

A school-based, teacher-mediated prevention program (ERASE-Stress) for reducing terror-related traumatic reactions in Israeli youth: a quasi-randomized controlled trial

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Background: Since September 2000 Israeli children have been exposed to a large number of terrorist attacks. A universal, school-based intervention for dealing with the threat of terrorism as well as with terror-related symptoms, ERASE-Stress (ES), was evaluated in a male religious middle school in southern Israel. The program was administered by the homeroom teachers as part of the school curriculum. It consists of 12 classroom sessions each lasting 90 minutes, and included psycho-educational material, skill training and resiliency strategies delivered to the students by homeroom teachers. **Methods:** One hundred and fourteen 7th and 8th grade students were randomly assigned to the ES intervention or were part of a waiting list (WL). They were assessed on measures of posttraumatic symptomatology, depression, somatic symptoms and functional problems before and 3 months after the intervention or the WL period. **Results:** Three months after the program ended, students in the experimental group showed significant reduction in all measures compared to the waiting-list control group. **Conclusions:** The ERASE-Stress program may help students suffering from terror-related posttraumatic symptoms and mitigate the negative effects of future traumatic experiences. Furthermore, a school-based universal program such as the ERASE-Stress may potentially serve as an important and effective component of a community mental health policy for communities affected by terrorism. **Keywords:** School-based interventions, children, trauma, terrorism, PTSD, depression. **Abbreviation:** E-S: ERASE-Stress.

In the Middle East, youth have been exposed to ongoing traumatic conditions due to the Israeli-Palestinian conflict, a conflict which has taken a significant toll on both Israeli (Pat-Horenczyk et al., 2007) and Palestinian children (Giacaman, Shanon, Saab, Arya, & Boyce, 2007; Thabet, Abed, & Vostanis, 2002).

Studies have suggested that children and adolescents who are exposed to ongoing war and violent conditions are at high risk of suffering from developmental impairments, depression, behavioral and functional disturbances, distress-related psychiatric symptomatology and health problems (Baker & Shaloub-Kerkovian, 1999; Cicchetti, Toth, & Lynch, 1993; Gabarino & Dubrow, 1996; Kinzie, Sack, Angell, Masson, & Rath, 1986; Koplewicz et al., 2002; Laor, Wolmer, & Choen, 2001; Pat-Horenczyk, 2005; Trappler & Friedman, 1996; Yule, Perrin, & Smith, 2001).

Prevalence estimates of war-related posttraumatic stress disorders (PTSD) among youth range from 8–75%, depending on the study (Gurwitch, Sitterle, Young, & Pfefferbaum, 2002; Saigh, Yasik, Sack, & Koplewicz, 1999). Furthermore, there is convincing

evidence that, for youth who are exposed to traumatic conditions, the negative psychological impact may not be transient (Desivilya, Gal, & Aylon, 1996; Dyregrov, Gjestad, & Raundalen, 2002; Klingman, 1992; Laor et al., 1997; Rosenthal & Levy-Shiff, 1993; Weisenberg et al., 1993).

Based on these findings, there is an urgent need to support youth who live under conditions of war and terrorism with community mental health services in order to enhance their resiliency and to reduce their risk of developing long-term posttraumatic symptoms.

As children spend a majority of their day in an educational setting, schools are an ideal venue for providing mental health services (Ehnholt, Smith, & Yule, 2005; Wolmer, Laor, Dedeoglu, Siev, & Yazgan, 2005). The classroom serves multiple purposes: it provides an environment which promotes normalcy and reduces stress reaction- and intervention-related stigma (Pfefferbaum et al., 2004), gives the students a supportive peer group with whom they can practice the coping skills learned from the program delivered (Yule & Williams, 1990) and reinforces trauma-related healing processes (Stein et al., 2003).

