

# Controllability Awareness in Professionals Under the Threat of Terror: Chronic versus Acute Community Stress

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**ABSTRACT.** Following a terror attack, Israeli teachers are often required to debrief their students and support them while having to cope personally with the community threat. This study aimed to advance the understanding of factors associated with improved coping under threat. “Controllability awareness,” being attentive to what is and is not controllable in one’s environment, is associated with tolerance for stresses of daily life. Here controllability awareness was assessed as a predictor of effective coping among schoolteachers in potentially traumatic stress situations in a community during acute stress (just after a Katyusha rocket attack) or chronic stress (ongoing threat of pending border hostilities). Correlations of scores on the Controllability Awareness Inventory

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with several self-report measures of adverse outcomes indicated that general controllability awareness was significantly associated with lower perceived stress and fewer psychological symptoms during both chronic and acute stress and also significantly predicted physical symptoms and the impact of the stressful event during chronic stress. Controllability awareness measured specifically in relation to emergencies correlated significantly with perceived stress and symptoms in both situations. As teachers who experience fewer adverse outcomes during community stress are more likely to be effective in managing the effects of stress on their students, the association between controllability awareness and effective responses suggests that controllability awareness training may enhance coping efficacy among support-providing professionals under chronic and acute stress. *[Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <<http://www.HaworthPress.com>> © 2004 by The Haworth Press, Inc. All rights reserved.]*

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The impact of terrorism on a civilian population can be devastating. From their recent survey, Galea et al. (2002) reported significant degrees of posttraumatic stress disorder (PTSD) and depression in the population in Manhattan that resides below 110th street. A national survey conducted following the September 11th terrorist attacks on the World Trade Center and the Pentagon revealed a remarkable degree of symptomatology across the nation in both adults and children (Schuster et al., 2001). In a longitudinal national study by Silver et al. (2002), data showed that 2 months after the attack 17% of the population outside New York City experienced acute or posttraumatic stress symptoms. Information on effective coping with the impact of a terrorist attack was provided by Cohen-Silver et al. (2002), who argued that the degree of psychological response to the traumatic event was not predicted simply by objective measures of exposure to or loss from the trauma. Instead, they posited that the use of specific coping strategies was associated with symptoms over time. This study aims to investigate coping strategies that can help individuals fare better under the threat of terrorism.

It has previously been claimed that Israel is a natural laboratory for the study of stress (Lazarus, 1982). Since that argument was made, ter-

rorism attacks involving suicide and car bombings in busy urban sections and launching of explosive projectiles into civilian centers has continued to be part of the collective Israeli experience. Research on life under constant threats of terrorism and community disasters indicated that whereas only a small segment of the populace experienced emotional collapse and serious posttraumatic morbidity, a greater percentage suffered from sub-clinical forms of stress (Baum, Gatchel, & Schaefer, 1983; Ben-Zur & Zeidner, 1991; Levitt & Leventhal, 1986; Zeidner & Ben-Zur, 1994). Research on coping with the threat of the Iraqi missile attacks on Israel showed that emotion-focused coping positively related to anxiety and physical symptoms and that active problem-focused coping was related to less negative stress reactions (Somer, Keinan, & Carmil, 1994; Zeidner & Ben-Zur, 1994; Zeidner & Hammer, 1992). Observations conducted in Israeli schools during wartime revealed that teachers' concerns for the safety of their loved ones and concerns for their own security may have contributed to a sense of chaos and disorganization in their classrooms (Ayalon, 1983). Lahad (1997) interviewed teachers in Kiryat Shmona, a border community in Northern Israel frequently shelled from Lebanon by Hezbollah terrorists. He concluded that during periods of border hostilities, teachers were overwhelmed by the need to cope with their own distress while managing their classes. The stress responses of Israeli school-age students in communities under attack (Klingman, 2001) and the importance of school interventions during such crises have been documented (Brock & Lazarus, 2002). Recently, the Regional Council of Upper Galilee has requested the authors to help identify important correlates of educator's stress in emergency situations. Because it is important to ensure quality care of children during emergency situations, we aimed to assess variables of teachers' coping and emotional well-being under threat.

