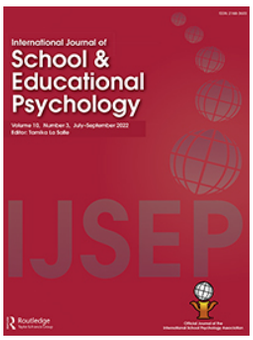

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Educational and psychosocial support for conflict-affected youths: The effectiveness of a school-based intervention targeting academic underachievement

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ABSTRACT

This study investigated the effect of a school-based and teacher-led psychosocial intervention that targeted academic underachievement among conflict-affected youths. We hypothesized that participants in the intervention would experience improved school functioning and reduced levels of stress-related symptoms after the intervention, in comparison to a control group. The study was carried out in Gaza, employed a randomized control trial design, and included 300 students between 9 and16 years of age. Students that completed the intervention reported improvement in all the domains measured after participation: better school functioning, a reduced level of stress-related symptoms, as well as long-term effects in the ability to self-regulate negative emotions, self-efficacy, better study skills, and a higher academic performance. The long-term effects were observed five months after the intervention was carried out. The implications for the implementation of psychosocial support for conflict-affected youth are discussed.

KEYWORDS

Academic underachievement; school functioning; traumatic stress; education in emergency; psychosocial support

War conditions and ongoing conflicts have a major negative impact on children and youths' lives and include mental health consequences (Charlson et al., 2019). It is well-documented that youths living in conflict-affected areas, who are consequently conflict-affected youths, experience multiple and on-going psychological traumas, and stressful situations (e.g., Dimitry, 2011). A systematic review of 83 studies revealed that students with cumulative or severe exposure to traumatic events were at significant risk of impairment in cognitive functioning and academic performance, and often experience social/emotional/behavioral problems (Perfect et al., 2016). Traumatic and cumulative stress are also negatively associated with youths' abilities to function in school (Blair et al., 2013; Bücker et al., 2012; Fernando et al., 2010; Lupien et al., 2018; Stene et al., 2018; Strøm et al., 2016).

The people of Gaza have been exposed to three major wars: in 2008–2009, 2012, and 2014. A study of the 2014 war showed that 99.1% of the students studied (N = 572: 12–18 years of age) had experienced at least one war-related traumatic event (El-Khodary & Samara, 2020). Examples of exposure included witnessing or hearing shelling by tanks, artillery or military planes (89.3%); witnessing neighbors' houses being destroyed (69.2%); and witnessing injury or killing (66.4%). One month after the war, 57.5% of these students met the criteria for post-traumatic stress disorder (PTSD), and 45.8% reported moderate to severe somatic symptoms. The students also reported cognitive symptoms and emotional symptoms (75.5% and 72.1%, respectively) as well as academic dysfunction (52%; El-Khodary & Samara, 2020). A review of research in Palestine found that the prevalence of conflict-related traumatic experiences correlated positively with the prevalence of mental, behavioral and emotional problems; furthermore, the prevalence of PTSD in children and youths varied between 23% and 70% (Dimitry, 2011).

Exposure to psychological trauma and stressful situations during childhood and youth have been found to affect neurodevelopment of the prefrontal cortex, hippocampus, and amygdala (Pechtel & Pizzagalli, 2011). These structures influence cognitive and emotional processes, as well as the executive functions that underlie academic function and achievement, such as the ability to concentrate, attention, memory, cognitive flexibility and perseverance. The hippocampus is sensitive to chronic stress (McEwen, 2000), and reduced hippocampal volume has been observed in adults who were exposed to severe psychological trauma during childhood (Bremner et al., 1997). Reduced hippocampal volume is associated with deficits in learning and memory capacity, as well as increased vulnerability to stress

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(Lupien et al., 2007). Lupien et al. (2011) found that 10-year-old children that were exposed to stress-related symptoms and depression demonstrated larger amygdala volume compared to children that were not exposed. An enlarged amygdala is associated with an increased risk of anxiety disorders, and a reduced ability to regulate negative emotions (Qin et al., 2014). The results of these studies demonstrate that the age range of when children and youths are in school is a crucial developmental period regarding psychological trauma and chronic stress, with potentially life-long consequences (Lupien et al., 2018).

Academic achievement or *performance* is defined as the extent to which students have achieved their educational goals, whereas *academic functioning* refers more to the cognitive process of learning. *School functioning* usually describes the overall situation including well-being, academic functioning, and achievement. *Academic under-achievement* is defined as a significant gap between the level of predicted academic achievement based on a child's age and intelligence and the actual level of academic achievement (Frick et al., 1991) and can appear after psychological trauma resulting from exposure to war-related traumatic events (Amone-P`Olak et al., 2014; Diab, 2011; Diab & Schultz, 2021; Husain et al., 2008). A national prevalence of academic underachievement in Gaza has not been established; however, a quantitative study indicates a prevalence of 18.2% among 6th grade students (Diab, 2011) and a qualitative study has been performed where teachers and school counselors estimated a prevalence between 18 and 22% (Diab & Schultz, 2021).

Given the high prevalence of stress-related and PTSD symptoms in conflict-affected youths, there is an urgent need to implement scalable mental health interventions to address this burden (Charlson et al., 2019). There are a variety of interventions for the prevention and treatment of post-traumatic stress and PTSD for people exposed to disasters and mass violence. For school-based interventions supporting the recovery of students who have been in emergencies, the literature distinguishes between universal interventions and indicated interventions for students with symptoms of post-traumatic stress. *Universal interventions* are delivered by teachers or paraprofessionals, often targeting traumatic stress. Socio-emotional learning (SEL) is a category frequently used as a part of a psychosocial support approach, often without a direct focus on the traumatic event itself. Examples of practical and evidence-informed guidelines are Psychological First Aid (PFA; Brymer et al., 2006) with a version adapted for schools (Brymer et al., 2012) and Skills for Psychological Recovery (SPR; Berkowitz et al., 2010). *Indicated interventions* are often led by professional health-care personnel targeting individual students or groups of students, which frequently include components of trauma-focused cognitive behavioral therapy (TF-CBT).

Several systematic reviews have been conducted on recovery interventions for children exposed to disasters and terrorism (e.g., Fu & Underwood, 2015: Pfefferbaum et al., 2014), for children affected by war and conflict (e.g., Jordans et al., 2016), and for school-based interventions for the reduction of PTSD symptoms (e.g., Rolfsnes & Idsoe, 2011). The reviews describe a variety of universal and indicated interventions, many suggesting promising effects with medium to high effect sizes. However, a lack of rigor and clarity in the description and implementation of the interventions, as well as missing study designs and reported results, are frequent in reviews and meta-studies (Fu & Underwood, 2015; Jordans et al., 2016; Pfefferbaum et al., 2014; Rolfsnes & Idsoe, 2011). To advance the field, future studies are advised to more clearly define and operationalize the therapeutic components, thus preparing them for empirical meta evaluation, so that findings and conclusions can be highlighted. Furthermore, aspects of intervention delivery should be explored more such as the inclusion of exposure measures for those receiving the intervention, and the optimal sequencing of therapeutic components (Pfefferbaum et al., 2014). There is a gap in the recovery intervention literature regarding teacher-led interventions for long-term underachieving students in conflict-affected populations of students.

The Better Learning Program level 2 (BLP-2: Norwegian Refugee Council [NRC], 2017) is a school and classroom-based, teacher-led universal psychosocial program, developed by the UiT – the Arctic University of Norway and the Norwegian Refugee Council (NRC). BLP-2 is based on universal preventive measures for traumatic stress reactions (Hobfoll et al., 2007) and components from cognitive behavioral therapy (CBT) consisting of: (1) psychoeducation and normalization of stress reactions, (2) relaxation techniques, (3) coping skills enhancement, (4) garnering social support and (5) parent involvement. In addition, BLP-2 has a goal of strengthening the following educational measures: (6) improving pedagogical study skills, (7) improving academic and general self-efficacy, and (8) modifying the teacher role by providing more appraisals and understanding of how traumatic and cumulative stress can cause academic underachievement. Designated teachers are trained in BLP-2 and administer the intervention to a small group of 10 academic underachieving students over a period of five weeks. The intervention consists of five structured sessions of 45 minutes that are performed during the school day; all the sessions are described in a detailed handbook (NRC, 2017).