As the consequences of trauma on children become more apparent, there has been a simultaneous

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increase in the number of school-based interventions, which have been designed to combat these effects (Jaycox, Morse, Tanielian, & Stein, 2006). Most of the existing traumatic stress interventions fall into one of two categories: targeted interventions aimed primarily at children showing symptoms of traumatic stress reactions; and universal interventions which are directed at all children irrespective of symptomatology.

Four universal school-based programs dealing with students exposed to war and terrorism have thus far been reported. Two programs are based primarily on cognitive-behavioral coping skills: Healing after Trauma Skills (HATS; Gurwitsch & Messenbaugh, 2001) and the 'Building Resilience' Project (BRP; Baum, 2005). The 'Classroom-Based Intervention Program' (CBI; Macy, Macy, Gross, & Brighton, 2003) also uses cognitive-behavioral strategies but integrates with it expressive therapy and body-oriented interventions. The fourth program, 'Overshadowing the Threat of Terrorism' (OTT; Berger, Senderov, Horwitz, Gelert, & Sender, 2003), combines several of the cognitive-behavioral components with art-therapy techniques, body-oriented strategies and parental involvement. So far, HATS and BRP have relied primarily on qualitative and anecdotal data while the CBI program has provided some preliminary data but lacks experimental design components such as randomized assignment, the use of blind evaluators or treatment adherence components (Khamis, Macy, & Coigne, 2004). Empirically, in a quasi-randomized control trial, OTT revealed efficacy in reducing terror-related post-traumatic symptoms in elementary school students

in a town heavily exposed to terror (Berger, Pat-Horenczyk, & Gelkopf, 2007).

Since our target population was not identified as symptomatic children and since most of the students in the school we have chosen had not been directly exposed to war and terror, we decided to employ ERASE-Stress (ES; Berger & Manasra, 2005), a universal intervention which focuses on building resiliency, strengthening students' resources and avoiding direct exposure to students' past traumatic experiences. While OTT has shown empirically its efficacy in reducing terror-related posttraumatic symptoms in elementary school students (Berger et al., 2007), there were two reasons that led us to choose the ES program over the OTT program. First, we found in a pilot study that the ES program activities seem more appropriate for students in secondary and high schools than the activities in the OTT program. Secondly, the ES program focuses more on developing resiliency strategies than on learning and practicing coping skills. This seemed to be more appropriate for students dealing with the *threat* of war and terror rather than with the actual experiences.

This study aimed to examine the effectiveness of a new universal intervention, the ERASE-Stress program, a school-based universal intervention geared to reduce and prevent posttraumatic reactions in secondary students (Berger & Manasra, 2005). The program incorporates psycho-educational material and skill training with meditative practices and narrative techniques in order to re-process traumatic experiences. The content of each session is presented in Box 1.

Box 1 Enhancing resiliency among students experiencing stress (ERASE-Stress)

Session 1 – Getting Started: Introducing group leaders, participants and the program. Presenting an overview of the program and setting ground rules. Describing the stress continuum in an interactive format.

Session 2 – Strengthening Your Personal Resources: Identifying students' personal resource profiles and providing them with new coping skills. Students will learn how to enhance their coping repertoire via a resourcing model (the M-O-S-T B-A-S-I-C model).

Session 3 – Inhabiting Your Body: Learning the role of the body and its function during stress, becoming aware of somatic reactions pertaining to stress and developing sensory-motor strategies to control the body during stressful situations.

Session 4 – Knowing Your Feelings: Enhancing students' emotional awareness, identifying and clarifying feelings and becoming aware of the connections between sensations and feelings. Learning various modalities to express feelings.

Session 5 – Controlling Your Emotions with Your Mind: Exploring relationships between sensations, thoughts and feelings and learning cognitive coping skills.

Session 6 – Dealing with Fears: Normalizing fears and learning new ways to deal with them and to create an inner sense of safety.

Session 7 – Dealing with Anger and Rage: Confronting anger and rage and expressing them in a controlled manner. Learning and practicing assertiveness.

Session 8 – Coping with Grief and Loss: Exploring grief and loss experiences and providing an opportunity to express these feelings within a safe context.

