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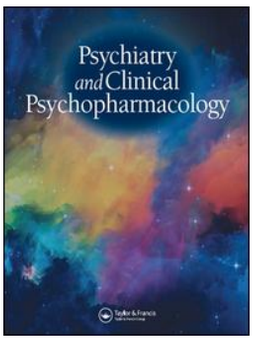

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Evaluation of a school-based, teacher-delivered psychological intervention group program for trauma-affected Syrian refugee children in Istanbul, Turkey

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ABSTRACT

Objective: The purpose of this study was to evaluate an innovative, protocol-based, group cognitive behavioral therapy (CBT) program delivered by trained teachers to reduce emotional distress and improve psychological functioning among the war-traumatized Syrian refugee students living in Istanbul.

Methods: A total of 32 participants, aged between 10 and 15 years (mean = 12.41, SD = 1.68) and mostly females (m/f = 12/20) were randomly selected from a sample of 113 refugee students based on their trauma-related psychopathology as reflected in the Child Post-Traumatic Stress – Reaction Index (CPTS-RI) total score. The treatment program was implemented by the teachers trained by the study team to deliver a weekly, eight-session, protocol-based intervention in school setting. The degree of the fidelity to the original program was tested via video-recordings and subsequent analyses of the sessions. Effectiveness of the intervention was evaluated by a pre-test/post-test comparison using the CPTS-RI, Spence Children's Anxiety Scale (SCAS), and Strengths and Difficulties Questionnaire (SDQ).

Results: All participants were accompanied minors. A significant proportion of them had either witnessed or been personally exposed to traumatic events. Statistically significant reduction in post-intervention evaluation was observed in the SCAS total score ($t = 3.73$, $p = 0.001$); CPTS-RI total score ($t = 2.72$, $p = 0.011$) and in the intrusive ($t = 3.88$, $p = 0.001$) and arousal ($t = 2.60$, $p = 0.015$) symptoms of the post-traumatic stress disorder (PTSD). In line with improvement in emotional problems as revealed in the anxiety and PTSD scales, the SDQ subcategory of the emotional problems was the only symptom area that showed a significant improvement ($t = 2.85$, $p = 0.008$). No significant change was seen in the SDQ subcategories of conduct ($t = 1.01$, $p = 0.32$), hyperactivity ($t = 1.30$, $p = 0.20$), peer problems ($t = .66$, $p = 0.51$), or in prosocial behavior ($t = 2.15$, $p = 0.039$). A significant proportion of the participants did no longer meet the diagnostic threshold for anxiety ($p = 0.001$) and PTSD ($p = 0.021$) after completion of the intervention. However, the post-intervention SDQ subcategories and the total SDQ score showed no significant difference as compared with the pre-intervention group.

Conclusions: To the best of our knowledge, this is the first interventional study reporting promising results from a school-based, teacher-led and culturally sensitive psychological intervention program for refugee children in Turkey. Such protocol-based interventions need to be examined in controlled designs and larger samples so that a well-established intervention can be created and disseminated to provide the psychosocial support for this vulnerable and traumatized population.

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Post-traumatic stress disorder; cognitive behavioral therapy; refugee; children; school-based

Introduction

Since the beginning of the civil war in Syria in 2011, Turkey has become the top hosting country with a total of 2.5 million refugees, more than half whom are minors under the age of 18 [1]. Around 45% of the 880,000 school-age refugee children attend schools in Turkey. Syrian refugee students can choose to attend either Turkish public schools or temporary education centers (TECs). A curriculum previously designed by the Ministry of Education of the Syrian Interim Government has been modified by the Turkish Ministry of Education and followed at the TECs, where education is provided in Arabic for primary and secondary grades. Majority of these students attend TECs, and preschoolers and the first grade students attend only Turkish schools through government's mandate [2].

Mental health problems such as PTSD, depression, anxiety, and behavioral problems among the refugee

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children are more prevalent than local populations and this fact does not change whether they are internally displaced [3,4] or externally displaced into low-income [5] or high-income countries [6]. Almost half of the children (48%) traumatized by war-related adverse events experience persistent symptoms of post-traumatic stress disorder (PTSD) [7], and depression and anxiety are also more prevalent in this group as compared to general population [8]. A number of risk factors related to traumatic experiences can adversely affect their psychological development and lead to development of psychopathology. While the type and intensity of exposure to adverse events matter, direct exposure to violence poses the most significant threat [9]. Total number of traumatic events [4], duration of exposure to them [10], witnessing torture/imprisonment or killing of the family members [11] have also been identified as the major adverse events associated with development of psychological problems.