Objectives for the present study

The main objective of the present study was to evaluate the effect of BLP-2. This program was not empirically evaluated earlier, but the NRC has produced evaluation reports from students and teachers. Based on these reports (NRC, 2017) and earlier published findings of the medium to high effect of post-disaster recovery programs (Jordans et al., 2016; Rolfsnes & Idsoe, 2011), we hypothesized that students participating in BLP-2 would report improved school functioning and reduced stress-related symptoms compared to a control group. We also wanted to explore whether academic performance could be improved for the BLP-2 students in the following semester, compared to the national average grades in the same school areas. To our knowledge, improved academic performance has not been documented before in relation to after school-based interventions supporting the recovery of students in emergencies.

Method

Context

The current study was conducted from October 2018 to April 2019. This was a period with a high level of conflict, and when there were weekly violent protests along the border separating Israel and the Gaza Strip. The high-level conflict period started on March 30, 2018, with the Great March of Return. In October 2018, The United Nations Relief and Work Agency for Palestine Refugees (UNRWA) withdrew part of the international staff from Gaza after a series of incidents that affected personnel and threatened their safety. Up to March 2019, there were several hostile incidents on the Gaza Strip, including several rocket attacks with exchange of fire between Israel and Hamas, resulting in wounded civilians and damaged houses (Occupied Palestinian Territory [OCPA], 2019).

Participants

Three hundred students (age 9–16: mean = 12.01: 150 females and 150 males) from the Gaza strip participated in the study. Students were recruited from schools enrolled in BLP-2 based on the following inclusion criteria: (1) exposure to potentially traumatic event(s), and/or (2) a high level of cumulative stress, which was identified based on a screening tool. The screening tool identified exposure to traumatic event(s), self-perceived stress levels, senses of fear and anger, sense of safety, ability to concentrate and general well-being. The tool consisted of 19 yes/no-items and the cutoff point to qualify for participation was set at 10 or more yes items. The screening tool and cutoff point were based on NRC (2019). A further requirement for inclusion was (3) a significant drop in academic performance that had lasted for more than two months. This was identified by grades in Arabic and math, collected over a period of six months. The teacher of the students confirmed that the student was achieving below their intellectual potential. (4) The students were recruited from 30 different pre-selected elementary schools that had been chosen by the Ministry of Education (MoE) in Gaza to be the first group of schools to start the implementation of BLP-2. Two hundred students (N = 200) from 20 schools were selected for BLP-2 and 100 students from 10 schools were put on a wait list (the control schools). The schools were located in the northern, western, and eastern governorates of the Gaza Strip and the schools were equally distributed between these areas. The areas represent populations with similar socioeconomic backgrounds.

Due to an administrative error, 25 registered BLP-2 respondents were deleted from the data set. This resulted in exactly 300 respondents in the data set, and a gender balance. However, the deleted respondents were the last to be registered, so this should not have systematically affected the reliability of the study.

Design

A randomized control trial (RCT) was conducted with two conditions (BLP-2 and the control schools), three tests (pre and post BLP-2: T1 and T2, and a follow-up test after 5 months: T3), and within subjects-design. T1 and T2 were conducted in October-December 2018, while T3 was carried out in the BLP-2 schools in April 2019, in order to investigate the possible long-term effects of the program. The schools were randomly assigned to be either BLP-2 schools or control schools, and the control schools started implementation of BLP-2 after the study. Both the intervention and the study design were informed by a pre-trial (NRC, 2019) and a qualitative study exploring underachieving students in the Gaza Strip (Diab & Schultz, 2021).

Measures

Self-report measurement tools

A self-report measurement tool was administered to the students on three different occasions: pre BLP-2 (T1), post BLP-2 (T2), and five months post BLP-2 (T3). The tool was developed by the authors and consisted of 17 items investigating six different domains: well-being (two items), self-regulation (three items), self-efficacy (four items), executive function/study skills (five items), future hope (one item), and self-perceived

academic functioning (two items). These domains are focus areas in BLP-2, and the items are inspired by standardized tools, such as the Self-Efficacy Survey (SES; Panc et al., 2012) and Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997), but were adapted to capture the main focus areas of BLP-2, as well as reflecting cultural feasibility and language considerations. The items were expressed as statements and were answered by ticking one of four boxes: Never, Rarely, Often, and Always. The tool is included in Appendix 1. An Arabic version of the tool is available upon request. Reliability assessments and psychometric testing results of the tool are presented in Forsberg et al. (2022, under review). Preliminary results indicated medium reliability and did also suggest that the measured domains did not include enough items.

Stress-related symptoms were indicated by symptoms of traumatic stress, measured with the Children's Impact of Events Scale-13 (CRIES-13). This is a 13-item self-report that measures intrusion (4 items), avoidance (4 items), and arousal (5 items), all characteristic of PTSD, according to the DSM-5 (American Psychiatric Association [APA], 2013). The items are rated on a four-point scale (Not at all, Rarely, Sometimes, Often) and summed to form three subscales. Psychometric data suggest satisfactory internal consistency (Cronbach alphas for Intrusion = 0.70, Avoidance = 0.73, Arousal = 0.60, and Total = 0.80). The reliability for the arousal scale is below a Cronbach's alpha of 0.70, indicating medium reliability on this scale (Yang & Green, 2011). A combined score (Intrusion + Avoidance) of 17 or more has been found to correctly classify PTSD in 90% of child survivors of a disaster (Yule, 1992). Exposure to traumatic war-related events during the study period was documented with an exposure scale at T2. The exposure scale included eight war-related events, and the students were asked to respond with a yes/no answer if they had experienced the events during the last month. Due to age range of the participants, the complicity of the tool was carefully considered both in terms of language compatibility, number of items and response options. CRIES-13 has been validated earlier in a war context with children exposed to traumatic events in the same age range (Smith et al., 2001) so the tool was designed to match the measures of stress-related symptoms.

Objective measure: academic performance

Grades in the two major subjects, Arabic and math, were collected for each student over a period of 18 months. The first set of grades was collected in December 2017 and June 2018. This set were used to assess students for the BLP-2 criteria. The second and third set of grades were collected after BLP-2 in January 2019 and after the final exams in June 2019. Grades for January 2019 and June 2019 were only collected from the BLP-2 group for comparison with the regional average grades from fifth to 10th grade in all the schools in the same educational areas (North, West, and East Gaza).

Procedure

A pilot study (N = 50) was conducted to ensure the validity of the self-measure tool and the protocol procedure. After the pilot study, the participating teachers and NRC staff met for a focus group discussion where they considered the terminology of the items, cultural feasibility, and whether the language had the appropriate complexity for the targeted age range. The focus group meeting resulted in minor changes of wording in the Arabic version of the tool before the RCT was conducted.

BLP-2 teacher training and implementation

Certified BLP-2 master trainers from the NRC delivered a three-day training-the-trainers program to 11 school counselors from the MoE Counseling and Special Needs Department in Gaza. The NRC master trainers had received psychological and/or educational education at the MA level, and had training and in-depth experience in implementing BLP-2. The school counselors from MoE had received BA-level psychology education and were experienced in providing psychosocial support for students and teacher supervision and training. After completing the training-the-trainers program, the MoE counselors gave a two-day training course for 20 selected teachers from 20 schools in Gaza.

During the five-week implementation period of BLP-2, each school received four follow-up visits from the MoE counselors, and a weekly visit from the NRC master trainers. The follow-up visits were to check for quality and fidelity. The logs and fidelity data from the training-the-trainers program (provided by the NRC), teacher training (provided by the MoE), and the follow-up visits were not analyzed for the purposes of this study.

School and student selection

Selection of schools was based on the MoE assessment of the most conflict-affected areas where students were assumed to be most exposed to the conflict. The schools' headmasters, teachers, and counselors were informed about BLP-2 and research participation, in a written document and in several meetings with the MoE and NRC. The selection of students in each school was made by a designated teacher and a school counselor, in

cooperation with the main teacher of each class. Selection criteria were followed, as described above. Parents of the selected students were briefed on BLP-2 and how they could support their children at home. They were also informed about and consented to, participation in the study. Teachers met with parents on two separate meetings. All selected and invited students completed the program, and fewer than 20 students missed two or more sessions.

Ethics approval

The study was approved by the Palestinian Health Research Council and the Norwegian Center for Research Data. The MoE approved the study protocol and procedure. Written informed consent for participation in both the intervention and the study was obtained from the parents. The students gave informed oral consent to participation. In 11 cases, either the student or their parents declined to participate.