Session 9 – Building a Social Shield: Exploring social needs and ways to strengthen our support system. Learning to ask for help and to become more emphatic.

Session 10 – Boosting Your Self Esteem: Exploring self-image and the way its impact our coping styles. Learning to accept deficits and acknowledge strengths.

Session 11 – Turning Crisis into an Opportunity: Becoming aware of negative thought patterns and learning how to reframe them positively.

Session 12 – Seeking a better future: Exploring future dreams and fantasies and learning how to build a plan toward achieving them. Reviewing the program and providing an opportunity for closure.

Method

Setting and participants

This study was conducted from January to March 2006 in an all-male religious public secondary school in Beer Sheba, the largest southern city in Israel where several terror attacks occurred since 2000, the beginning of the latest Palestinian Intifada. The school is part of the 'National religious' school network under the auspices of the Ministry of Education where about 20% of the entire 1,000,000 Israeli school population is enrolled (Israeli Ministry of Education, 2008). This school network applies the school curriculum of the Ministry of Education as well as additional religion-oriented classes. In all these schools there is gender separation. It was decided to implement the program in the 7th and 8th grades as the program could not be incorporated into the curriculum of the higher grades. The program was introduced in the school curriculum. The Ethics committee of the Ministry of Education approved of the study.

The study was presented first to the principal, the guidance counselor and the school psychologist. Following their agreement, we spent a 3-hour session explaining the approach and its rationale to the 7th and 8th grade homeroom teachers and to other school personnel. We stressed the potential of the program to alleviate students' distress and to improve their academic functioning. In order to elicit their motivation, we promised to give them a certificate of treatment completion as well as the ERASE-Stress manual.

The principal sent letters to the parents outlining the goals and the nature of the program and asking for their consent to include their children in the program as well as to participate in the study. All parents agreed to include their children in the program and the parents who agreed to have their children participate in the assessment provided written informed consent to allow their children to complete the study questionnaires and to participate in two psycho-educational sessions.

Figure 1 shows the sampling and assignment of students to the active ES and control waiting list groups. From the entire 5 classes of the secondary school population of 147 seventh and eighth grade students, 114 students (77.5%) participated in the assessment of the program in either the ES ($n = 58$) or a waiting list (WL, $n = 49$). The remaining 33 students (22.5%) underwent the training or the control condition but were not assessed because their parents did not provide written informed consent or did not agree to participate in two psycho-educational sessions. None of the parents objected to their children participating in the intervention.

Procedure

Originally all five 7th and 8th grade homeroom teachers agreed to participate in the project and apply the ERASE-Stress program. After the training, we decided randomly (by coin flipping) to assign one of the 7th grade classes to the experimental ERASE-Stress condition (ES) and one class to a waiting list (WL) condition.