Having conducted a successful Cognitive behavioral therapy (CBT)-based treatment program in a school setting, Ehntholt et al. [12] suggested creating innovative methods of providing treatment for young refugees with psychological problems, who had numerous barriers preventing them from accessing mainstream mental health services. Schools, where groupings are naturally formed, are ideal settings and group-based interventions in such a milieu decrease the children's sense of hopelessness and loneliness, provide a non-stigmatizing environment, hence function as correcting their problems [12]. In a meta-analysis of comparative outcome studies, Morina et al. [13] reported that psychological interventions could effectively reduce PTSD symptoms and comorbid depression in children and adolescents. CBT was the most studied and effective form of intervention, however experimental conditions were also more effective than control conditions at follow-up examinations [13]. In fact, any therapeutic intervention was reported to be more effective than control conditions [14].

In terms of the school-based interventions aiming to provide psychosocial support for refugee minors, Sullivan and Simonson [15], highlighting the limited body of existing research, reported that such interventions might be effective in reducing students' trauma-related symptoms and impairment. Creative expression and play therapies were reported to be commonly employed but they also provided the least consistent results. Although the use of writing, drawing, and dramatic interventions found some research-based support in terms of their effectiveness, their implementation requires trained therapists, which can be costly and not always feasible to implement in most school settings [15]. Interventions employing CBT as the treatment modality for refugee children provide more consistent outcome however, with exception of few studies [12,16], its implementation was conducted by trained therapies, which restricts its use in situations where resources are limited. In the study by Ehntholt et al. [12], group sessions were held within small classrooms and delivered by ethnic minority achievement group (EMAG) teachers, who had been trained to implement the program. In this study, educating children about the symptoms of PTSD and teaching them appropriate coping strategies was conducted using a manualized group program [12]. Using an eight-week school-based CBT program developed by bilingual teachers, school nurses, and nurse researchers for a sample of Southeast Asian refugee children, Fox et al. [16] reported significant improvement in depressive symptoms at post-intervention and further improvement at a 1-month follow-up. Taking into account children's cultural diversity and adaptation issues, this sensitively designed program emphasized skill building through developing coping strategies such as employing a decision-making process, sharing personal feelings and interactions with family members, role-plays, and drawings [16].

Help seeking-behaviors for their psychological distress are more limited among the refugee populations compared to general population [17]. On the other hand, due to several possible barriers such as cultural and linguistic difficulties, lack of information, understanding public systems, cost, and stigma [15] they may not receive the support they need, even when they are actively in search of it. Psychological problems among the forcibly displaced, refugee minors in Turkey have been neglected in research. The most recent data are mainly from explorative studies reporting prevalence of psychopathology. To the best of our knowledge, currently there is only one interventional study, in which a five-day art therapy intervention delivered by trained therapists, was reported to have significantly reduced trauma, depression, and trait anxiety symptoms conducted in a total of 35 Syrian refugee children (aged 7–12) in Istanbul [18].

The current intervention program has therefore been developed to provide these traumatized children and their teachers with a resource that they can easily access without having to rely on mental health professionals. In the present study, we aimed to examine the scope of the traumatic events and associated psychopathology among the Syrian refugee youth in Istanbul and to assess the effectiveness of an innovative, school-based, teacher-delivered group psychological treatment program.

Methods

Study participants and procedure

The present study is a prospective experimental intervention with a pre-test/post-test design and without the use of a control group. A total of 32 primary and

secondary grade Syrian refugee students attending a temporary education center (TEC) in the Fatih district of Istanbul were recruited. Randomization of the students from the sample was conducted by a computer program and blinded evaluators were used for the entry of the data to an Excel sheet. Intervention took place in their education center (school) and the intervention program was organized between April 2015 and July 2015. The rationale and clear explanation of the program was provided in information leaflets in Arabic and distributed to the parents, who gave informed consent for their children to participate in the study. All children provided verbal assent since work with children requires the assent of the subject when the consent of the parent or legal guardian is not possible. Psychometric assessment tools, validated in Arabic language, were completed at the school with guidance from teachers when needed, and Arabic-speaking members of the team provided translations. The study protocol has been approved by the Ethics Committee of the Bezmialem University (approval ID: 71306642-050.01.04).