Statistical analysis

All statistical analyses were performed in SPSS 25.0 (SPSS, Inc., Chicago, IL). Descriptive statistics were collected for gender, age, and outcome variables (mean score, max and min score, and standard deviation). Within-conditions mean scores for T1, T2, and T3 were analyzed with a repeated-measures analysis of variance (ANOVA) with two conditions (experimental and control) and three tests (i.e., within-condition mean scores). Grades in Arabic and math were analyzed with repeated measures analysis of variance (ANOVA) with three tests representing T1, T2, and T3 (June 2018, January 2019 and June 2019). All outcome variables were explored as dependent variables, and conditions (BLP-2 school/control school) and tests (pretest, posttest/follow-up test) were explored as (factors) independent variables. Theoretically interesting and significant effects were followed up by contrast analysis. The least significant difference (LSD) adjustments were used for multiple comparisons. Effect sizes were calculated with Cohens *d* and interpreted according to Cohen (1992): Cohens *d* = 0.2 is a small effect size, 0.5 is a medium effect size, and 0.8 is a large effect size. Predictors for school functioning were explored with multiple regression analysis. School functioning (the combined measure of self-reported academic functioning and well-being) was explored as a dependent variable. Self-regulation, self-efficacy, executive functions/study skills, hope and stress-related symptoms, and academic performance were explored as independent variables. A significant *p*-value of .05 was set for all analyses.

A protocol was formed for data screening and entering procedure was protocolled by the first author. Manual data entry in Excel was performed by the NRC staff who had several years of experience in monitoring and evaluation procedures. All analysis was performed by the first author (JTF) and interpreted together with the second author (JHS).

Results

Descriptive statistics for subjective outcome variables

Three hundred students (150 females and 150 males) participated in the study. The mean and SD for age were 12.01 and 1.67, respectively. The mean and SD for grade were 6.64 and 1.72, respectively. Descriptive statistics for school type, gender, age, and grade are presented in Table 1. Descriptive statistics for the subjective outcome variables in T1, T2 and T3 are presented in Table 2.

Subjective outcome measures

Well-being

The overall model on self-reported well-being was significant (F = 27.63, p < .00). The students in the BLP-2 schools reported significantly higher well-being in T2 (mean = 4.63, SD = 1.12) compared to T1 (mean = 3.37, SD = 1.24) (p < .00). There was a reduced effect of the intervention after five months, as there was a significant change in well-being from T2 to T3 (mean = 4.34, SD = 1.19) (p = .02), but the students did report significantly higher well-being in T3 compared to T1 (p < .00). There was no significant change in well-being in the students from the control schools from T1 (mean = 4.11, SD = 1.21) to T2 (mean = 4.16, SD = 1.18) (F = .163, p = .69). The difference in well-being between the BLP-2 schools and the control schools is illustrated in Figure 1.

Table 1. Descriptive statistics for gender, age, and grade.

BLP-2 students *N = 200 (90:110):				
	Mean	Min	Max	SD
Age	11.79	9	16	1.53
Grade	6.48	5	9	1.47
Control students N = 100 (60:40):				
	Mean	Min	Max	SD
Age	12.45	10	17	1.86
Grade	7.02	5	11	2.10
Total N = 300 (150:150):				
	Mean	Min	Max	SD
Age	12.01	9	17	1.67
Grade	6.64	5	11	1.72

*N = (female: male).

Table 2. Descriptive statistics and effect size for each outcome variable.

	BLP-2 students (N =200):				Control students (N = 100):				
	Mean	Min	Max	SD	Mean	Min	Max	SD	Cohens *d*
Academic functioning T1	3.46	1.50	6.00	.99	3.60	1.50	6.00	.99	
Academic functioning T2	4.55	1.50	6.00	.95	3.70	1.50	6.00	.99	0.84
Academic functioning T3	4.16	0.00	6.00	1.10					0.64
Well-being T1	3.64	.50	6.00	1.24	4.11	1.50	6.00	1.21	
Well-being T2	4.63	1.00	6.00	1.12	4.16	1.50	6.00	1.18	0.60
Well-being T3	4.34	0.00	6.00	1.19					0.40
Self-regulation T1	4.48	1.67	9.33	1.65	5.04	1.67	9.33	1.71	
Self-regulation T2	6.68	2.33	9.33	1.62	5.04	2.33	9.33	1.75	0.99
Self-regulation T3	6.30	0.00	9.33	1.85					0.94
Self-efficacy T1	7.26	3.25	12.75	2.10	7.60	3.25	12.75	2.14	
Self-efficacy T2	9.54	4.25	13.00	2.01	7.67	3.35	13.00	2.39	0.78
Self-efficacy T3	8.71	0.00	13.00	2.18					0.67
Executive functions/study skills T1	10.43	5.40	16.80	2.65	11.34	5.20	16.80	3.10	
Executive functions/study skills T2	13.02	3.60	16.80	2.62	10.88	4.20	15.80	2.72	0.79
Executive functions/study skills T3	12.16	0.00	16.80	2.70					0.64
Hope T1	2.41	0.00	4.00	.98	2.67	1.00	4.00	1.00	
Hope T2	3.16	0.00	4.00	.84	2.68	1.00	4.00	.91	0.53
Hope T3	2.74	0	4.00	.97					0.34
Stress-related symptoms T1	31.34	4.08	60.38	11.53	30.63	.00	60.38	13.23	
Stress-related symptoms T2	21.23	0.00	56.38	10.64	29.53	5.00	58.38	13.52	−0.61
Stress-related symptoms T3	27.70	0.00	46.31	8.11					−0.48

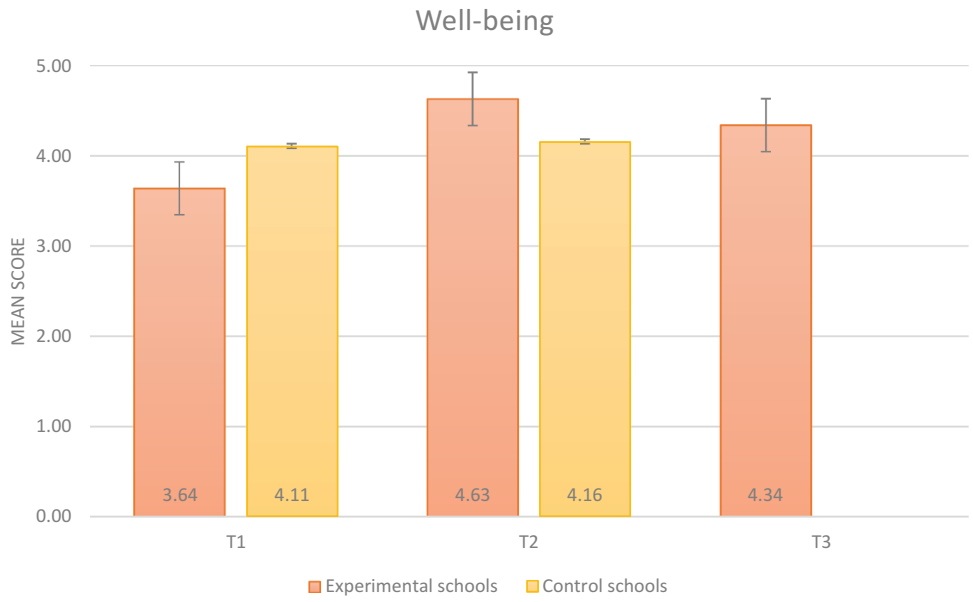

Figure 1. Well-being.

Self-regulation

The overall model on self-reported self-regulation was significant (F = 66.73, p < .00). The students from the BLP-2 schools reported significantly higher scores in self-regulation in T2 (mean = 6.68, SD = 1.62) compared to T1 (mean = 4.48, SD = 1.67) (F = 17.20, p < .00). There was no significant change in self-regulation from T2 to T3 (mean = 6.30, SD = 1.85) (p = .78), suggesting a long-term effect of the intervention on self-regulation. In the control schools, there was no significant change in self-regulation from T1 (mean = 5.04, SD = 1.71) to T2 (mean = 5.04, SD = 1.75) (F = .00, p = .99). The difference in self-regulation between the BLP-2 schools and the control schools is illustrated in Figure 2.