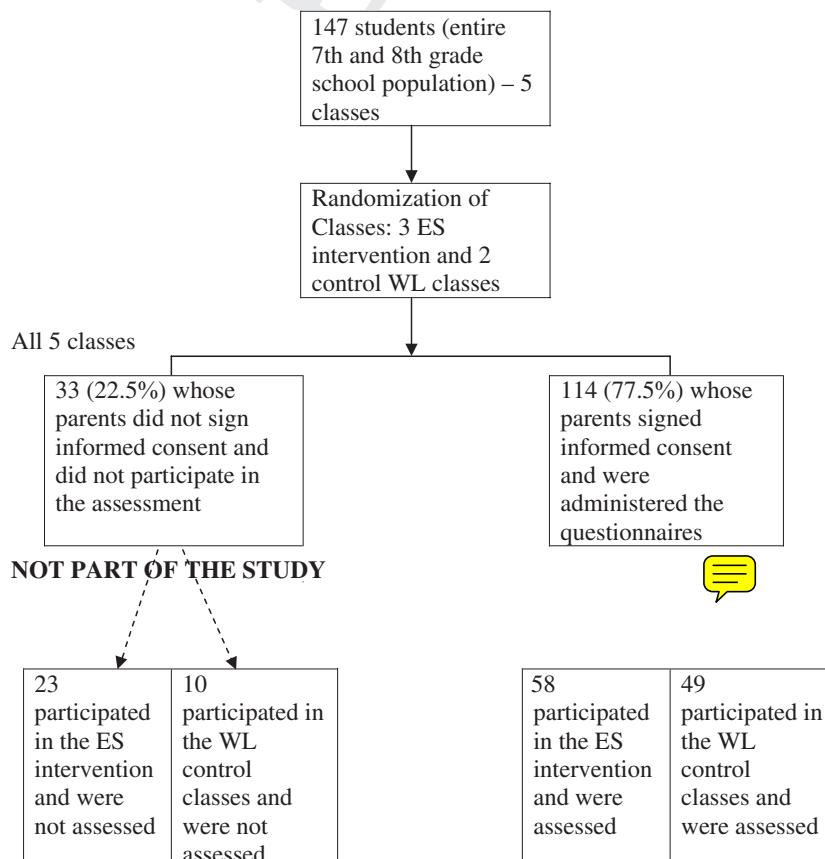


Figure 1 Student flow through the randomization, intervention and assessment protocol

Then we assigned (by coin flipping) two of the 8th grade classes to the ES and one to the WL condition. We thus assigned 3 classes to the ES (one from 7th and two from 8th grade) and 2 classes (one from 7th and one from 8th grade) to a waiting list (WL) for which the intervention would be applied the following year.

Both the intervention (ES) and control (WL) classes took place within the framework of weekly social study classes and lasted for an hour and a half. During these classes societal issues are presented and discussed with the homeroom teachers, including political, social and individual aspects of the Palestinian-Israeli conflict.

Each class contained between 28 and 31 pupils of whom 76–79% participated in the assessment. The students' sessions were on a weekly basis, and started immediately following the teachers' training.

At the beginning of the project, parents attended two psycho-educational sessions delivered by one of the trainers and the school's guidance counselor. These sessions focused on describing the program and its rationale. Parents learned what normal and abnormal reactions to traumatic stress are, and how to assist their children in coping with these conditions.

Blinding and questionnaire administration

The questionnaires were self-administered in the class setting about one week before and three months after the 12 training sessions. Trained clinicians blind to the participants' experimental condition were present during the administration in order to assist the students to complete the questionnaires and to monitor for adverse reactions due to the administration. According to their reports, apart from occasional difficulties in understanding some of the questions, no negative reactions were observed or reported by the students. The questionnaires were coded to protect confidentiality of the students and took about 30 minutes to complete.

Questionnaires

Apart from age and religious affiliation [religious (i.e., attempted to follow most of the religious rules such as wearing a cap in secular society), traditional (i.e., followed most of the religious rules of their respective ethnic traditions, usually only within the confines of their homes and places of prayer) and orthodox (i.e., lived in a religious community, and followed the religious rules socially as well as personally)], a structured questionnaire including questions drawn from several questionnaires measuring objective and subjective exposure to terrorism, PTSD symptomatology, functional impairment, somatic complaints, and fear was used.

Objective Exposure (Pat-Horenczyk et al. 2007). Students were asked to respond 'yes' or 'no' to seven statements about the degree and type of their exposure to terrorist attacks. Exposure level was defined as a three-level variable: (a) personal exposure (including indirect exposure or loss), i.e., being present at a terrorist attack with or without being physically injured or knowing someone close who was injured or killed

in such an attack; (b) near-miss, i.e., having been near the site when a terrorist attack was taking place, having been at the site before an attack or after an attack; and (c) no exposure, i.e., no exposure to a terrorist attack, excluding exposure through the media. Individuals with several exposures were placed with the most severe category. One positive response was regarded as meeting criterion A1 of PTSD (exposure to a traumatic event), as specified in DSM-IV-TR. A test-retest assessment on 142 students (Berger et al., 2007) calculated on a cumulative exposure index was found to be .85.

