size of 1.17, followed by alternative strategies ( $d = .91$ ). Other strategies were significantly less effective. These results echoed a previous less rigorous review conducted by Murphy [69] on 64 studies collected based on broader selection criteria.

As mentioned previously, six studies were conducted with people whose work involved high-risk situations. The randomized controlled trial by Peters and Carlson [67] demonstrated convincingly that SMT can be effective but the study by Le Scanff and Taugis [66] deserves to be mentioned in more detail given the similarity between their sample and the military context of this chapter. Le Scanff and Taugis [66] developed and applied a SMT program for the French police Special Forces units. Their seven-day pilot program was built to include corrective solutions for important organizational problems and therefore includes many strategies that may not apply to the training of military personnel. Apart from organizational one, the following SMT strategies were used: identifying stress factors and cues, learning coping skills (progressive muscle relaxation, deep breathing, concentration/centering, releasing tension in specific muscle groups, imagery), follow-up on problems experienced while applying the SMT strategies, reinforce the use of efficient coping skills, and develop better communication and assertiveness skills. Sadly, the authors [66] adopted a limited and unsystematic qualitative approach to document the impact of their program. Empirical data were not systematically collected pre or post implementation with their sample of 150 male police officers. Only global interests towards the training sessions were assessed. It revealed that trainees appreciated the program, felt they had learned something and reported that the program broadened their perspective and understanding of stress. One important factor stands out of their analysis and is pertinent to our work: virility. They defined virility as being able to reestablish order and domination, or to inflict pain and suffering on another person, without expressing doubt or feeling. They noted that, for their participants, admitting to feelings of anxiety was considered akin to being afraid and not being a real man, and could interfere with professional efficiency. This observation is interesting for our own work with military personnel. It is in line with subtle factors that must be built in SMT programs delivered to military personnel working in theaters of operations [70, 71].

### **3.4 Category 4: Preventing the consequences of traumatic events**

Several papers on SMT actually address what is frequently referred to as debriefing, which is an attempt to mitigate the psychological impact of recent traumatic events. There are

several different kinds of debriefing<sup>2</sup>. They vary in number of phases, focus of discussion and degree of structure provided in the intervention. Group psychological debriefing is one of the most common early interventions with military units [72]. There has been much debate about the usefulness of debriefing and several studies suggested that it may even be detrimental to participants [73, 74].

Despite the large number of position papers advocating the use of debriefing, every controlled study using adequate measures that we found in our literature search concluded that debriefing was no more effective than the control conditions. For example, Marchand, Guay, Boyer, Iucci, Martin and St-Hilaire [75] looked at the impact of debriefing intervention for victims of armed robbery by randomly assigning 75 victims to either critical incident stress debriefing or a control group. They found no evidence of the usefulness of debriefing to prevent PTSD or attenuate posttraumatic symptoms. The results remain the same after controlling for the severity of depressive mood.

### **3.5 Category 5: Development of strategies to cope more efficiently with future stressful situations**

Our extensive search of the Scopus database journals did not revealed any published study on the use of SMT to cope with stressors such as those experienced in theatre of operations. Nevertheless, it led to the identification of 12 papers reporting empirical results on applications of SMT that should be meaningful to assess whether SMT can be used to help military personnel develop effective coping skills while dealing with acute stressors. We will begin with papers dealing with military or other life-threatening stressors, followed by papers on sports psychology.

One study by Rice and Gerardi [76] was conducted with military personnel. They did not train participants to use SMT techniques for themselves and unfortunately they did not report any results, so at first glance their article may appear less relevant. But they trained occupational therapists to deal with stress related issues in their work with soldiers in a theatre of operation. The philosophy of their program is based on SMT and illustrates well several differences that will be found between papers in this category and those presented in the preceding fourth one.