Program description

The school was naturally nominated following a personal contact from the headmistress of the school to the Doctors Worldwide (DWW), which is an international non-governmental organization providing medical and humanitarian assistance to the disadvantaged and traumatized people all over the world. Seeking psychological support for their students, the head teacher reported severe and seemingly trauma-related psychological problems and signs of regressed behavior among the students. Following a few visits from the DWW psychosocial support team (DWW-PSST) attempting to deliver individual-based support with the aid of interpreters, it became apparent that the scale of the problem was beyond the capacity of our team and that the interpreter-guided interventions resulted in premature termination of the intervention. Unfortunately, despite several attempts we could not employ any Arabic-speaking psychologists that we hoped to integrate into the team. The current project, therefore, emerged from the efforts and motivation of group of professionals desperately seeking a solution to this existing crisis.

A manualized psychological support program was developed by the group leader (VG), who is a certified practitioner and trainer for cognitive behavioral therapies (CBT) and the other team members who had a field experience of providing psychosocial support for traumatized refugee children. This is an eight-session, psychological support group program based on principles of CBT, delivered by Arabic-speaking teachers, who underwent an intensive two-day training program provided by the DWW-PSST, and are supported with hourly supervision meetings following each session. Each session lasts about 70–90 minutes and each group consists of 8–10 students and two teachers. All sessions are video-recorded to assess fidelity to the original program and then analyzed immediately after the session. The program starts with explaining the cognitive model that distorted thinking styles, strong emotions and maladaptive behaviors create a vicious cycle that maintains the problem. All sessions start with a session-specific warm-up group activity and children are encouraged to choose a different partner each time if it is a pair activity. Relaxation techniques are imbedded into the first two sessions, which also included recognizing bodily signs of anxiety, maintaining a sleep hygiene, and so on. Sessions 2 and 3 involves psychoeducation and interventions to address strong emotions, maladaptive thinking style, and creating alternative explanations for depressive, anxious, and stress-related experiences. The main focus of the sessions 4, 5, and 6 is trauma and grief-related experiences, which also includes activities such as drawing a "safe place" and sharing its personal meaning with the group; constructing a trauma narrative in the format of a newspaper report to start with and then progressing onto adding emotional and cognitive components in the following sessions. Group-based and pair-conducted games that aim to acquire problem-solving strategies are involved in the Session 7 and the last session is a recap of the previous sessions and includes strategies for relapse management.

Psychometric instruments

Sociodemographic data tool

The tool, developed by the study team, included items examining sociodemographic characteristics, and the traumatic or stressful events experienced during the war or flee period. These are presented in Table 1.

The child post-traumatic stress - reaction index (CPTS-RI) [19]

CPTS-RI is the most frequently used self-administered 20-item measure developed to evaluate post-traumatic stress reactions of children from 6 to 17 years of age following exposure to a range of traumatic and stressful

Table 1. Sociodemographics and comparative statistics.

	Intervention group mean (SD)	Other subjects mean (SD)	Groups comparison
Age	12.44 (1.72)	12.91 (1.64)	$t = 1.36$ $p = 0.178$
Sex (M/F)	12/ 20	41/40	$\chi^2 = 1.59$ $p = 0.208$
CPTS-RI total	24.35 (12.80)	22.24 (14.45)	$t = 0.71$ $p = 0.478$
CPTS-RI intrusion	7.94 (4.26)	6.28 (4.79)	$t = 1.68$ $p = 0.096$
CPTS-RI avoidance	8.55 (5.50)	9.00 (6.45)	$t = 0.34$ $p = 0.732$
CPTS-RI arousal	7.87 (4.65)	6.96 (4.54)	$t = 0.94$ $p = 0.351$

Note: CPTS-RI, Child Post-Traumatic Stress - Reaction Index.

events. Symptoms of PTSD related to intrusion (7 items), avoidance (5 items), and arousal (5 items) are covered in three categories and it has three additional items. The items are rated on a 0–4 scale indicating how often each symptom is experienced during the recent month (ranging from 0 = *never* to 4 = *most of the time*). The theoretical maximum score is 80 and the cut-off value of 25 has been previously used to indicate moderate or severe PTSD [20]. The reliability of the scale has been successfully tested among Palestinian children [21,22].