Subjective Exposure (Pat-Horenczyk et al., 2007). Significant distress, helplessness and horror experienced due to terror exposure was assessed with 3 questions regarding whether participants experienced any of those emotions, using a 5-point scale from 1 (did not experience this emotion at all) to 5 (experienced this emotion often). So as to avoid over-inclusion one score of at least 4 was necessary to fulfill criterion A2 (DSM-IV) of PTSD (Pat-Horenczyk et al., 2007). A two-week test-retest in a pilot study of ($n = 30$) (Berger et al., 2007) calculated on the total score was found to have $r = .84$, and criterion matching was found to be 100% identical in both measurements. In the present study we found Cronbach alpha to be .82.

UCLA PTSD Index for DSM-IV (Child version, Rodriguez et al., 1999). The severity of PTSD symptoms was assessed using the basic version of the UCLA PTSD Index for DSM-IV (Child version) (Rodriguez, Steinberg, & Pynoos, 1999). This is a 17-item self-report questionnaire, used in the assessment of PTSD and traumatic stress in children. Respondents indicate how frequently they experience a symptom using a 5-point Likert scale ranging from never experienced (0) to experienced very often (4). A Cronbach's alpha score of .90 was reported and test-retest reliability ranged from good to excellent (Steinberg et al., 2004). Internal consistency of the Israeli version was similarly highly satisfactory (Cronbach's Alpha = .90) (Pat-Horenczyk et al., 2007). The original version of the index was translated into Hebrew and back-translated and adapted to the Israeli reality (Schwarzwald, Weisenberg, Waysman, Solomon, & Klingman, 1993). In the present study we found Cronbach alpha to be .89.

A categorical measure of self-reported symptom criteria for PTSD was constructed by assessing whether the reported symptoms met the criteria required for a DSM-IV diagnosis. A score of at least 3 was necessary for an item to be considered both as symptom criteria for PTSD and a distinct symptom of traumatic stress. A PTSD severity score (sum of scores on all 17 items: range 0–68) was computed.

Functional impairment questionnaire. Functional impairment was measured using 7 items drawn from the Disc Predictive Scales (DPS), which were derived from the Child Diagnostic Interview Schedule (Lucas et al., 2001). The participants were asked to indicate whether they had experienced functional impairment due to terrorist attacks in social relationships (2 items), school performance (2 items), family relationships (2 items), and after-school activities (1 item) on a

5-point scale ranging from 1 (not at all) to 5 (very much). A functional impairment score was computed as the sum of all items. To meet the functional impairment criterion (F) for PTSD, a respondent was required to have reported 'much' or 'very much' impairment in at least one domain. The items were translated and back-translated from the original scale. The internal reliability of the functional impairment questionnaire was satisfactory (Cronbach's Alpha = .78).

Somatic complaints related to terrorism. These were assessed using five yes/no categorical items from the Disc Predictive Scales (DPS) (Lucas et al., 2001). These included stomach, respiratory problems, headaches, sleeping problems, excessive eating or appetite loss and 'other problems'. The items were translated and back-translated from the original scale. The internal reliability of the somatic complaint questionnaire was reasonable (Cronbach's Alpha = .64).

Brief Beck depression inventory (Brief BDI; Beck & Beck, 1972). This self-report measure shortens the BDI without loss of reliability or validity (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). The seven items are scored 0–3; higher scores indicate increased depression. Beck, Rial, and Rickles (1974) reported that the long form and the seven-item version correlate at .90. The original Beck Depression Inventory was officially adapted to Hebrew by Montag (1979) who performed a translation and back-translation and a validity and reliability assessment of the Hebrew version of the questionnaire. We used the 7 items found in the Brief BDI. In the present study the internal reliability of the functional impairment questionnaire was satisfactory (Cronbach's Alpha = .75).

