



Psychosocial outcomes related to subjective threat from armed conflict events (STACE): Findings from the Israeli-Palestinian cross-cultural HBSC study[☆]

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ARTICLE INFO

Article history:

Received 20 February 2009

Received in revised form

26 November 2009

Accepted 1 December 2009

Keywords:

Armed conflict
Posttraumatic stress
Well-being
Risk behaviors
Adolescents
Middle East
Parental support

ABSTRACT

Objective: This study investigates the relationship between exposure to armed conflict and terror events, and an array of mental and behavioral outcomes within a large cross-cultural scientifically representative sample of 24,935 Palestinian (7,430 West Bank and 7,217 Gaza) and Israeli (5,255 Jewish and 6,033 Arab) 11-, 13-, and 15-year-old school children. The children of the Middle East have been subjected to exposure from armed conflict and terrorism repeatedly with no adequate research or interventions aimed at shielding them from the hazards of such exposure to their mental and social well-being.

Method: This paper studies the relationship between a newly developed scale (STACE) measuring levels of subjective perceptions of threat/fear due to exposure to armed conflict events and its predicting association with six psychosocial and behavioral outcomes covering (1) poor mental health, (2) positive well-being, and (3) risk behaviors. It also examines the role of parental support in “buffering” the effects of exposure to armed conflict events within the four target populations.

Results: Results showed that STACE has significant and strong effects on all six dependent variables representing (1) mental post trauma, (2) diminished well-being, and (3) elevated risk behaviors. STACE strongly affects all four populations with the greatest impact among the Jewish Israeli population and the least impact shown for the Arab Israeli youth. Parental support (“significant adult”) has both a direct main effect on the outcomes of all six variables as well as a significant “buffering” effect on the impact of STACE on certain outcome variables (posttraumatic symptoms, life satisfaction, positive life perceptions, and tobacco use).

Conclusions and Practice implications: Regardless of the type of armed conflict events, the perception of threat and fear that a child experiences has a universal significant negative impact on mental, social, and behavioral well-being. The importance of the existence of a supporting significant adult in exposed children’s lives is also emphasized. The findings show major implications for the development of community-based interventions focusing on enhancing parental, and other adult support in the lives of children living in armed conflict regions of the world.

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[☆] This study was supported by the USA-Agency for International Development (US-AID), Middle East Research Cooperation (MERC) program, Grant Agreement # TA-MOU-00-M20-051 and by a grant agreement from an anonymous foundation.

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Introduction

The past century has witnessed an increasing number of armed conflicts throughout the world (Pedersen, 2002), in which conflict is taking place not between states but between groups within a population with prolonged grudges against each other, on the basis of ethnic, cultural or religious lines (Onyango, 1998). More than half of the victims of armed conflicts are children (Al-Eissa, 1995; Ronstrom, 1989) and these statistics may even reach up to 90% of the casualties in some areas (UNICEF, 1996). Children are killed, maimed, displaced, made homeless, parentless, or emotionally traumatized. The impact of armed conflict on the lives of civilians is vast, ranging from death and physical injury to extensive psychological damage, destruction of communities, displacement, and life in camps, among others (Onyango, 1998; Wessells, 1998; Zwi et al., 2006). The impact of armed conflict on physical and psychological health, however, has not been studied sufficiently (Murray, King, Lopez, Tomijima, & Krug, 2002; Pedersen, 2002).

This study looks at the impact of exposure to armed conflict events on mental health, psychological well-being and risk behaviors of children in four distinct populations: (1) Jewish Israelis, (2) Arab Israelis, (3) Palestinians living in the West Bank, and (4) Palestinians living in Gaza. The regional armed conflict takes a different form in each of the four target populations in terms of the types of events the children are exposed to (e.g., terrorism, army incursions, air strikes, etc.); however, the mutual consequence is a deep feeling of fear and a perception of threat experienced by the children. We therefore designed and tested a new universal scale (STACE) measuring the severity of exposure to armed conflict events by focusing on the frequency, intensity, and level of perceived threat and feelings of fear experienced by specific exposure to the type of armed conflict events relevant to each respective population. We then explored the cross-cultural epidemiology of STACE among Palestinian and Israeli youth exposed to armed conflict and terrorism during one of the latest rounds of political unrest in the region. The study also investigated the psychological, social, and behavioral outcomes of the level of STACE in the target populations and the role of parental support in buffering or mediating the effects of STACE on psychosocial and behavioral outcomes. While several previous studies have examined the impact of the Israeli-Palestinian conflict on children and adolescents (Baker, 1990; Baker & Kanan, 2005; Laufer & Solomon, 2006; Solomon & Lavi, 2005) they have mostly focused on one individual population (Jewish Israeli, Arab Israeli, or Palestinian) and usually with limited samples. This study investigates both the exposure and its associated feelings of fear on a range of outcomes in large representative samples of school children representing the four main populations in Israel and the Palestinian Authority affected by this conflict.