Recently, Todrank Heth and Somer (2002), along with various colleagues, have been investigating "controllability awareness" as a characteristic of stress tolerance in healthy young adults, patients suffering from chronic and acute rheumatic diseases (Todrank Heth, Schapira, & Nahir, 2003), and clients seeking psychotherapy for stress-related clinical psychological problems (Somer & Todrank Heth, 2002). "Controllability awareness" refers to the extent to which an individual pays attention to distinctions between controllable and uncontrollable aspects of potential outcomes in responding to life situations. This construct differs from "perceived control" (e.g., Paulhus, 1983; Thompson & Spacapan, 1991), "personal control" (e.g., Folkman, 1984; Peter-

son & Stunkard, 1989), and “locus of control” (e.g., Levenson, 1981; Rotter, 1966), which focus quite broadly on how much or whether events are seen as controllable. Controllability awareness focuses quite specifically on the subtle distinctions among different aspects within (as opposed to across) situations that may or may not be controllable and distinctions among the agents affecting the outcomes. Controllability awareness represents the ability to distinguish which aspects in the environment the individual can control, which others control, which require cooperative efforts to achieve the outcome, and which are not under any human control (Todrank Heth & Somer, 2002).

Controllability awareness is grounded in a similar tradition as “constructive thinking” (Epstein & Meier, 1989) and “adaptiveness” (Kohn, 1996), which are also indicative of managing life’s demands more successfully. Scores on the Constructive Thinking Inventory (CTI; Epstein & Meier, 1989) and the Personal Functioning Inventory (PFI; Kohn, O’Brien-Wood, Pickering, & De Cicco, 2003), which measures adaptiveness, correlated significantly with scores on the Controllability Awareness Inventory (CAI), which was developed to assess controllability awareness (Todrank Heth & Somer, 2002). Controllability awareness, however, is thought to be an explicit factor in stress tolerance because individuals who are mindful of controllability distinctions are more likely to respond confidently and effectively to environmental demands and thus they are more likely to appraise situations as challenging rather than threatening. Threat appraisals, which are made when the situational demands appear to exceed the available resources for managing the situation, are associated with physiological stress responses whereas challenge appraisals are associated with physiological motivation (Lazarus, 1991).

Distinctions between threat and challenge appraisals are most instructive in understanding differential responses to situations in which the demands may or may not be appraised as exceeding available resources because possessing the personal efficacy that controllability awareness brings may mean appraising a particular situation as a challenge that a person lacking controllability awareness would appraise as a threat. Until now, controllability awareness has only been explored in the context of “stresses” of everyday life, even if that daily life presents possible threats that accompany chronic illness or psychopathology. The current field study was undertaken to assess the predictive value of controllability awareness in evaluating responses of teachers who, despite not being specifically trained as support-providing professionals, must nonetheless deal with the effects of chronic and acute stress in

their students when their community is under circumstances of objective “threat” as in terrorist emergencies. Pines (2002) has argued that when teachers perceive a considerable disparity between their expectations of normal educational leadership and a less satisfying reality (e.g., under the threat of war or terror), this perception can create a discrepancy between their expected and observed levels of professional self-efficacy that can cause considerable emotional distress.

This field study was conducted in Kiryat Shmonah (KS), a town of 23,000 inhabitants in northern Israel near the border with Lebanon. Uncontrolled activity of terrorist organizations within Lebanon during the past three decades has made life in this small township very taxing. Among the many hardships KS residents have had to endure were 3,928 Katyusha rocket hits causing severe property damage. KS citizens have often been alerted by the warning sounds of alarm sirens, but adversity sometimes has preempted alarm warnings, preventing locals from making it to safety on time: 81 soldiers have died defending the town, 44 civilians have been killed, 373 citizens have been physically injured, and 487 have been diagnosed as suffering from acute posttraumatic psychological disturbances (Personal Communication, KS Chief Municipal Security Officer, July 2000). Community stress in KS does not dissipate, however, when the all-clear alarm is sounded because of the unpredictable nature of terrorist hostilities. High levels of chronic anticipatory stress experienced by residents of this small municipality necessitated the opening of a permanent multi-disciplinary Community Stress Prevention Centre to address the psychological needs of the distressed community.

We aimed at determining whether there were predictable relationships between controllability awareness and perceived levels of life stress and self-reported physical and psychological symptoms in teachers actively working under chronic and acute threats of terror attacks.

## ***METHOD***

### ***Participants***

Teachers (96 women and 20 men ranging in age from 25 to 61 with an average age of 40.4,  $SD = 7.8$ ) from the KS school system volunteered to participate in the study by responding to a series of questionnaires distributed in their school mailboxes. Data were collected twice: immediately following a lethal terrorist shelling (acute stress) and 10

months later, in anticipation of a new flare-up of hostilities (chronic stress). Participants had been residents of KS from 1 to 49 years, with a mean residence time of 28 years ( $SD = 12.1$ ).