Intervention

Teacher training and training application. Teacher training comprised of 7 three-hour sessions (21 hours) and was conducted by an experienced therapist familiar with the ERASE-Stress program. During the training the teachers were exposed to the full program including psycho-educational information, experiential exercises, and skills practice. Classroom simulations were conducted throughout the training where dissemination techniques and skills were practiced and evaluated. During the application of the program with the students, the teachers received 3 two-hour supervision sessions in which issues of application were raised and solutions were offered by the group and the trainer.

The ERASE-Stress intervention consists of twelve classroom sessions of 90 minutes in length, held weekly (Box 1). All sessions include homework review, warm-up introduction, experiential exercise, psycho-educational material, learned skill, and a closure exercise followed by a new homework assignment. The topics covered in the program are: the stress continuum, strengthening your personal coping style, being in your body, knowing your feelings, controlling your emotions with your mind, dealing with anger and rage, dealing with fears, coping with grief and loss, turning a crisis into an opportunity, boosting your self-esteem, building your support system and seeking a better

future. (More details of the intervention are presented in Box 1.)

Program reliability and consistency. During the training periods, the three participating homeroom teachers had three 90-minute supervision sessions with the author of the manual (RB) in order to maximize consistency in application of the protocol, as well as to deal with potential problems. Program adherence in the three classes was evaluated by ERASE-Stress trainers-in-training. They were familiar with the ERASE-Stress manual and observed the homeroom teachers during the application phase. They rated the teachers' adherence to the manual by means of a 6-point Likert scale applied to five areas: (1) whether the teacher adhered to the topics; (2) whether the exercises were followed; (3) whether the class members participated actively in the session; (4) whether the homework was discussed; and (5) whether the overall orientation of the course was upheld.

For all classes and all questions, responses selected were either 5 or 6 on the 6-point Likert-type scale, which itself ranged from 0 (*not at all as stipulated in the manual*) to 5 (*exactly as stipulated in the manual*).

Statistical analysis

All statistical analyses were performed with SPSS 15.0. Rates are reported here as raw numbers, and standard deviations accompany the means. The ES and WL groups pretest scores (baseline) on age, exposure and clinical variables were compared using two-tailed independent *t*-tests. To assess treatment effect we used a mixed design repeated measure ANOVA with the intervention as the between-group factor and time as the within-group factor. In addition, and in absence of data on normative samples, we used a Reliability Change Index (RCI; Jacobson & Truax, 1991) to assess clinical significance for the posttraumatic severity score.

We did not use a nested design because this would have significantly reduced the power of the analysis and because we subsequently did not find any differences in change scores between the classes on any of the measures within the ES intervention mode or the WL control classes. There were no missing data.

Results

Description of the population

Students were all male and of religious background. Average age was 13.05 years (range 12–14.5; SD = .65) old. Ninety-nine (92.5%) of the students were religious, 7 (6.5%) were traditional, and 1 (1%) was orthodox.

As far as the students' exposure to terror attacks was concerned, 3 (2.8%) reported that they had planned to be in the place where a terrorist attack occurred, 19 (9.3%) reported being there just before or just after an attack, 13 (12.1%) reported having been close to a terrorist attack when one occurred, 2 (1.9%) reported having been present during an

attack, 14 (13.1%) reported having known someone who was hurt in an attack, 11 (10.3%) reported having known someone who died in a terrorist incident, and none were personally hurt during a terrorist attack. In other words, 25.3% of the students reported personal exposure, 24.2% of them reported near-miss exposure and 50.5% reported no exposure of any kind. There were no differences in age and exposure variables between groups. The ERASE-Stress experimental and WL groups were also similar in every baseline variable. None of the control and three of the experimental group had full PTSD at baseline.

The pre-intervention assessments showed post-traumatic symptom severity to be at least as elevated as in one other study assessing the impact of terror on children's mental health in Israel (Berger et al., 2007) during roughly the same period, and assessed with the same questionnaire. Pre-intervention scores were also found to be much higher than in a large sub sample ($n = 312$) of children having had no exposure to terrorism in Israel (Pat-Horenczyk et al., 2007).