In this program several SMT strategies are used, such as detecting signs of stress, skills training, exercises, role play, progressive exposure to stressful situations, and fostering a feeling of control. The training focuses on detecting, and intervening with, soldiers manifesting symptoms of combat fatigue. The program is described in detail in Rice and Gerardi's [76] paper, and includes training schedules, casualty role-play scenarios in increasingly stressful situations, practicing critical incident stress debriefing and other clinical tasks performed in theater of operations, as well as learning how to function under stressful conditions. Great emphasis is put on concepts such as progressively practicing newly acquired skills, over learning basic skills so they become automatic, and relying on experience for complex situations. The program brings trainees to perform their work in situations that are increasingly stressful, moving from knowledge acquisition in a safe, non-threatening context, through knowledge integration and finally into high fidelity application in a realistic environment.

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<sup>2</sup> Note. Because of its methodology, our literature search should not be considered a comprehensive review on debriefing.



Unfortunately, no results are provided on the effectiveness of the program. The authors stated they expect that providing coping skills and practicing them in progressively stressful situations should prevent occupational therapists from feeling overwhelmed or helpless and increase performance in their duties.

Another SMT program has been described by Sheehan [77] for training new FBI agents in coping with stress. The program consists essentially of psychoeducation by teaching future agents about the impact of stress and that they cannot avoid this emotion. They receive information on coping strategies and how other experienced agents deal with stress. They are also lectured on the difference between chronic and traumatic stress. Unfortunately, the author did not report any empirical results on the impact of the program. The interest of this program is the use of simple SMT strategies that the author hopes can be used during acute stress caused by objective threats, as opposed to more complex SIT and AMT strategies. It is also part of a global approach focusing not only on the individual but also involving actions at the organizational level. The program highlights clearly three important steps of most SMT approaches: detecting signs of stress, psychoeducation and applying specific coping strategies. Unfortunately, it remains unclear the extent to which the trainees actually practiced the coping strategies and whether it was effective.

Kamiyama, Yamami, Sato, Aoyagi, Kyoya, Mizuno et al. [78] published a brief report on a SMT program for marine hazard rescuers. They recruited 28 professionals performing rescue operations for marine disasters and accidents. Participants were randomly assigned to a group receiving: (a) a SMT program based on psychoeducation about stress, relaxation and autogenic training, or (b) only psychoeducation about stress. Both interventions were delivered in five weekly 90-minute sessions. Outcome was assessed with self-report questionnaires on anxiety and depression, and with physiological parameters assessed in blood samples. After the fifth session participants were sent in a (real, not simulated) rescue mission following a devastating earthquake. Statistical analyses confirmed that participants who received the enhanced SMT program scored better on the anxiety, depression and physiological measures compared to the control group that received only basic psychoeducation. This study possesses several strengths, such as the use of both self-report and biological markers of stress, a credible control group and random assignment. Even if the lack of a follow-up precludes concluding that the program had a long lasting effect, it is clear that some SMT strategies can help people working in high-risk situations cope more efficiently with stress.

In another paper with professionals working in stressful situations, Hytten, Jensen and Skauli [79] report studies with smoke divers and with free fall lifeboat passengers. In both cases, the SIT program was designed to prepare future oil workers for catastrophes and increase their chances of survival. Participants were recruited for smoke diving (i.e., a task some trained firefighters perform using an oxygen mask and full body gear) among oil industry "regular" employees receiving basic safety course. They were randomly assigned to a control group ( $n = 43$ ) and an experimental group ( $n = 44$ ). The experimental group received a one-hour training session based on the SIT protocol and the control group did not receive any SMT training. On the day following training all 87 smoke divers went to a bunker and participated in a fire simulation where they had to crawl in a narrow labyrinth filled with fire smoke, in total darkness. Participants were constantly watched by instructors and could call for help during the simulation. Those who received SIT training required significantly less help from instructors but, contrary to expectations, they reported significantly more anxiety than the control group. No difference was found on salivary cortisol response, a well known biological marker of the stress response.

A second study is reported in the same article [79], this time on the training of oil industry personnel to use a freefall lifeboat. On offshore oil and gas platforms, rapid evacuation in cases of emergencies rely on the use of boats that slide out from a ramp and hit the water away from the platform. This is a stressful experience, especially when falling from the height of an overseas oil platform. After random assignment, 21 participants received one hour of SIT training and the remaining 41 control participants received no additional training at all. On the following day, four consecutive free dives were performed. Results revealed no statistical significant difference between the two conditions on self-report and salivary cortisol measures. However, participants who received SIT training reported higher acceptance of using freefall lifeboats than the control group.