Spence children's anxiety scale (SCAS) [23]

Evaluating symptoms associated with anxiety-related psychopathologies, the SCAS consists of 38 self-rated items on a scale ranging from 0 (never) to 3 (always) and has six subscales covering anxiety-related disorders (generalized anxiety disorder, social phobia, agoraphobia, separation anxiety, and physical injury fears) and obsessive compulsive disorder. The Arabic version of the SCAS was demonstrated to be a valid instrument in assessing anxiety [24]. Cut-off scores for psychiatric diagnoses used in the present study were based on values reported in a previous study [25].

Strengths and difficulties questionnaires (SDQ) [26]

This is a brief 25-item questionnaire that covers strengths, emotional difficulties related to depression and anxiety and behavioral problems such as aggression and hyperactivity. The cut-off score for the clinical level of psychological distress (the SDQ total score) in general population is 20; however, there are no established cut-off scores for the SDQ-S with refugee children. The following previously used cut-off scores for subcategories were used in the present study; emotional problems ≥ 7, conduct problems ≥ 5, hyperactivity ≥ 7, peer problems ≥ 6, prosocial behavior ≤ 4 [27]. The test–retest reliability, internal consistency, and criterion validity of the SDQ have been established in general child population [26] and among Palestinian children [28].

Statistical analysis

All variables were screened for accuracy of data entry, missing values, and homoscedasticity and all statistical analyses were performed by using the SPSS version 19.0 for Windows (IBM Inc., Armonk, NY, U.S.A.). Descriptive statistics were analyzed in terms of mean and standard deviations. Pre- and post-test changes in the frequency of diagnoses were analyzed with exact McNemar's test and symptom clusters were analyzed with *t*-tests for paired samples, and correlations were assessed with Pearson correlations. Violation of the normality assumption was checked by using the Kolmogorov–Smirnoff test, and the non-parametric equivalents were analyzed by using the Wilcoxon matched pairs signed-ranks test and Spearman's rank correlation. The alpha level of 0.05 was set up to indicate statistical significance.

Results

A total of 32 participants were randomly selected from a sample of 113 refugee students based on their CPTS-RI total scores. The participants were aged between 10 and 15 years (mean = 12.41, SD = 1.68) and mostly females (m/f = 12/20). Although the subjects that were not included in intervention did not have psychometric tools to compare with the study group's post-intervention scores, hence not a controlled study, there was no difference between the intervention group and the rest of the total sample in terms of age, gender and, CPTS-RI scores, as presented in Table 1.

All participants, excluding small missing data, reported that they were living with their family and majority of them had friends (82.8%) and relatives living in Turkey (61.3%). A significant proportion of them had either witnessed or been personally exposed to traumatic events, which are presented in Table 2.

Results of the study revealed that the post-intervention mean anxiety scores based on the SCAS total score ($M = 40.38$, SD = 20.59) was statistically lower than the baseline scores ($M = 53.28$, SD = 13.78, $t = 3.73$, $p = 0.001$). The post-intervention PTSD total score ($t =$

Table 2. Traumatic experiences during war or flee period, *n* (%).

Currently living with family, *n* (%)	Yes: 31 (100)	No: 0 (0)	
Have relatives living in Turkey, *n* (%)	Yes: 19 (61.3)	No: 12 (38.7)	
Currently have friends *n* (%)	Yes: 24 (82.8)	No: 5 (17.2)	
Someone important left in Syria *n* (%)	Yes: 26 (86.7)	No: 4 (13.3)	
Accompanying people wounded *n* (%)	Yes: 11 (35.5)	No: 20 (64.5)	
Seen wounded or dead people, *n* (%)	Yes: 17 (54.8)	No: 14 (45.2)	
Experienced cruelty or torture, *n* (%)	Yes: 10 (32.3)	No: 21 (67.7)	
Witnessed cruelty or torture *n* (%)	Yes: 14 (46.7)	No: 16 (53.3)	
Seen explosions or gun battle *n* (%)	Yes: 29 (96.7)	No: 1 (3.3)	
Left without food or shelter *n* (%)	Yes: 3 (9.7)	No: 28 (90.3)	
Left unaccompanied during war or flee *n* (%)	Yes: 0 (0)	No: 31 (100)	
Speaks Turkish *n* (%)	Yes: 3 (9.7)	No: 8 (25.8)	Some: 20 (64.5)
Satisfied with life in Istanbul, *n* (%)	Yes: 10 (33.3)	No: 5 (16.7)	Unsure: 15 (50)
Duration of time in Istanbul (months)	<12 m: 8 (40)	12–24 m: 9 (45)	>24 m: 3 (15)
Important people died, *n* (%)	Yes (1st degree): 4 (13.8)	Yes (other): 17 (58.6)	No: 8 (27.6)