Treatment effects

Table 1 shows the mean scores on each of the outcome variables at each assessment time (first vs. second assessment) by group (ES vs. WL). Results show PTSD severity, functional problems, somatic complaints and depression scores to be all significantly reduced in the experimental ERASE-Stress group, compared to the waiting list group. Furthermore, after the training none of the 3 students in the ES experimental group remained with full-blown PTSD, while 3 students who did not have PTSD in the control group had PTSD after the waiting-list period. Based upon Jacobson and Truax's (1991) calcula-

tions of the Reliability Change Index (RCI), we found in the experimental group 44 (75.9%) students who improved from pre- to post test above the $SE = 1.96$ (criterion for reliable change when taking into account the scale's standard deviation and Cronbach alpha reliability), and 14 (24.1%) who improved less than $SE = 1.96$. In the control group 6 (12.2%) improved $> SE = 1.96$, $28 < SE = 1.96$, and 15 worsened with an SE score between -1.96 and $-.01$. Differences between the experimental and control group were found to be significant ($\chi^2 = 48.1$, $df = 2$, $p < .001$). Further analysis showed no impact of level of exposure or age on changes of the outcome measures over time. In the experimental condition, analysis comparing baseline measure and the differential scores (first minus second assessment) showed that students with worse scores improved more on all the outcome measures (Pearson r for depression $= .67$ ($p < .001$); for somatization $r = .52$ ($p < .001$); for functional problems $r = .72$ ($p < .001$) and for the number of posttraumatic symptoms $r = .63$ ($p < .001$).

Discussion

While the levels of exposure are relatively low when compared to the exposure levels experienced by students from Hedera (Berger et al., 2007), Jerusalem and nearby settlements (Pat-Horenczyk, 2004) and those in 7 major cities in Israel (Pat-Horenczyk et al., 2007), they are still rather high considering the fact that the town of Beer Sheva has not been heavily exposed to terror attacks. This finding thus supports the notion that the impact of terrorism in Israel may not be geographically specific and may relate to a compromised sense of safety experienced by many Israeli citizens (Bleich et al., 2003; 2006; Gelkopf, Solomon, Berger, & Bleich, 2008b).

Table 1 Comparison of ERASE-Stress (ES) ($n = 58$) and Waiting list control (WL) group ($n = 49$) on PTSD symptom severity, functional problems, somatic complaints, Beck Depression Inventory at first and second assessment three months after the 12-week trials

Measures	<i>M (SD)</i>		<i>F(1,106)</i>		
	First assessment	Second assessment	Main effect for Time	Main effect for Group	Interaction Time \times Group
PTSD severity (0–68)					
ES	23.6 (9.3)	12.7 (7.7)	100.68***	.66	49.42***
WL	20.4 (10.3)	18.5 (9.1)			
Functional problems (7–35)					
ES	12.6 (3.7)	10.3 (2.6)	30.85***	2.61	15.50***
WL	12.7 (4.2)	12.4 (4.4)			
Somatic complaints (0–6)					
ES	2.1 (1.3)	1.1 (1.1)	30.39***	.52	24.07***
WL	1.9 (1.2)	1.1.8 (1.5)			
Beck Depression (0–18)					
ES	3.1 (2.9)	1.5 (2.3)	13.06***	.03	18.66***
WL	2.3 (2.9)	2.5 (2.9)			

Note: *** $p < .001$.

More importantly, this study illustrates the efficacy of the ES school-based intervention in reducing stress-related symptoms in 7th and 8th grade students exposed to varying levels of terrorism. Students who received the ES standardized program showed significant reductions on all measures of PTSD symptomatology, depression, somatic complaints and functional problems compared to the control group three months after the completion of the program. There were no significant differences in benefits between 7th and 8th grade students. Additionally, while the terrorist threat continued to take its toll on the control group, none of the students in the ES group showed significant symptomatic worsening, suggesting that the intervention had no detrimental effect and that it may have had a resiliency- or resistance-strengthening impact.