The impact of armed conflict on mental health, well-being and risk behaviors among children

Research from the Middle East, Africa, Europe, and Asia, has emphasized the negative impact of armed conflict on the mental health of children and adolescents, in particular in the development of symptoms of PTSD (Allwood, Bell-Dolan, & Husain, 2002; Derluyn, Broekaert, Schuyten, & Temmerman, 2004; Laufer & Solomon, 2006; Macksoud & Aber, 1996; Nader, Pynoos, Fairbanks, al-Ajeel, & al-Asfour, 1993; Qouta, Punamaki, & Sarraj, 2003; Savin, Sack, Clarke, Meas, & Richart, 1996; Straker & Moosa, 1988; Thabet, Abed, & Vostanis, 2004), depression (Baker, 1990; Lien et al., 2006; Macksoud & Aber, 1996; Savin et al., 1996), and psychosomatic symptoms (Llabre & Hadi, 1997; Rayhida, Shaya, & Armenian, 1986). As Solomon and Lavi (2005) overview, variance in PTSD rates has been related to level of exposure, type of exposure, measures of posttraumatic stress, and socio-cultural contexts. Punamaki (1987) also reported that psychological disorders among Palestinian children living in the occupied West Bank and Gaza were correlated with the number and level of traumatic events to which they were exposed. However, interestingly, research has also emphasized the resilient nature of children and adolescents, in comparison with adults, and shown that they can often adapt better after war trauma (Boyden, 2003; Carballo et al., 2004; Meier, 2002). Children may be less likely to suffer from overt psychological disorder than one might expect (Gibson, 1989) and may often be impacted upon more by the response and anxiety communicated from their parents (Garmezy & Rutter, 1985).

Armed conflict has also been found to impact negatively on the well-being and behavioral outcomes of children and adolescents. Al-Eissa (1995) found that Kuwaiti children exposed to aggression from the Gulf conflict exhibited more symptoms of hostility, unhappiness, withdrawal, difficulties sleeping, and a suspicious attitude. Exposure to armed conflict can lead to an increase in disobedience, fighting and violence, risk taking, and other externalizing problems (Baker, 1990; Cairns & Dawes, 1996; Garbarino & Kostelny, 1996; Gibson, 1993; Lien et al., 2006; Ronen, Rahav, & Rosenbaum, 2003; Rousseau, Drapeau, & Platt, 1999) or to decreased capacity for enjoyment, sense of well-being, and trust in others (Baker & Kanan, 2003; Gibson, 1989). Barber (1999) in his study of Palestinian youth in the Intifada found an increase in antisocial behavior, smoking, and running away from home in those youth involved in Intifada violence. Onyango (1998) suggests that children exposed to a culture of violence grow up not knowing how to respond to situations peacefully. They grow up believing and considering violence as a normal way of responding (partly through seeing their parents respond violently due to their own traumatization), and acquire skills of resolving differences violently. Interestingly, however, Laufer and Solomon (2006) point out that positive effects have also been found on youth exposed to violent conflict, such as an increase in pro-social behavior (Macksoud & Aber, 1996; Raboteg-Saric, Zuzul, & Kerestes, 1994) and greater well-being (Bachar, Canetti, Bonne, Denour, & Shalev, 1997), which they explain as being connected to a salutogenic approach where stressful events may have positive outcomes.

Parental support as a “buffer” to negative outcomes

Research on resilience has examined personal, family, and community traits that enable positive outcomes for the individual in the face of significant adversity (Luthar, Cicchetti, & Becker, 2000; Masten & Coatsworth, 1998; Masten & Garmezy, 1985). Garmezy (1991) suggested that protective factors may include individual traits, family qualities, and support (such as warmth, unity, and the presence of a caring adult in the absence of parents) and community support (including schools, religious affiliation) which may enable individuals to circumvent life stressors. The “buffering hypothesis” (Thoits, 1982) suggests that individuals with a strong social support system should be better able to cope with major life changes with lesser negative impact on mental health. Research on children in armed conflict has also stressed the importance of parental support as a protective factor (Barber, 1999; Chimienti & Abu-Nasr, 1993; Joshi, O'Donnell, Cullins, & Lewin, 2006; Levinson, Shulman, Fernbuch, & Erez, 1994). Al-Eissa (1995) speculates that the quality of life and reservoirs of resilience of children exposed to armed conflict depend considerably on the stress-absorbing capacity of their parents and their parents' physical and psychological welfare. Lien et al. (2006) in a study on risk factors for mental health problems among immigrant adolescents in Norway, whose families had experienced war experiences before immigration, found that the biggest impact on adolescents' mental health status was their parents' war experience. Westerveld-Sassen (2006) in a study on children in Eritrea found that the continuous presence and connectedness of the family shielded the children from the impacts of war.

Research questions

Using the newly designed STACE scale, our first aim was to explore the social epidemiology of exposure to armed conflict events and its associated levels of subjective threat across the four target populations. The second aim was to investigate the predicting relationship between the levels of STACE and three groups of psycho-behavioral outcomes: (1) mental distress (PTSD and psychosomatic symptoms), (2) positive well-being (positive life perceptions and life satisfaction), and (3) risk behaviors (smoking and involvement in youth violence) across the four target populations. The third aim was to explore the role of parental support in mitigating the effects of exposure to armed conflict on the psychological and behavioral outcomes across the four populations, focusing both on the main effect of parental support on the dependant variables, as well as possible “buffering” or mediating roles it might play in the STACE-outcome associations.