Self-efficacy

The overall model on self-reported self-efficacy was significant (F = 38.98, p < .00). The students in the BLP-2 schools reported significantly higher scores in self-efficacy in T2 (mean = 9.54, SD = 2.01) compared to T1 (mean = 7.26, SD = 2.09). There was no significant change from T2 to T3 (mean = 8.71, SD = 2.18) (p = .12), suggesting a long-term effect of the intervention on self-efficacy.

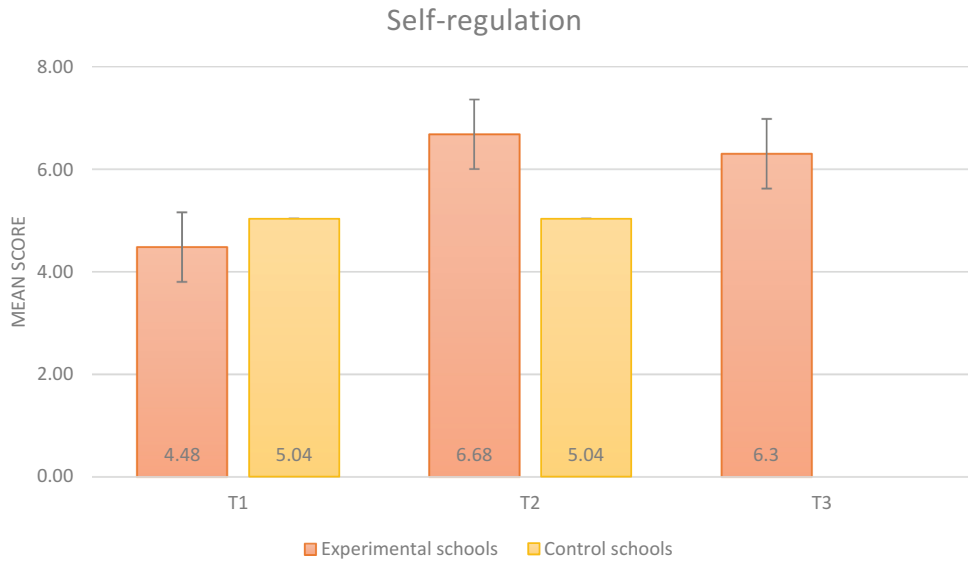

Figure 2. Self-regulation.

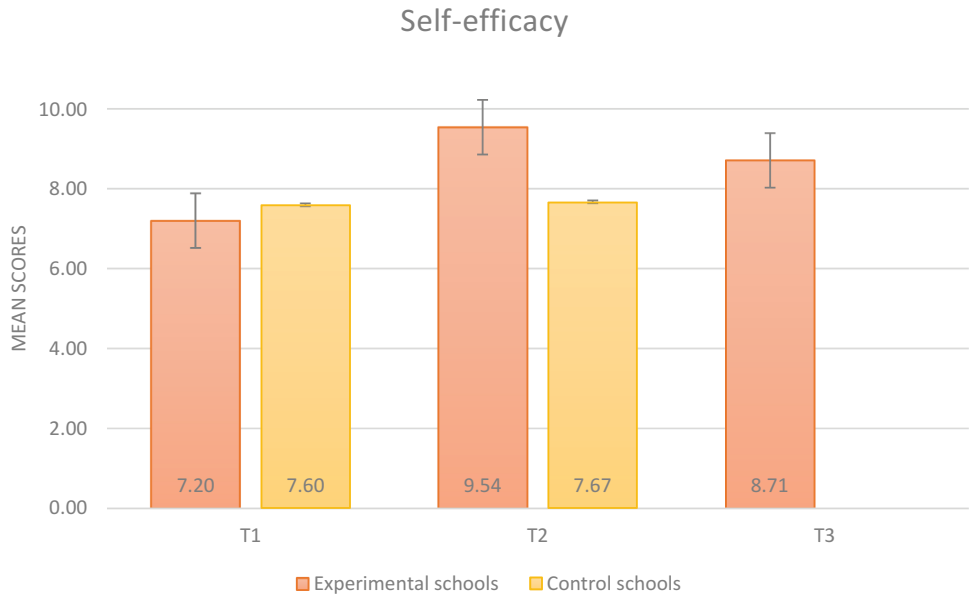

Figure 3. Self-efficacy.

There was no significant change in self-efficacy from T1 (mean = 7.60, SD = 2.14) to T2 (mean = 7.67, SD = 2.34) (F = .09, p = .76) in the students from the control schools. The difference in self-efficacy between the BLP-2 schools and the control schools is illustrated in Figure 3.

Executive function/study skills

The overall model of self-reported executive function/study skills was significant (F = 31.80, p < .00). The students from the BLP-2 schools reported significantly higher scores in executive function/study skills in T2 (mean = 13.00, SD = 2.61) compared to T1 (mean = 10.43, SD = 2.65) (p < .00). There was no significant change from T2 to T3 (mean = 12.16, SD = 2.70) (p = .017), suggesting a long-term effect of the intervention on executive function/study skills. In the control school, the students reported no significant change in executive function/study skills from T1 (mean = 11.34, SD = 3.10) to T2 (mean = 10.88, SD = 2.72) (F = 2.70, p = .10). The difference in executive function between the BLP-2 schools and the control schools is illustrated in Figure 4.

Hope

The overall model on self-reported future hope was significant (F = 17.98, p < .00). The students from the BLP-2 schools reported a significantly higher level of

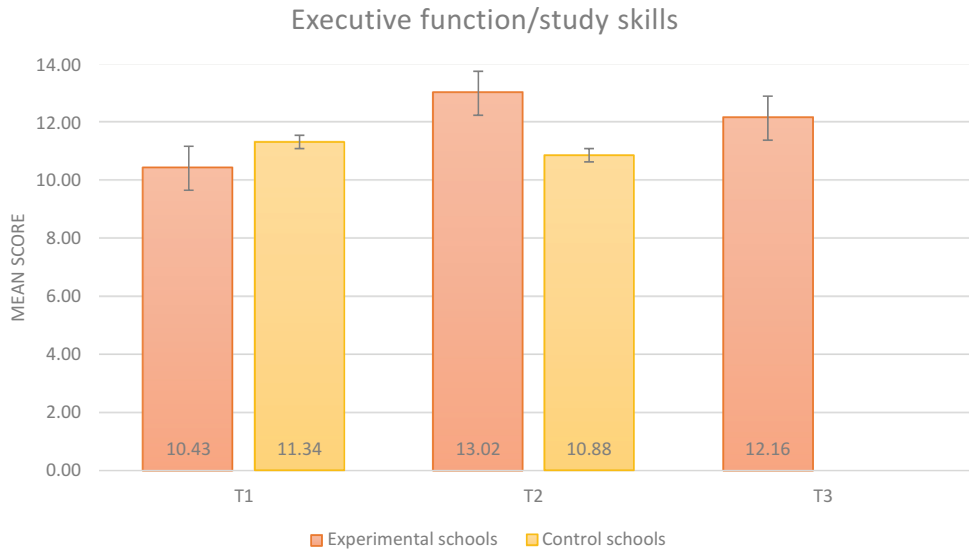

Figure 4. Executive function/study skills.

hope in T2 (mean = 3.16, SD = .84) compared to T1 (mean = 2.41, SD = .98). The effect of the intervention vanished after five months, as the students reported significantly lower scores in their perception of future hope in T3 (mean = 2.74, SD = .97) compared to T2 (p = .063), and there was no difference between T1 and T3 (p < .00). In the control schools, there was no significant change in future hope from T1 (mean = 2.67, SD = 1.00) to T2 (mean = 2.68, SD = .91) (F = .01, p = .921). The difference in future hope between the BLP-2 schools and the control schools is illustrated in Figure 5.

Stress-related symptoms

In the current study, 66% of the students (N = 186) report a combined score of 17 or more on the CRIES-13 intrusion + avoidance scale (min = 17.00, max = 35.63, mean = 23.84, SD = 4.81), suggesting a PTSD prevalence of 52.66% in the included sample.