Dealing with the pressure of sport competition is far different from being in a theatre of operations and stressors are not life threatening. However, it is worth examining the SMT strategies used by athletes because SMT was used while athletes were required to perform specific tasks while under stress. Mace and Carroll [80] studied gymnasts to see if SIT could increase athlete's performance by reducing negative beliefs during competitions. In 1989, after encouraging results in pilot case studies, they reported an experimental study with 18 female gymnasts performing a bench sequence [81]. Participants were randomly assigned to two conditions: (a) seven SIT sessions of training in relaxation, imagery and using coping self-statements, or (b) seven training sessions during which they practiced a series of coordination exercises but no psychological stress management training was given to them. Outcome was assessed with several measures, including self-report, heart rate frequency (the most common biological marker of stress and anxiety) prior to the performance, independent observer's ratings of distress and scores provided by qualified gymnastics judges who rated video recording of the participant's performance. Pre/post comparisons revealed that athletes who received SIT training were significantly less anxious during their performance ( $F(1, 16) = 12.55, p < 0.01$ ) and obtained significantly better scores by the expert judges than those in the control condition. No difference was found in the heart-rate measure.

The same team tested how SIT could be used to control the stress experienced by rock climbers during rappelling (also known as abseiling, [82]). Half of the twenty volunteers were randomly assigned to a SIT group and the other half to a no training control group. Following SIT training, participants were invited to complete their descent down a rope in rappelling from the roof of a 21.2 m building. Self-reported stress, overt signs of distress assessed by an independent observer and heart rate frequency were measured prior to the descent. The SIT group showed significantly less self-reported stress ( $F(1, 18) = 9.49, p < 0.01$ ), distress ( $F(1, 18) = 14.67, p < 0.01$ ) and fewer behavioural signs of distress as judged by the observer ( $F(1, 18) = 27.77, p < 0.01$ ). However, as with the previous study, there were no significant differences between the groups in terms of heart rate.

Finally, another study in sports psychology reported positive results of using SIT on the performance of golf players [83], and two studies had been found on the reduction of injuries among athletes. Kolt, Hume, Smith and Williams [84] could not find any significant impact on the frequency of injuries of among their 22 gymnasts assigned to a SMT or a control condition, but Perna, Antoni, Baum, Gordon and Schneidermann [85] found that 34 athletes randomly assigned to a SMT program experienced significant reductions in the number of illness and injury days as compared athletes in the control group.

#### 4. Discussion

Overall, studies on the application of the broad strategies used in SMT show that it is most of the time effective and for an extensive category of difficulties. For instance, it sometimes has a physical impact on medical conditions and is clearly effective to help patients cope with associated psychological reactions. Most studies, but not all, support the effectiveness of SMT. When it comes to dealing with chronic physical illness, strategies having an enduring impact on patient's life and coping style might also be more effective than brief interventions.

The same can be said when looking at mental disorders. Our literature review showed that SIT and AMT are effective tools for PTSD and, to some extent, for other disorders such as generalized anxiety disorder. The broad set of SMT intervention are powerful enough to treat mental disorders, as long as they are structured and include ingredients at the core of SIT and AMT like exposure, cognitive restructuring and homework assignments. Softer techniques often included in SMT, like relaxation and basic coping skills, can be learned and mastered effectively by people who suffer from significant life impairment like schizophrenia or alcoholism in order to deal with stress-related issues instead of treating the disorder itself.

As for the control of non-clinical anxiety symptoms, a large number of studies successfully used SMT to train people to control their stress. These studies represent a secondary prevention approach, where people are already dealing with stress that has not yet reached a clinical level of significance. Broadly defined SMT interventions are effective to deal with stress in the workplace, with academic stressors and for healthcare professionals. Structured approaches like SIT and AMT, as well as biofeedback, appear to be superior. Adapting the coping strategies and how they are presented to the trainees may be inevitable when it comes to applying them to specific contexts such as school and police work. Along those lines, some authors have noted the need to also adapt SMT programs to attitudes of trainees towards stress and emotion regulation.