Table 3. Pre- and post-intervention scores in self-report measures.

	N	Pre-test mean (SD)	Post-test mean (SD)	t	p
SCAS total	32	53.28 (13.78)	40.38 (20.59)	3.73	**0.001**
CPTS-RI total	30	23.90 (12.76)	17.63 (13.64)	2.72	**0.011**
CPTS-RI intrusion	30	7.93 (4.34)	4.83 (4.65)	3.88	**0.001**
CPTS-RI avoidance	30	8.20 (5.24)	7.13 (5.89)	1.10	0.280
CPTS-RI arousal	30	7.77 (4.70)	5.67 (4.83)	2.60	**0.015**
SDQ total	31	18.77 (4.28)	16.81 (5.41)	2.44	**0.021**
SDQ emotional problems	31	4.32 (1.89)	3.26 (2.77)	2.85	**0.008**
SDQ conduct problems	31	3.55 (1.34)	3.26 (1.41)	1.01	0.319
SDQ hyperactivity	31	5.74 (1.36)	5.32 (1.82)	1.30	0.205
SDQ peer problems	31	5.16 (1.46)	4.97 (1.89)	0.66	0.511
SDQ prosocial behavior	31	8.52 (1.26)	7.90 (1.81)	2.15	0.039

Note: SCAS, Spence Children's Anxiety Scale; CPTS-RI, Child Post-Traumatic Stress - Reaction Index; SDQ, Strengths and Difficulties Questionnaires.

2.72, $p = 0.011$) revealed a significant improvement ($t = 2.72$, $p = 0.011$) and a similar improvement was observed in the intrusiveness ($t = 3.88$, $p = 0.001$) and arousal ($t = 2.60$, $p = 0.015$) subcategories, although the change in the avoidance-related symptoms did not reach the statistically significant threshold. The SDQ scale has been used to define "caseness" (the degree to which the accepted standardized diagnostic criteria for a given condition are applicable to a given individual) in the psychiatric problems. In line with improvement in emotional problems as revealed in the anxiety and PTSD scales, the SDQ subcategory of the emotional problems was the only symptom area that showed a significant improvement ($t = 2.85$, $p = 0.008$). There has been no significant change neither in conduct ($t = 1.01$, $p = 0.32$), hyperactivity ($t = 1.30$, $p = 0.20$), and peer-relationships related problem areas ($t = .66$, $p = 0.51$), nor in prosocial behavior ($t = 2.15$, $p = 0.039$) (Table 3).

In order to analyze whether the subjects were still meeting the diagnostic threshold following the intervention, we used paired samples *t*-test to compare the total scores before and after the program. Participants did no longer meet the diagnostic threshold for anxiety ($p = 0.001$) and PTSD ($p = 0.021$) after completion of the intervention. However, the post-intervention SDQ subgroup scores and total score showed no significant difference as compared to pre-intervention group (Table 4).

Table 4. Participants not meeting diagnostic threshold following the intervention.

	Pre-intervention N (%)	Post-intervention N (%)	Group comparison p
Anxiety	29/32 (90.6%)	18/32 (56.3%)	0.001
PTSD	17/32 (54.8%)	8/32 (25.8%)	0.021
SDQ emotionality	4/31 (12.9%)	6/32 (18.8%)	0.687
SDQ conduct	7/31 (2.6%)	6/32 (18.8%)	1.000
SDQ hyperactivity	6/31 (19.4%)	6/32 (18.8%)	1.000
SDQ peer problems	11/31 (35.5%)	13/32 (40.6%)	1.000
SDQ prosocial	0/31 (0%)	1/32 (3.3%)	1.000
SDQ total	10/31 (32.3%)	8/32 (25%)	0.687

Note: PTSD, post-traumatic stress disorder; SDQ, Strengths and Difficulties Questionnaire.