The overall model of stress-related symptoms was significant (F = 43.26, p < .00). The students in the BLP-2 schools reported significantly reduced stress-related symptoms in T2 (mean 21.22, SD = 10.65) compared to T1 (mean = 31.34, SD = 11.53). The effect of the intervention was reduced after five months, as the students reported

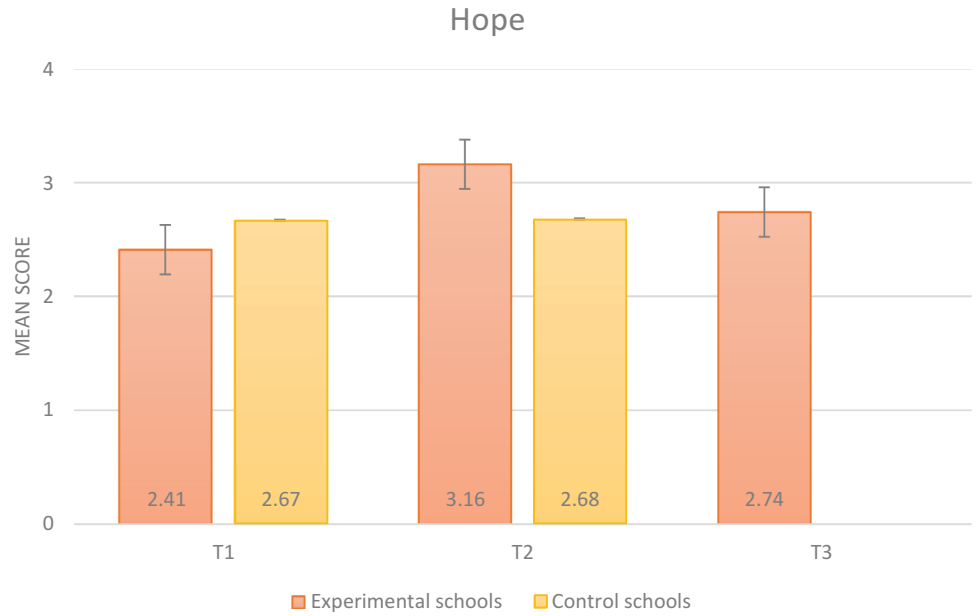

Figure 5. Hope.

higher stress-related symptoms in T3 (mean = 27.70, SD = 8.11) compared to T2 (p < .00). There was no significant change in stress-related symptoms in the students from the control schools from T1 (mean = 30.63, SD = 13.23) to T2 (mean = 29.53, SD = 13.52) (F = .608, p = .74). The difference in stress-related symptoms between the BLP-2 schools and the control schools is illustrated in Figure 6.

Self-perceived academic functioning

The overall model of self-reported academic functioning was significant (F = 40.20, p < .00). The students in the BLP-2 schools reported significantly higher academic functioning in T2 (mean = 4.55, SD = .95) compared to T1 (mean = 3.46, SD = .99) (p < .00.) There was a significant change in academic functioning from T2 to T3 (mean = 4.16, SD = 1.10) (p = .002), suggesting a reduced effect of the intervention after five months, but the students did report significantly higher academic functioning in T3 compared to T1 (p < .00). There was no significant change in academic functioning in the students from the control schools from T1 (mean = 3.60, SD = 1.00) to T2 (mean = 3.7, SD = 1.00) (F = 1.23, p = .27). The difference in self-reported academic functioning between the BLP-2 schools and the control schools is illustrated in Figure 7.

Predictors for school functioning

Multiple regressions were used to explore whether the BLP-2 domains were predictors for school functioning. Self-regulation, self-efficacy, executive functions/study skills, hope and stress-related symptoms, as well as academic performance was found to predict school functioning both pre-BLP-2 and post-BLP -2. The results indicated the predictors combined explained 43% of the variance (R^2 = .430, F (8, 287) = 27.01, p <.001) in the pretest and 54.5% of the variance (R^2 = .545, F (8, 290) = 43.46, p <.001) in the posttest. The results of the multiple regressions and the impact of each predictor are illustrated in Table 3.

Effect sizes

Effect size was calculated for each domain in the BLP-2 group. All effect sizes from T1 to T2 were above d = 0.5, indicating a medium to high effect in all domains. The domains that obtained the highest effect sizes were self-regulation (d = 0.99) and academic functioning (d = 0.84). Executive functions/study skills (d = 0.79) and self-efficacy (d = 0.78) were both slightly below the 0.8 cut off for a large effect. Stress-related symptoms obtained an effect size of −0.61, indicating a medium effect. Hope obtained the lowest effect size of 0.53.

All effect sizes were reduced in T3. Self-regulation obtained a large effect size in T3 (d = 0.94). Self-efficacy (d = 0.67), academic functioning, and executive functions/study skills (both d = 0.64), were reduced from a large to medium effect after five months. Stress-related symptoms (d = −0.48) were slightly below the 0.5 cutoff for a medium effect in T3. Well-being (d = 0.40) and hope (d = 0.34) were

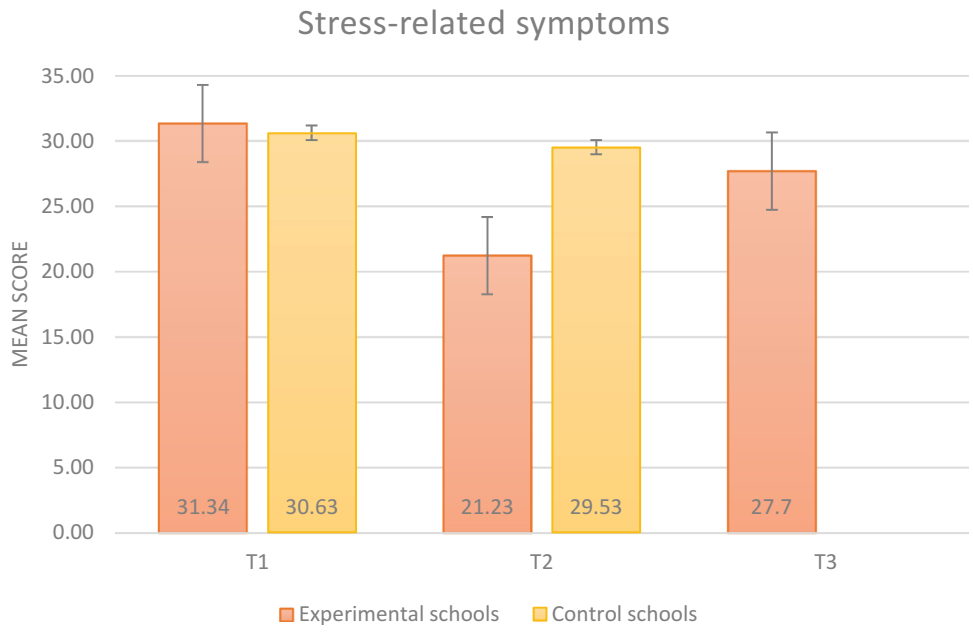

Figure 6. Stress-related symptoms.

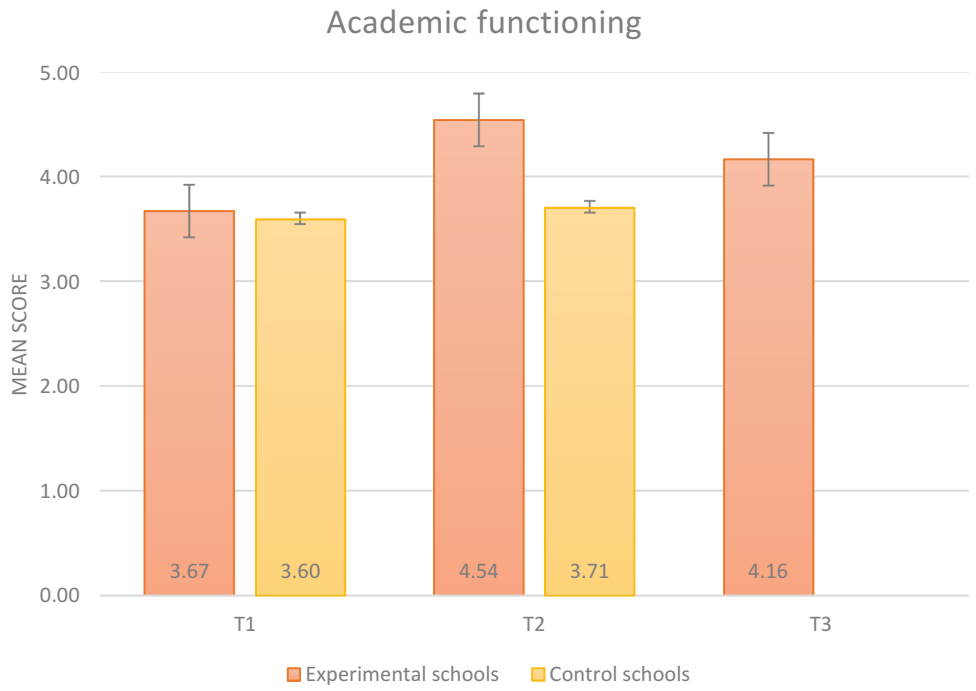

Figure 7. Academic functioning.