### **Materials**

The test battery consisted of the Controllability Awareness Inventory (CAI; Todrank Heth & Somer, 2002) with a supplemental section relating to objective threat or emergency situations, the Cohen-Hoberman Inventory of Physical Symptoms (Cohen & Hoberman, 1983), the Brief Symptom Inventory (Derogatis & Melisaratos, 1983), and the Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983). Respondents in the acute stress situation also completed the Impact of Event Scale (Horowitz, Wilner, & Alvarez, 1979). All these scales had previously been translated into Hebrew and back-translated into English. Two bilingual native Hebrew speakers (ES and AZW) wrote a supplemental acute stress section of the CAI worded in Hebrew for terrorism-specific emergency situations. We also collected demographic information about the subjects, including age, sex, marital status, number of children, religiosity, years of education, and years of residence in KS.

*The Controllability Awareness Inventory (CAI).* The CAI (Todrank Heth & Somer, 2002) measures the tendency to respond based on an awareness of the controllability of potential outcomes. The CAI measures the extent to which the individual's behavioral and emotional responses to daily life situations, which may or may not be appraised as stressful, reflect awareness of the controllable and uncontrollable aspects of the outcomes of those situations without focusing explicitly on controllability distinctions. Individuals with higher CAI scores perceive their lives as less stressful, report themselves to be in better health, and think in ways that enable them to manage environmental demands more effectively (Todrank Heth & Somer, 2002). The inventory consists of 20 simple statements assessing awareness of various aspects of controllability including personal control (e.g., "I am confident that I can manage all the things I have to do"), shared control (e.g., of an item worded anti-trait "I get upset when someone won't cooperate with me"), others in control (e.g., "I try not to be impatient with inefficient clerks and administrators"), and no one in control (e.g., "I don't worry about things if there's nothing I can do about them"). Subjects indicate how much they agree or disagree with each statement on a 5-point scale from 1 = disagree strongly to 5 = agree strongly. Anti-trait items are reversed and the responses are summed to produce a score between 20 and 100. In the

original study, Cronbach's alpha measures for the English CAI yielded .78 and .85, indicating the reliability of this inventory (Todrank Heth & Somer, 2002). The reliability of the Hebrew version of the CAI was .71 when used with psychotherapy patients in treatment for stress-related problems (Somer & Todrank Heth, in press) and .72 when used with patients in treatment for rheumatological illnesses (Todrank Heth, Schapira, & Nahir, in press). In the current study, under circumstances of chronic stress, the alpha reliabilities for the CAI (.70) and the CAI-OT (.74) were adequate, but under acute stress, the alpha reliabilities for the CAI (.58) and the CAI-OT (.53) were fairly low. (However, when the one aberrant item from the CAI-OT was removed, the reliability jumped to .61, and eliminating 3 less reliable items from the CAI brought the reliability to .70. Nevertheless, the data presented are from the analysis of the full inventory because removal of these items did not affect the correlations among the variables.) In Todrank Heth and Somer's study (2002), the English CAI was slightly more highly correlated with the Perceived Stress Scale ( $r = -.60$ ) and the Cohen-Hoberman Inventory of Physical Symptoms ( $r = -.52$ ) than the scores on either the Personal Functioning Inventory (PFI) or the Constructive Thinking Inventory (CTI). Construct validity of the instrument was ascertained through comparisons with the PFI and the CTI, yielding correlations of .66 and .63 respectively. All validity indices were significant at a  $p < .01$  level (Todrank Heth & Somer, 2002). The instrument has not yet been tested as a coping measure among professionals who may be expected to deal with the repercussions of high stress or objective threat situations. Coping strategies depend on the particular environmental demands, thus coping responses are assessed most effectively in responses to specific situations rather than in general terms (Folkman, 1984). Because the current study involved assessments in chronic and acute objectively stressful situations, 8 items from the CAI were reworded to address responses to objective threat situations specifically. These 8 items were appended to the CAI and will be referred to as the CAI-OT, for CAI specific to objective threat circumstances. We included this in order to make a comparison between the general CAI, which was designed to measure controllability awareness in daily life situations, and the specific CAI-OT, which was designed to measure controllability awareness in objective threat or emergency situations.