Discussion

To the best of our knowledge, this is the first interventional study, reporting promising results from a school-based, teacher-led, and culturally adaptive psychological intervention program for refugee children in Turkey. A summary of the main findings of the present study is as follows: Firstly; participating students reported multiple traumatic experiences and severe problems in post-traumatic stress, emotional, and behavioral areas. Almost three-quarters of them had someone they care about were killed during the war; vast majority of them (88.7%) have their loved ones left in Syria; almost half of them (46.7%) had witnessed and 32.3% been personally subject to cruelty or torture; and more than half of them (54.8%) saw wounded or dead people. Problems that might be associated with poor adjustment such as; not speaking the local language (less than 10% can speak) and poor satisfaction with living conditions (only one-third said they were satisfied) are also present. Secondly, our results showed a clinically significant improvement in trauma-related and emotional symptoms at the post-test evaluation. The most significant reduction was observed in total anxiety score and the intrusive symptoms of the CPTS-RI ($p = 0.001$ in both). The current CBT-based intervention program is mainly designed to address anxiety, stress and trauma-related emotional difficulties, and improvement areas are therefore in accordance with the content and objectives of the intervention. Despite no significant change in symptom areas in peer problems, conduct, and hyperactivity-related problem categories of the SDQ, the emotional symptoms have significantly reduced, which is in line with reduction in SCAS and CPTS-RI total scores. It is important to emphasize that the present program is not a pure trauma-focused CBT program, as trauma specific work is only included in three sessions. However, this significant improvement in post-traumatic symptoms is, according to feedback from teachers and students, largely due to the therapeutic milieu that has been created in the school environment, where the teachers who had undergone similar trauma as their students had gained a better understanding of their own problems and that of students and acquired skills to deal with them, and due to the students' increased confidence in sharing their problems with their peers, teachers, and parents in and outside the sessions.

The proportion of the participants whose PTSD symptoms met the diagnostic threshold as measured by CPTS-RI dropped from 54.8% to 25.8% ($p = 0.02$). The most significant reduction was observed in

diagnosis of anxiety based on the SCAS total score. While 90.6% of the subjects met the threshold prior to intervention, the rate was still as high as 56.3%, although the reduction was statistically highly significant ($p = 0.002$). Although there have been a number of interventional studies reporting positive for traumatized children in school settings [29–32], majority of refugee children do not receive the psychological services they need [33]. There is a need to find a model of delivery that takes account of the wide range of needs that refugee children and their families present with [32].

The main strength of the present study is, in our opinion, its design in terms of making the best use of existing but limited resources and enabling the educators to gain skills that they can use outside of the scope of this project. Besides, the current study meets most of the criteria for quality analysis of methodological approaches in such studies as outlined by Cuijpers et al. [34]. A carefully designed and culturally sensitive treatment manual was implemented; the conductors of the intervention (teachers) underwent intensive training specific to the intervention; treatment integrity was checked by video recording of the sessions; participant selection was based on computerized randomization and entry of the data into an Excel sheet was conducted by blinded assessors.

The present study has certain limitations, some of which are owed to the methodological constraints. First, the sample size was small and there was no control group to compare the outcome with, hence a pre-test/post-test data analysis approach was employed. Second, the symptoms of PTSD or other psychiatric conditions were only tested with self-report questionnaires. Conjoint use of a semi-structured interview would have been the preferred approach; however, it should be born in mind that the language barrier was the main obstacle here. Parents were not actively included in the study in terms of incorporating parent sessions into the program and this appears to be one of the main constraints of the project. Finally, the lack of a follow-up evaluation in order to assess whether the gains of the program were preserved is another limitation.

Based on experience gained from implementation of this project and feedback from the teachers who had played the key role in the implementation of the program, we recommend that this type of work needs to be replicated in larger, controlled studies and that the such programs should also include support aimed toward the traumatized teachers.

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Disclosure statement

No potential conflict of interest was reported by the authors.

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