Table 3. Predictors for school functioning.

Predictors pre BLP2	β	t	*p*
Self-regulation	.163	3.135	<.001
Self-efficacy	.280	5.141	<.001
Executive functions/ study skills	.334	6.769	<.001
Hope	.064	1.290	.198
Stress-related symptoms Intrusion	−.014	−.233	.816
Stress-related symptoms Avoidance	.070	1.356	.176
Stress-related symptoms Arousal	−.054	−.929	.354
Academic performance	.045	.998	.324
Predictors post BLP2	**β**	**t**	***p***
Self-regulation	.208	3.755	<.001
Self-efficacy	.306	5.490	<.001
Executive functions/ study skills	.296	5.727	<.001
Hope	.071	1.495	.136
Stress-related symptoms Intrusion	.000	−.006	.995
Stress-related symptoms Avoidance	.016	.363	.717
Stress-related symptoms Arousal	−.007	−.171	.864
Academic performance	.088	2.191	.029

reduced from medium to medium/low effect sizes after five months. All effect sizes are presented in Table 2.

Exposure to traumatic war-related events

The mean number of war-related traumatic events during the study period was 4.7 events (SD = 1.74) for each participant. Only one participant reported no events. Males were exposed to more events than females, with 5.04 (SD = 1.70) and 4.36 (SD = 1.72) events, respectively. All war-related traumatic events and the numbers in the sample that were exposed to these events are presented in Table 4.

Objective outcome measure

Academic performance in Arabic and math

Grades in Arabic and math were collected from the BLP-2 group together with the national average grades from fifth to 10th grade in all the schools in the same educational areas (North, West and East Gaza, N = 73,522) over a period of 18 months from December 2017 to June 2019. The grade system in Gaza assesses the students by rating then from 0–100 in each subject.

Grades from the BLP-2 group that were collected from December 2017 and June 2018 were used to assess students for BLP-2 participation, and the mean drop in grades for these students in this period was 6.97 points (SD 1.552) in Arabic and 7.07 points (SD 1.589) in math (N = 200). Grades from June 2018 represent the grades pre-BL2-, the grades from January 2019 represent, the grades post-BLP-2 and the grades from June 2019 were

Table 4. War-related traumatic event.

War-related traumatic event	N (females/ males)	Valid Percent
I have heard bombing	274 (140/ 134)	91.3%
I have seen bombing	188 (86/102)	62.7%
I have watched TV showing bombing or injured people	242 (119/ 123)	80.7%
There has been bombing in my neighborhood	144 (66/78)	48.0%
I know people that have been injured	189 (85/104)	63.0%
I know people that were killed	152 (63/89)	50.7%
I have lost my house	39 (18/21)	13.0%
I know people that have lost their house	182 (77/105)	60.7%

collected to explore development in academic performance over time. The grades from the BLP-2 group were compared to the national grade average collected from the same period. Descriptive statistics for academic performance are presented in Table 5.

The overall model of academic performance in Arabic ($F = 1394.28$, $p < .00$) and math (5483.87, $p < .00$) was significant. The BLP-2 group had significantly reduced performance in both subjects compared to the national average grades in the same area ($p < .001$). The BLP-2 group improved their grades in both Arabic from June 2018 (mean = 61.77, SD = 19.06) to June 2019 (mean = 65.64, SD = 17.45), and math (mean = 59.51, SD = 18.30 and mean = 63.02, SD = 15.17, respectively). The national average grades sample did not show any change in grades in either Arabic (mean = 70.57, SD = 17.36 and mean = 70.20, SD = 18.18, respectively) or math (mean = 65.00, SD = 17.09 and mean 64.92, SD = 16.60, respectively). Academic performances are illustrated in Figures 8 and 9.

Table 5. Descriptive statistics for academic performance.

	BLP-2 students *N = 200 (90:110):				National grades average N = 73,522			
	Mean	Min	Max	SD	Mean	Min	Max	SD
Arabic Dec 2017	68.74	0	100	20.61				
Math Dec 2017	61.77	0	100	19.06				
Arabic June 2018	66.58	0	100	19.89	70.57	22	96	17.36
Math June 2018	59.51	0	98	18.30	65.00	25	98	17.09
Arabic Jan 2019	63.65	14	94	16.85	68.60	17	99	17.57
Math Jan 2019	64.29	35	97	15.15	63.90	28	94	15.77
Arabic June 2019	65.64	12	97	17.45	70.20	5	95	18.18
Math June 2019	63.02	16	100	15.17	64,92	5	95	16.60

*N = (female: male).

Discussion

The current study investigated the short- and long-term effects of BLP-2 on well-being, self-regulation, self-efficacy, executive functions/study skills, hope, stress-related symptoms, self-perceived academic functioning, and academic performance. The self-report measure revealed significant improvements in all domains. The improvements were still significant for self-regulation, self-efficacy, and executive function/study skills after five months. The improvements in well-being and academic functioning were reduced after five months, but still significantly higher compared to the pretest. The improvement in hope was diminished after five months. Stress-related symptoms were significantly reduced post-BLP-2, but the symptoms increased again after five months. The grades in both Arabic and math improved in the semester that BLP-2 was implemented compared to the national grade average in the same educational areas.

The learning goals of BLP-2 are based on the principles of Hobfoll et al. (2007) for the prevention and reduction of traumatic stress reactions. The principles are to foster a sense of (a) security, (b) calm, (c) self- and collective efficacy, (d) connectedness, and (e) hope. Several studies from Gaza have addressed the high prevalence of PTSD, and the need to reduce stress reactions in children and youths (e.g., Dimitry, 2011; El-Khodary & Samara, 2020; Thabet et al., 2008). In the current study, the mean number of exposures to war-related events was 4.7 over a period of three months, and the prevalence of PTSD was found to be 52.66%. By addressing the principles of reducing traumatic stress reactions, the goal was to reduce stress-related symptoms

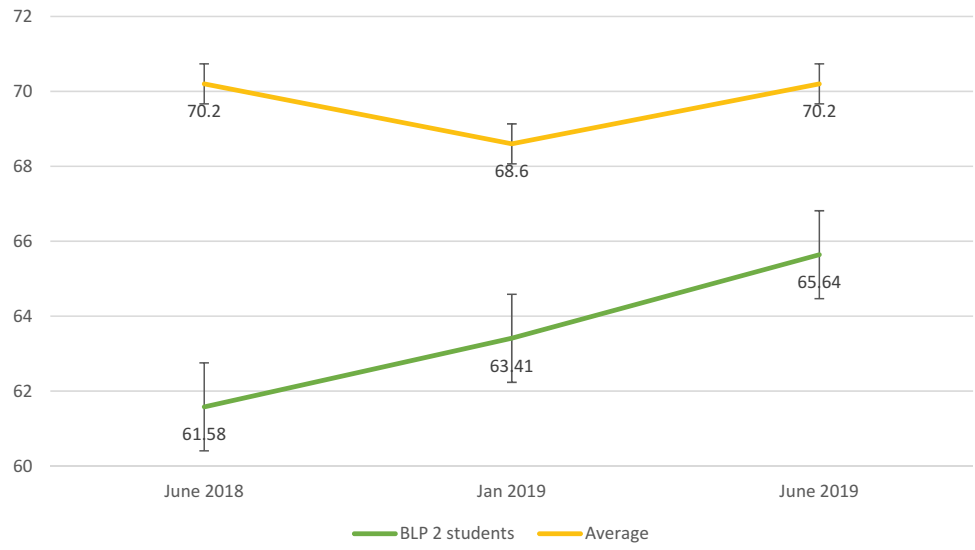

Figure 8. Academic performance in Arabic.