*The Cohen-Hoberman Inventory of Physical Symptoms (CHIPS).* The CHIPS is a list of 39 physical symptoms selected specifically to exclude psychological symptoms, such as depression and anxiety, but to

include complaints of a psychosomatic nature, such as headaches and acid stomach (Cohen & Hoberman, 1983). Subjects indicate how much they have been bothered by each of the symptoms on a 5-point scale from 0 = "not at all" to 4 = "very much." The original instrument was reported to have good validity when compared to an objective criterion (i.e., visits to a university medical clinic) and adequate reliability (Cronbach's Alpha = .88; Cohen & Hoberman, 1983). The internal consistency of the Hebrew version of the instrument was excellent (Cronbach's Alpha = .96, Zrihan Weitzman, 2001).

*The Brief Symptom Inventory (BSI).* The BSI is a list of 43 thoughts and feelings associated with psychological symptoms (Derogatis & Melisaratos, 1983). The instrument is designed to reflect the psychological distress and symptom patterns of psychiatric and medical patients, as well as community samples and is a shorter version of the Symptom Checklist-90 (Derogatis, 1983) and highly correlated with it (Derogatis & Melisaratos, 1983). The instrument was reported to have adequate reliability (Cronbach's Alpha for original instrument = .81 and the Hebrew version seemed to be even more consistent internally, Cronbach's Alpha = .91 and .96; Canetti, Shalev, & De-Nour, 1994; and Zrihan Weitzman, 2001, respectively). In terms of validation, high convergence between BSI scales and like dimensions of the MMPI provided good evidence of convergent validity, and factor analytic studies of the internal structure of the scale contribute evidence of construct validity (Derogatis & Melisaratos, 1983). The BSI's Global Severity Index was used as a dependent variable in this study.

*Perceived Stress Scale (PSS).* The Perceived Stress Scale (PSS) is a 14-item scale designed to assess subject's appraisal of how stressful (on a 5-point scale) their life situation feels to them (Cohen et al., 1983). Scores are summed, with higher scores indicating higher perceived stress. The scale showed adequate internal and test-retest reliability and was significantly correlated with life-event scores, depressive and physical symptomatology, and utilization of health services (e.g., Cronbach's Alpha = .86 for the original English version [Cohen et al., 1983] and .88 for the Hebrew version [Zrihan Weitzman, 2001]). It proved to be a better predictor of health and health-related outcomes than comparable life-event scales (Cohen et al., 1983).

*Impact of Event Scale (IES).* The Impact of Event Scale measures the impact of stressful events in terms of their intrusiveness into the person's life and the extent to which the person attempts to avoid the event's impact (Horowitz et al., 1979). The scale consists of 20 items. Nine items describe episodes of intrusion, eleven describe episodes of

avoidance. Respondents are asked to indicate whether or not each item had been experienced within the past seven days. If respondents recalled such an experience, they were asked to rate it for frequency (on a 5-point scale). The scale was reported to have convincing empirical validity and adequate reliability ranging between .78 to .82 for the original version (Horowitz et al., 1979) and between .84 and .91 for the Hebrew version (Schwarzwald, Solomon, Weisenberg, & Mikulincer, 1987; Zilberg, Weiss, & Horowitz, 1982). The subjects in this study were asked to address a specific life event: the last Katyusha attack on KS.

Under the various stress situations in this study, the alpha reliabilities of the measures of perceived stress, physical and psychological symptoms, and the impact of event were consistent, ranging from .83 to .98.

### *Procedure*

Questionnaires were placed in school mailboxes of the town's 280 teachers on 2 occasions. The first administration ("acute stress") was within days of a rocket attack in which 20 ground-to-ground rockets, launched by Hezbollah terrorists, detonated within the town perimeters. The rocket barrage killed 2 residents, physically wounded 5, resulted in 34 cases of posttraumatic anxiety, caused substantial damage to 500 structures and destroyed 14 vehicles. Residents were confined to bomb shelters for several days. The average reported elapsed time between this lethal rocket attack and participation in the first phase of data collection was 3.8 days ( $SD = 1.2$ ). The second administration of research materials was 10 months later during a time without rocket attacks but just days before the withdrawal of the Israeli Defense Forces from southern Lebanon, a time when hostility seemed likely and residents experienced a familiar state of vigilant expectation of an impending attack, a state characteristic of the steady apprehensive life in KS ("chronic stress"). The average reported elapsed time between the original rocket attack and participation in the second phase of this study was 296 days ( $SD = 6.8$ ). Mail-in surveys typically have response rates of just over 20% (Schuldt & Totter, 1994). To achieve a higher response rate a number of measures were adopted (Diem, 2002): Envelopes were individually addressed (handwritten or typed, not labeled), we used original (not photocopied) official university letterhead, we included a deadline date in the cover letter and we offered a summary of the results. Completed packets were returned anonymously to school offices.