A further interesting fact is that the intervention was especially helpful for those who showed higher levels of psychological distress. This finding is consistent with our previous study of the OTT program (Berger et al., 2007) and the application of the ES program with Sri-Lankan children victims of the Tsunami (Gelkopf, Ryan, Cotton, & Berger, 2008a; Berger & Gelkopf, submitted).

Clinical implications

There is growing recognition that schools should play a more central role in identifying traumatized children and in providing mental health services following traumatic events (Chemtob, Nakashima, & Hamada, 2002; Jaycox et al., 2006; Klingman, 1992). The ES program can be provided through local public schools by teachers who are acquainted with the students and parents, and can potentially reach diverse social and ethnic populations. The program has already been offered to Tsunami victims in Sri Lanka (Berger & Gelkopf, submitted) and for terror victims in Southern Thailand (Berger & Gelkopf, in preparation).

Personal participation of the teachers in the ERASE-Stress intervention is important. Pfefferbaum and her colleagues (Pfefferbaum et al., 2004) observed that, following 9/11, teachers in New York seemed to be at least as traumatized by the events as their students. The fact that the teachers personally experienced the training probably strengthened their coping abilities, thereby rendering them more efficacious in assisting their students.

We found no contraindication for students with various levels of posttraumatic symptom severity to participate in the ERASE-Stress program, a general intervention for trauma-exposed students. The program can then be followed by specialized interventions for those who do not show significant improvement.

Though ES was developed in order to deal with war and terror-related distress, it was reported by the teachers that it was also beneficial in reducing

students' posttraumatic stress reactions resulting from other traumas, such as the unexpected death of one of the students' parents due to a heart attack or an acrimonious divorce of the parents of another student. Further studies regarding broader implementation of the ES program are warranted.

Limitations and strengths

The use of one secondary religious school in one Israeli city can hardly make the results generalizable to all Israeli secondary school students, particularly for students who reside in areas that were more heavily exposed to war and terror. Secondly, since there were no follow-up assessments, duration of impact cannot be measured. Furthermore, since no active placebo comparison group or comparative psycho-educational program was used, we cannot determine whether the measured impact was intervention-specific.

Conversely, this study has significant strengths, including the fact that a waiting list control group was employed, the use of a structured program (Teacher's manual; Berger & Manasra, 2005) for enhancing students' resiliency with a fidelity check for the intervention, the use of clearly defined target outcomes and a comprehensive, reliable and valid assessment battery.

Furthermore, in addition to the significant improvements in students' symptoms and functional impairment scores, it was reported by the homeroom teachers and the principal that several students in the ES group both improved their academic performance and had fewer behavioral problems.

Future implications

Future research should assess the effectiveness of the ES program for larger and more diverse student populations of different ages, ethnic backgrounds and severity of posttraumatic symptoms. Furthermore, evaluation of the long-term impact of ES on stress-related symptomatology, academic performance, classroom behavior and use of health care as well as the changes in mood and behavior in the home may be instructive in modifying the program.

Conclusions

The proposed intervention, inspired by the public mental health approach, may indeed provide a promising model for dealing with students affected by war and the threat of terrorism.

Author note

The first and second authors contributed equally to this paper.

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Key points

- Children and adolescents exposed to terrorism are at high risk of suffering from distress-related symptomatology. Interventions usually fall within 2 categories: targeted interventions aimed at children showing symptoms of traumatic stress reactions; and universal interventions directed at all children irrespective of symptomatology.
- This study illustrated the effectiveness of the ERASE-Stress program, a 12-session x 90 minutes school-based, teacher-administered universal intervention geared to reduce and prevent posttraumatic reactions in secondary students.
- Posttraumatic symptomatology, depression, functional problems and somatic complaints was significantly reduced and was most effective in those with more symptomatology. Furthermore the intervention had no detrimental effects on any of the students.

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