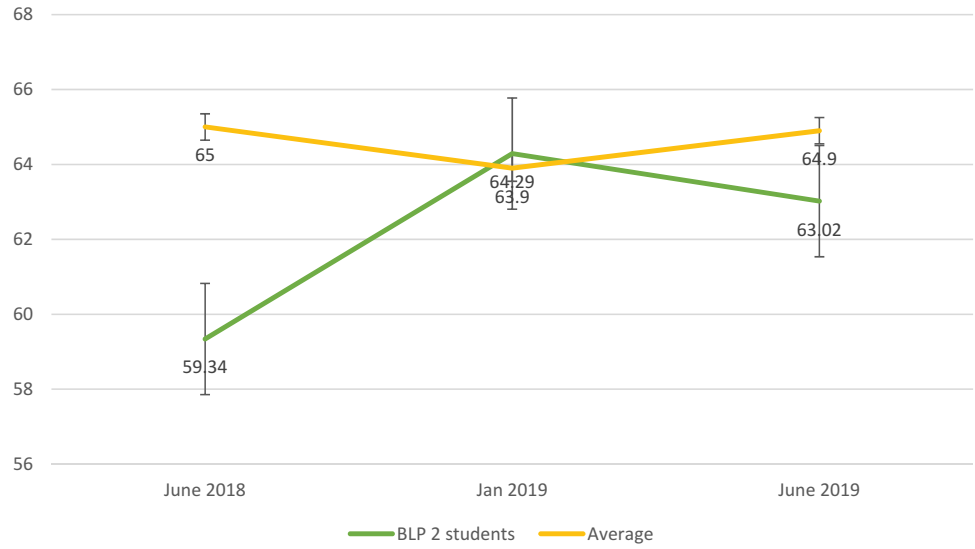

Figure 9. Academic performance in math.

in youths. The effect size of BLP-2 on reducing stress-related symptoms was found to be $d = -0.61$, suggesting a medium effect size. This effect size is consistent with other trauma recovery programs for children. Rolfsnes and Idsoe (2011) performed a meta-analysis that included 19 studies of trauma recovery programs for children that applied several similar PTSD and stress management approaches to BLP-2. They found an overall effect size of $d = 0.68$ in reducing PTSD/stress-related symptoms.

The main approach to reducing stress related symptoms in BLP-2 is a CBT and problem-focused process that emphasizes psychoeducation in normalizing reactions to psychological trauma and cumulative stress, as well as strategies for intrusive memories and hyperarousal. These are all well-documented stress management approaches in a series of trauma recovery programs for children (Fu & Underwood, 2015; Jordans et al., 2016; Rolfsnes & Idsoe, 2011). In addition, BLP-2 also applies other evidence-based methods to cope with stress, such as relaxing and breathing techniques, mindfulness, and physical exercise (Varvogli & Darviri, 2011).

BLP-2 applies a trauma-specific and problem-solving coping approach to identify and deal with stress-related symptoms. This is a frequently used approach to cope with psychological distress (e.g., Khamis, 2015; Stranislawski, 2019). Problem-solving coping targets the causes of stress with an assertive and practical approach, actively focusing on how to cope with the negative emotions and reactions associated with a stressful situation (Stranislawski, 2019). Problem-solving coping draws on inner resources and has been found to be highly effective in coping with traumatic stress-related symptoms (Khamis, 2015). Due to the effectiveness of this approach, should problem-solving coping be the first choice for coping strategies for traumatic stress-related symptoms (Stranislawski, 2019). A second strategy that is also commonly used is the emotion-focused approach, which emphasizes and manages emotions related to the stressors. This includes seeking emotional support and venting emotions (Folkman & Moskowitz, 2004). The emotion-focused approach is, however, found to be less effective than the problem-solving approach in the treatment of PTSD symptoms in children and youths, and is also associated with an increased risk of additional distress in children, due to their lack of cognitive and emotional capacity and developmental level (Khamis, 2015).

There was a medium effect size in the present study of BLP-2 on reducing stress-related symptoms. After five months, the effect size was reduced. This suggests that stress management for children and youths in Gaza needs to be maintained over time when the goal is to reduce stress-related symptoms and PTSD prevalence in the young population.

In addition to reducing traumatic stress reactions, BLP-2 also targets academic under-achievement by emphasizing enhanced pedagogical skills. The cognitive-affective theory of learning suggests that negative emotions influence cognitive processes and inhibit learning (Hascher, 2010) and positive emotions facilitate learning (Knörzer et al., 2016). Hence, the ability to regulate negative emotions, such as fear, anxiety, and stress, and to facilitate a sense of general well-being and hope, are important in teaching conflict-affected youths to promote their learning abilities. Khamis (2013) proposed hope as a protective factor for school functioning. Children with high hope generally have more cognitive

and motivational strategies to achieve desired goals, which are positively correlated with higher academic achievement (Snyder et al., 2002). Moreover, there are fewer school dropouts (Worrell & Hale, 2001).

BLP-2 also targets pedagogical skills by enhancing self-efficacy and executive functions/study skills. Self-efficacy has been established as the strongest predictor for academic performance in two different meta-analyses that together examined over 7000 articles (Richardson et al., 2012; Robbins et al., 2004). Executive functions/study skills, such as the ability to initiate and plan school- and homework, execute academic tasks, and to persevere in class or when doing homework are also all factors associated with higher academic performance (Boulzaboul et al., 2020).

The youths in this study reported most improvement in self-regulation (d = 0.99), self-efficacy (d = 0.78), and executive functions/study skills (d = 0.79) after BLP-2. These were also the domains where improvement was self-reported after five months. The students were taught and trained in specific tasks and exercises when addressing these domains. While practicing the tasks, the students experience a sense of accomplishment as well as showing the ability to take control over, and change a difficult situation, both of which are emphasized as key therapeutic factors in dealing with traumatic stress reactions (e.g., Hobfoll et al., 2007).

Hope was also improved after BLP-2, but the effect reverted to the previous level after five months. The sense of hope was fluent, difficult to address, and variable dependent on the ability to cope. This suggests that teachers and students need to maintain their focus on stimulating hope to obtain long-term improvements in these domains.

Several school-based interventions exist that address recovery after traumatic exposure, such as war-related experiences, political conflict, and natural catastrophes, for instance, a hurricane or tsunami. Several of these programs are presented and reviewed in meta-analyses (Fu & Underwood, 2015; Jordans et al., 2016; Rolfsnes & Idsoe, 2011). Jordans et al. (2016) stated that a CBT approach was the most effective one in the studies that were included. BLP-2 has several similarities to other CBT approach programs, but there are also two distinctive differences between BLP-2 and other school-based recovery programs: (a) BLP-2 also address school functioning and (b) focuses on integrating the intervention into the teacher's role.

BLP-2 was found to be effective in all domains including that of school functioning (well-being, self-perceived academic functioning and academic performance). It appears that the largest effect sizes were found in self-regulation, self-efficacy, and executive function/study skills; maintenance of the effect sizes over time supported self-perceived academic functioning. This was confirmed by the multiple regression analysis. Self-regulation, self-efficacy, and executive functions/study skills were found to be the most important predictors in school functioning. By strengthening these domains in BLP-2, the predictors were found to increase to total variance explained from 43% pre BLP-2 to 54.5% post BLP-2. Self-regulation, self-efficacy and executive function have also previously been found to enhance academic functioning and academic performance (Richardson et al., 2012; Robbins et al., 2004).

BLP-2 also enhanced academic performance, as the students got significantly higher grades in both Arabic and math over the period when BLP-2 was implemented. The national grade average for students in the same areas did not change over this period. The final grades were also collected two months after T3. This suggests that the students maintained their ability to regulate negative emotions, self-efficacy, and study skills over this period.

Strengths and limitations of the study

In emergency contexts, such as in Gaza, it is challenging to facilitate help and support due to limited health care resources. Benefiting from the resources that already interact with youths increases the opportunity to facilitate help. This study has documented significant effect sizes in all measured domains and improved academic performance, with the use of limited resources: five sessions of 45 minutes over five weeks. The short implementation time and employing teachers as resources increases the possibility of administering BLP-2 to all underachieving students in Gaza.

Another strength of the study was the high focus on fidelity during the implementation of BLP-2. The NRC made sure of a thorough follow-up process during the implantation period, and the participating schools received several visits and meetings with the BLP master trainers. The high focus on fidelity was to ensure that all the participating schools implemented BLP-2 according to protocol procedure and to guarantee reliable measures.