On another application of SMT, the studies analyzed almost invariably mention that people attending debriefing programs appreciated the experience and were under the subjective impression that it had been beneficial to them. However, empirical data, especially when collected in rigorously designed studies, do not support its efficacy. The selection criteria for the articles were not designed to target debriefing, therefore our analysis may be incomplete. Nevertheless, the limited efficacy of debriefing to reduce the incidence of PTSD has been confirmed several times and in other more comprehensive reviews [73, 86] and the consensus is that debriefing trauma victims is not an effective approach, at least when the goal is to reduce the incidence of mental disorders.

Finally, a few interesting studies could be used to appraise the usefulness of SMT in the training of military personnel to cope with acute stressors. Their results suggest that broadly defined SMT strategies could be effective in preparing individuals to cope with a highly specific upcoming stressor. Studies with military personnel and other people facing life-threatening stressors are scarce, and the breadth of stressors they are likely to experience might be too great to provide effective training options for some of the training programs (e.g., SIT). However, the existing research does suggest that some SMT strategies could be effective, even for life-threatening situations. Their efficacy might be increased if the SMT strategies are structured, sufficiently long to be well learned, and practiced until they are well mastered in stressful situations. Attitudes towards using such coping skills may be a

factor to take into account when designing the training protocols. In the case of Hytten et al.'s [79] work, it is possible that the use of SIT may not have been optimal. SIT involves strategies that should be learned over many sessions, accompanied with extensive practices and includes several techniques that may be more appropriate for dysfunctional primary and secondary appraisal than dealing with the adequate appraisal of an objective life-threatening stressors. In any case, Hytten et al.'s [79] paper suggests that a brief, one hour, SMT training is probably not sufficient to learn how to cope effectively with objective life-threatening stressors. Longer programs, with extensive practice, may be required. Overall, our goal was to assess whether or not SMT could be used to help military personnel develop effective coping skills while in the theatre of operation. Studies reported in the present chapter point towards a positive answer. Many specific strategies have been shown to be useful, from tactical breathing [87] to cognitive restructuring [10] and exposure [11]. However, a challenge may reside in the low motivation of soldiers in using and practicing psychological tools that are viewed as making a person weak or unmanly. It would therefore be strategic to find ways to help military personnel apply SMT without the negative perceptions. One way of accomplishing that could be to combine SMT with virtual reality [88,89,90]. Although virtual reality is sometime viewed as requiring considerable technological equipment, studies are being conducted to assess the capability of video games and a television screen in helping soldiers control their anxiety. With this technology, it is believed that the negative perception would be reduced and soldiers could then benefit from stress management training in a way that would prove beneficial for their health and mission without appearing weak.

## 5. Authors' notes

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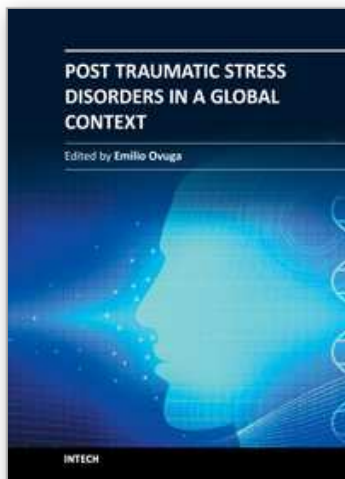


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## **Post Traumatic Stress Disorders in a Global Context**

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If, as a health care or social service provider, one was called upon to help someone who has experienced terror in the hands of a hostage taker, an irate and chronically abusive spouse or parent, or a has survived a motor vehicle accident, landslide, earthquake, hurricane or even a massive flood, what would be one's priority response? What would be considered as the most pressing need of the individual requiring care? Whatever the answer to each of these questions, people who have experienced terror, suffer considerable psychological injury. Post-Traumatic Stress Disorder in a Global Context offers some answers to meet the needs of health care and social service providers in all settings, whether in a hospital emergency room, at the war front, or natural disaster site. The take home message is, after providing emergency care, there is always a pressing need to provide mental health care to all victims of traumatic stress.

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