In this study of the packets distributed, 84 were returned (a 30% response rate). Of these, 61 were complete and thus usable (the others

could not be used because of missing pages or incomplete questionnaires). During the chronic stress situation 88 packets were returned (a 31% response rate), but only 63 were complete. Eight teachers completed the questionnaires during both administrations. Demographic information we received from the KS school system revealed that our final total research sample ( $n = 124 - 8 = 116$ ) did not differ from the general teacher population ( $n = 280$ ) in terms of sex [% female ( $n = 84$  (97) and 83 (249) respectively,  $\chi^2 = 2.03$ , NS] or age [M (SD) = 40.4 (7.8) and 42.1(8.3) respectively,  $t = -.09$ , NS].

### **Results**

The initial analysis of the results indicated that there were no effects of sex ( $t = 1.43$ ,  $p = .16$ ), age ( $r = .07$ ,  $p = .59$ ), marital status ( $t = .23$ ,  $p = .82$ ), education ( $r = .20$ ,  $p = .13$ ), religiousness ( $r = -.01$ ,  $p = .95$ ), or years of residence in KS ( $r = .19$ ,  $p = .14$ ) on participants' CAI scores in the "acute stress" situation. In the "chronic stress" situation, there were no effects of sex ( $t = 1.42$ ,  $p = .16$ ), marital status ( $t = .90$ ,  $p = .37$ ), education ( $r = .20$ ,  $p = .11$ ), religiousness ( $r = .00$ ,  $p = .98$ ), or years of residence in KS ( $r = .05$ ,  $p = .67$ ) on participants' CAI scores, but there was a significant effect of age ( $r = -.29$ ,  $p = .02$ ). Although the questionnaires were returned anonymously, it was possible to use demographic information (i.e., age, marital status, number of children, education, religiousness, and years of residence) to determine that 8 participants answered the questionnaires in both circumstances. The 2 groups (analyzed without these 8 respondents) were comparable in sex, age, marital status, level of education, ethnicity, religiousness, number of children, and years of residence in KS (see Table 1). No differences were found in the scores of the 2 groups on any of the inventories (see Table 2). For the 8 women who completed the questionnaires twice, there was no significant change in their CAI scores (Wilcoxon matched pairs test:  $t = 17.5$ ,  $z = 0.07$ ,  $p = 0.94$ ). Because of the similarity between the acute and chronic groups on key demographic and psychological variables, we regarded them as a representative sample, tested twice under 2 different stress circumstances: acute and chronic. There were significant differences in the relationships among variables within the groups, however, and thus they were analyzed and are presented separately. (Because there were no differences between the results when the analysis did and did not include the 8 women who answered the questionnaires in both stress circumstances, the reported relationships are for the full sample for each group.)

TABLE 1. Demographic Characteristics of Participants in the Two Conditions Under Which They Were Tested

	Acute stress condition (n = 53)	Chronic stress condition (n = 55)	Statistic
Sex % Female (n)	79 (48)	89 (56)	$\chi^2 = 2.38$ (NS)
Age M (SD)	40.36 (8.3)	40.44 (7.9)	$t = -.06$ (NS)
Marital Status % married (n)	85 (52)	89 (56)	$\chi^2 = .52$ (NS)
Level of Education % B.Ed. (n)	57 (35)	54 (34)	Fisher's test = .29 (NS)
Ethnicity % Israeli born (n)	69 (42)	68 (43)	$\chi^2 = 8.36$ (NS)
Religiousness % secular (n)	31 (19)	30 (19)	$\chi^2 = 3.99$ (NS)
Number of children M (SD)	3.1 (1.9)	2.9 (1.8)	$t = .48$ (NS)
Years of residency in KS M (SD)	27.1 (11.5)	28.8 (13.6)	$t = -.74$ (NS)

TABLE 2. Psychological Characteristics of Participants in Both Acute and Chronic Stress Situations