The context and the high level of conflict during this study can be considered as both a strength and a limitation of it. The youths experienced a high level of cumulative stress and exposure to several traumatic war-related events just before and during the study period. This can be considered a strength because the effect of BLP-2 was explored within extreme circumstances and in a challenging context. Despite the circumstances, the BLP-2 students experienced

improvements in school functioning and reduced stress-related symptoms. On the other hand, the context can also be considered a limitation because the conflict can possibly contribute to variables that are not possible to control.

Research in emergency areas must also achieve a balance between humanitarian and scientific principles. The recruitment process of schools and students in this study has probably affected study generalizability. The schools (both BLP-2 schools and control schools) were not recruited to the study based on random selection but based on the MoE assessment of the most conflict-affected areas in Gaza, where students were assumed to be most exposed to the conflict. The schools were further randomly assigned to either BLP-2 or control schools. The students were recruited and selected according to the inclusion criteria but followed their school in terms of participating in the BLP-2 or control group. The recruitment process in this study is a typical example of the conflict between humanitarian principles in an emergency and the principles of scientific validity. The selection of schools was in line with the general guidelines of best practice (World Health Organization [WHO], 2019), but probably caused a validity issue in the study.

A limitation of the study is the medium reliability of the explored domains. The preliminaryreliability results indicated that Cronbach`s alpha did not obtain acceptedcut-off level (0.70) for any of the domains. Based on these results the domainswere further edited and processed, and tested in a full-scale psychometrictesting study which resulted in accepted reliability for the domains (Forsberg et al. 2022, under review).

A second limitation of the study is the simplicity of the ANOVA analysis that has been conducted. Only gender, age and grade were collected as demographic data of the sample which limited the opportunity to control for individual differences in the sample, such as family background, socioeconomic status, living situation, number of siblings, mental health status, and so on. These are variables that could affect the results, and in future studies individual differences should be included as variables in the analysis.

Conclusion

This study explored the effect of BLP-2, a school- and classroom-based, teacher-led, short-term psychosocial and educational program, which aim to reduce stress-related symptoms, improve study skills and improve school functioning among academically underachieving youths living in ongoing conflict. We found the intervention to be successful, as the youths reported improvement and medium to large effect sizes in all the measured domains: self-perceived academic functioning, well-being, self-regulation, self-efficacy, executive function/study skills, stress-related symptoms, and hope. Several domains showed a lasting effect five-months later. The BLP-2 students also improved their academic performance measured in both Arabic and math grades in the following semester. The high effect sizes of a short-term intervention were found to be sufficient to support underachieving students to get back onto a positive learning track with improved school functioning.

Implications for practice and further research

The findings indicate that five sessions over five weeks was sufficient to reduce stress-related symptoms and improve future hope, but not sufficient to maintain a lasting effect beyond five months when living with ongoing conflict. This indicates that these specific domains should be integrated into ordinary teaching for all students, and possibly provided as regular booster sessions for stress-affected students. The encouraging effect of a short-term intervention being teacher-led and fully integrated into the teacher role is a promising way to support conflict-affected youths and should be further explored in practice and research. This study should be replicated in the Palestinian context with a three-group experimental design, including an experimental group, control group, and active control group, as well as in other types of emergency contexts.

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Disclosure statement

BLP was developed by UiT, The Arctic University of Norway and Norwegian Refugee Council (NRC). The second author has led the development of the intervention that underpins this study. However, BLP is distributed free of charge and is not subject to commercial use. The authors have no further conflict of interest to disclose.

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Data availability statement

The data that support the findings of this study are available upon application to the corresponding author.

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Appendix

3EA | EDUCATION IN EMERGENCIES EVIDENCE FOR ACTION

Improving Study Skills

Gaza, 2018

NRC
NORWEGIAN REFUGEE COUNCIL

By participating in filling out this questionnaire, you help us learn more about the best way for students to learn study skills. The University of Tromsø, Norway and Norwegian Refugee Council use the information in a research project.

Participation is voluntary and all information is kept anonymous. You do not write your name on the questionnaire. All students get a number. Your answer is private and will not be shared with parents or your school.

In about a month the training is over and you will get a similar questionnaire to fill out once again.

I will now read several questions for you and you tick the box that has the most correct answer.

Thank you for participating!

ID-number

Section A

Listen to the teacher read the questions below and tick the box that most closely applies to you.

1. **I can easily concentrate in class.**

   □Never □Rarely □Often □Always

2. **I am able to do my best at school.**

   □Never □Rarely □Often □Always

3. **I feel safe, calm and relaxed in school.**

   □Never □Rarely □Often □Always

4. **When I feel angry, I can calm myself down.**

   □Never □Rarely □Often □Always

5. **When I feel sad, I know what to do to feel better.**

   □Never □Rarely □Often □Always

6. **I have friends to play with at school.**

   □Never □Rarely □Often □Always

7. **When I am scared, I can calm myself down.**

   □Never □Rarely □Often □Always

8. **I believe things will turn out well in the future.**

   □Never □Rarely □Often □Always

Section B

Listen to the teacher read the questions below and tick the box that most closely applies to you.

9. **I can manage to solve difficult problems if I try hard enough.**

   Never Rarely Often Always

10. **It is easy for me to stick to my aims and accomplish my goals.**

    Never Rarely Often Always

11. **If I am in trouble, I can think of a solution.**

    Never Rarely Often Always

12. **I can handle whatever comes my way.**

    Never Rarely Often Always

Section C

Now the teacher will ask you few questions about your study behaviors. Listen to the teacher read the statements and for each statement, tick the box that best shows how often you do the thing mentioned in the statement.

13. **I ask for help from my teacher when I do not understand the school work.**

    Never Rarely Often Always

14. **I write down the homework to avoid forgetting it.**

    Never Rarely Often Always

15. **I do my homework without being asked or reminded by anyone.**

    Never Rarely Often Always

16. **I keep working on my homework even it is difficult.**

    Never Rarely Often Always

17. **I ask for help from my family or friends when I face difficulty doing the homework.**

    Never Rarely Often Always

Section D

Listen to the teacher read some statements made by people after stressful life events. After each statement, tick each the box that shows how often these statements were true for you *during the past seven days*.

If they did not occur during that time, please tick the "Never" box.

18. Do you think about it even when you don't mean to?

☐Never ☐Rarely ☐Often ☐Always

19. Do you try to remove it from your memory?

☐Never ☐Rarely ☐Often ☐Always

20. Do you have difficulties paying attention or concentrating?

☐Never ☐Rarely ☐Often ☐Always

21. Do you have waves of strong feelings about it?

☐Never ☐Rarely ☐Often ☐Always

22. Do you startle more easily or feel more nervous than you did before it happened?

☐Never ☐Rarely ☐Often ☐Always

23. Do you stay away from reminders of it (such as specific places or situations)?

☐Never ☐Rarely ☐Often ☐Always

24. Do you try not talk about it?

☐Never ☐Rarely ☐Often ☐Always

25. Do pictures about it pop into your mind?

☐Never ☐Rarely ☐Often ☐Always

26. Do other things keep making you think about it?

☐Never ☐Rarely ☐Often ☐Always

27. Do you try not to think about it?

☐Never ☐Rarely ☐Often ☐Always

28. Do you get easily irritable?

☐Never ☐Rarely ☐Often ☐Always

29. Are you alert and watchful even when there is no obvious need to be?

☐Never ☐Rarely ☐Often ☐Always

30. Do you have sleep problems?

☐Never ☐Rarely ☐Often ☐Always

Section E

Now I will ask you if you have experienced any of the following events within the last three months. Three months back is approximately when we ..... (give the students a collective reference on something you did in class or something that many might remember). If you have experienced an event described, please tick the box next to the event. You can mark more than one event.

31. I have heard bombing.	
32. I have seen bombing.	
33. I have watched TV showing bombing or injured people from Gaza.	
34. There has been bombing in my neighborhood.	
35. People I know have been injured.	
36. People I know have been killed.	
37. I have lost my house.	
38. People I know have lost their house.	

39. Think of the event from above that frightened you the most. How afraid were you when it happened? Mark on the scale. 1 = Not afraid and 5 = Very afraid.

Mark the number of the event: ____

1	2	3	4	5

Section F

Please write the answers that are true for you in the blanks below.

40. Gender: _____

41. Age: _____

42. Grade: _____

Thank you for answering these questions!