	Acute Stress		Chronic Stress		t
	M	SD	M	SD	
CAI	3.39	0.46	3.33	0.43	0.64 (NS)
CAI-OT	3.54	0.67	3.40	0.74	1.09 (NS)
CHIPS	1.82	0.75	1.77	0.63	0.42 (NS)
BSI	1.74	0.64	1.77	0.88	0.16 (NS)
PSS	2.55	0.52	2.51	0.66	0.35 (NS)

*Controllability Awareness Under Acute and Chronic Stress Circumstances.* The correlations among the CAI and the CAI-OT and the other measures for both situations are presented in Table 3. Under chronic stress, scores on both the CAI and the CAI-OT correlated significantly with perceived stress and with physical and psychological symptoms, although the CAI was the superior predictor of adverse outcomes. In the acute stress situation, scores on the CAI and the CAI-OT correlated significantly with perceived stress and psychological symptoms, and those of the CAI-OT correlated significantly with physical symptoms and the impact of the event, indicating that the CAI-OT was the superior predic-

TABLE 3. Correlations of the CAI and the CAI-OT with the PSS, the CHIPS, the BSI, and the IES in Both Acute and Chronic Stress Situations

	CAI-OT	PSS	CHIPS	BSI	IES
<b>Acute stress<sup>1</sup></b> CAI	.20	-.43*	-.13	-.41*	-.05
<b>Acute stress<sup>1</sup></b> CAI-OT	---	-.45*	-.42*	-.42*	-.53*
<b>Chronic stress<sup>2</sup></b> CAI	.43*	-.46*	-.49*	-.66*	---
<b>Chronic stress<sup>2</sup></b> CAI-OT	---	-.42*	-.43*	-.55*	---

Note. <sup>1</sup>N = 61; <sup>2</sup>N = 63; PSS = Perceived Stress Scale; CHIPS = Cohen-Hoberman Inventory of Physical Symptoms; BSI = Brief Symptom Inventory; IES = Impact of Event Scale; CAI = Controllability Awareness Inventory; CAI-OT = Controllability Awareness Inventory-objective threat situation. \*p < .001.

tor of adverse outcomes in situations involving objective threat. Although the reliabilities for the CAI and the CAI-OT were fairly low under acute stress, each controllability awareness inventory was a better predictor of perceived stress and physical and psychological symptoms in the situation for which it was designed.

## DISCUSSION

Despite the modest reliabilities of the controllability awareness measures in the acute stress circumstances, the findings indicate that controllability awareness is a potentially important characteristic of stress tolerance among Israeli teachers living under stressful circumstances. It is interesting to note the differential predictive value of the two versions of the CAI depending on the particular circumstances. The statements that are worded in general terms in the original CAI seem to be more appropriate for measuring and then predicting adverse outcomes under chronic stress conditions, which would be at the extreme end of “daily life,” whereas the specifically worded statements in the CAI-OT are clearly superior for measuring and then predicting adverse outcomes under acute stress when the circumstances represent an objective threat. The consistent significant inverse relationship between controllability

awareness and adverse outcomes in both chronic and acute stress situations indicates the importance of controllability awareness as a predictor of stress tolerance.

These results suggest that controllability awareness may not only be an effective approach to daily life (Todrank Heth & Somer, 2002), even when daily life involves psychological symptoms related to stress (Somer & Todrank Heth, *in press*) or chronic illnesses (Todrank Heth, Schapira, & Nahir, *in press*), but also an enhanced coping ability in chronic and acute community stress. The results also suggest that achieving posttraumatic stress tolerance partly depends on individuals being specifically mindful of controllability distinctions in these life-threatening situations. We posit that those mindful of controllability distinctions and skillful in making these particular distinctions even under acutely stressful, *i.e.*, objectively threatening, situations are more likely to respond confidently and effectively to the dangerous environmental demands of the deadly terrorist rocket attack. In this case, teachers who make such effective distinctions would be more likely to respond effectively to the demands presented by students in their classrooms during times of community stress.

This study has some limitations that are important to consider. First, although considerable efforts were invested in achieving an above-average response rate, response bias could not be avoided entirely, and this may have affected our results. Although our research groups did not differ from the KS's general teacher population in terms of sex, age, marital status, education, religiousness, or years of residence in the town; little further is known about other traits of non-responders in this study. Caution should be used in interpreting our data because of their restricted generalizability.

Second, the sample consisted of Israeli teachers, thereby limiting the generalizability of the findings to other populations. However, given that younger middle-age, college educated professionals comprise a large segment of the professional caretaker population, and that they are a group considered at risk for work-related secondary traumatic stress (Figley, 1995; Marmar, Weiss, Metzler, & Dellucci, 1996; Neumann & Gamble, 1995; Pearlman & Macian, 1995; Riordan & Saltzer, 1992; Weiss, Marmar, Metzler, & Ronfeldt, 1995), they are an important group to include in studies on coping with stress. Future research needs to examine the generalizability of our results to more diverse samples.

Another possible limitation concerns the use of the Hebrew version of the IES and not the more recent IES-R developed to parallel the DSM-IV criteria for PTSD. The IES-R includes 7 additional items that

measure hyperarousal. Two reasons guided us in this decision. First, no psychometric data on a Hebrew version for the more recent IES-R exist, and the Hebrew language IES demonstrated convincing empirical validity and reliability (Schwarzwald, Solomon, Weisenberg, & Mikulincer, 1987). Second, sufficient measurement for physiological arousal was provided through two other instruments we incorporated in this study: the Brief Symptom Inventory (BSI) (it contains Somatization and Anxiety scales) and the Cohen-Hoberman Inventory of Physical Symptoms (CHIPS).

It has previously been proposed that controllability awareness should be a “skill” that is more amenable to training than personality characteristics, such as optimism and self-efficacy, which are also associated with stress tolerance (Todrank Heth & Somer, 2002). Developing controllability awareness skills may be particularly useful for support-providing professionals living in various types of high stress circumstances to help enhance their general coping efficacy. Providing controllability awareness training to those with low scores on inventories that may be indicative of these skills (and particularly those who are in support-providing professions) could enable these individuals to meet the demands of their stressful environments more effectively. We believe that exploring the effectiveness of controllability awareness skills training in reducing adverse outcomes in stressful situations is a worthwhile research venture.

### *Practice Recommendations*

Because no outcome research is yet available on these newly developed concepts, several of our recommendations are speculative and require empirical validation. Nevertheless, we thought it would be useful to offer a set of parsimonious practice guidelines. Controllability Awareness training can become a standard ego-strengthening procedure in the treatment of mood, anxiety and personality disorders, but it may be of particular usefulness in preparing individuals for coping with stressful and potentially traumatic conditions. Our data suggest that individuals who were mindful of controllability distinctions and skillful in making these particular distinctions even in an acutely stressful, objectively threatening situation were more likely to fare better in terms of physical arousal and acute posttraumatic symptoms, both risk factors for PTSD (Brewin, Andrews, Rose, & Kirk, 1999; Bryant & Harvey, 1998; Harvey & Bryant, 2000; Yehuda, McFarlane, & Shalev, 1998). There is a consensus that providing comfort, information, and support, and meeting immedi-

ate practical and emotional needs play useful roles in helping others cope with highly stressful events (Deahl et al., 2000). These authors provided evidence that debriefing may lead to less subsequent alcohol abuse suggesting that coping styles may be enhanced by early intervention. However, since there is no empirical support that any specific intervention prevents PTSD, and there is a possibility that some early interventions (e.g., Psychological Debriefing) may increase symptoms over time for some individuals (e.g., Bisson, Jenkins, Alexander, & Bannister, 1997), the most suitable early intervention should be psychological first aid, delivered as a supportive and noninterventionist procedure (e.g., coping skills training) rather than as a therapy or treatment (Litz, Gray, Bryant, & Adler, 2002).

We also suggest, however, the value of screening individuals who must be prepared to operate under stressful conditions for controllability awareness skills and the importance of offering controllability awareness training to those who require it before exposure to the anticipated threat. To promote secondary prevention of PTSD we propose that providing distressed survivors with information and training on controllability awareness could help boost their stress tolerance. Training should focus on teaching mindfulness of controllability distinctions and response options following the various controllability appraisals. Worried individuals under the threat of terror or war and distressed survivors should be taught to intervene directly in their environment to enhance their physical and support resources when controllable. Under externally less controllable conditions and based on successful treatment studies using cognitive behavior therapy, we suggest that providing education, anxiety management, exposure, and cognitive restructuring are the best strategies for enhancing survivor's self-efficacy. Future controlled outcome studies for controllability awareness training will help identify the components that are most useful in assisting individuals with the consequences of exposure to trauma.

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