Method

The study is based on survey data from the 2004 Health Behavior in School Aged Children in the Middle East (HBSC-ME) cross-cultural study. The 2004 HBSC-ME survey is modeled after the World Health Organization's HBSC cross-national survey in 41 European and North American countries, implemented every 4 years to nationally representative samples of 11, 13, and 15 years old school children. The HBSC-ME was developed as a new Middle East HBSC cross-cultural research network tailored to the unique circumstances and needs of the Palestinian-Israeli region and languages. The overall goal of the HBSC study is to “gain insights into and to increase our understanding of health behaviors, lifestyles, and their context in young people” (Currie et al., 2002). This occurs in part by identifying characteristics of youth that influence their health and well-being. Major categories of variables addressed in the survey include: family culture and parental support, school experience and school climate, community involvement, leisure-time activities, health related risk taking behaviors (e.g., smoking, drug use, nutrition, physical activity, violence), physical and mental health, exposure to armed conflict, and socioeconomic inequality (Harel-Fisch & Abdeen, 2003; Harel-Fisch & Abdeen, 2009). Both Palestinian and Israeli research teams subjected the research proposal to IRB clearance at their respective ministries of education. The granted approvals were followed by full cooperation and collaboration of the Ministries in sampling the schools and acquiring access for data collection. Both Universities waived the need for internal IRB following the approval by the Chief Scientist's Committees of the Ministries of Education.

Target populations and samples

The HBSC-ME target populations included children aged 11 (6th grade), 13 (8th grade), and 15 (10th grade) enrolled in Palestinian and Israeli schools during the 2003–2004 school year belonging to 4 populations: Jewish Israelis, Arab Israelis, Palestinians living in the West Bank, and Palestinians living in Gaza. Representative scientific samples were drawn from each of the 4 respective populations, using identical sampling techniques (see Harel-Fisch & Abdeen, 2003, 2009 for detailed sampling methods). Using the lists of classes and schools obtained from the respective Israeli and Palestinian ministries of education, a random stratified 2-stage cluster sample was obtained from each individual population. Stratum included region, type of school, and grade level. The sample unit was a classroom, with a maximum of 2 classrooms within each sampled school allowed. All students enrolled in a sampled classroom and present at data collection day were included as sampled children. To overcome possible clustering effects due to classroom and school shared experiences, a design effect was introduced so that a minimum of 1,500 sampled students per age-level per population were sought (Harel-Fisch & Abdeen, 2003; Roberts et al., 2007). The resulting cross-cultural sample included $N=24,935$ students (5,255 Israeli Jews, 6,033 Israeli Arabs, 7,430 Palestinians living in the West Bank, and 6,217 Palestinians living in Gaza).

Data collection and questionnaire

Data were collected using a standardized in-class self-administered questionnaire that needed one class period to be implemented. The HBSC-ME questionnaire is an adaptation of the WHO-HBSC instrument used in Europe with some additional packages (e.g., exposure to armed conflict) measuring topics of unique regional interests or needs. After the adaptation to the Middle East, including double cross-translation to Arabic and Hebrew, the survey instrument was tested in two independent preliminary studies (Harel-Fisch & Abdeen, 2003) using in-class administration as well as focus-group discussions to demonstrate reliability and validity (Harel-Fisch & Abdeen, 2003, 2009).

Measures

Exposure to armed conflict: Subjective threat from armed conflict events (STACE). This is a scale constructed from respondent's answers on three distinct dimensions of exposure to events related to the armed conflict: (1) frequency, (2) intensity, and (3) the perceived level of subjective threat (fear) experienced due to this exposure. Laufer and Solomon (2006), in their study of Israeli youth exposed to terror incidents, stress the importance of including both objective measures of exposure (e.g., the frequency of exposure to terror incidents) together with a subjective measure (e.g., fear felt at the time of exposure to the terror incident). This is due to an understanding that the chances of youth developing posttraumatic symptoms rises with their level of exposure (e.g., Garbarino & Kostelny, 1996), proximity or physical closeness to victims (Schwarzwald, Weisenberg, Waysman, Solomon, & Klingman, 1993) and their subjective experience of fear due to the exposure to the event (Dyregrov, Gupta, Gjestad, & Mukanoheli, 2000; Gavrilovic, Lecic-Tosevski, Knezevic, & Priebe, 2002). In other words, there are three relevant dimensions for the exposure to armed conflict events: (1) frequency (how many times did it happen?), (2) intensity (how close to you did it get?), and (3) subjective threat (how much were you afraid?). In addition, the type of armed conflict events that each of the four target populations were exposed to were different. Israelis were exposed mainly to terror attacks whereas the Palestinians to army attacks and activities. The specific types of events were confirmed in a series of focus group discussions in the preparation of the survey. The designed scale of subjective threat of armed conflict events (STACE) includes all three dimensions and allows for population-specific examples of events to be asked.

Respondents were asked if they were exposed to an "Armed Conflict Events" (ACE). Each population was referred to specific examples of such events that are relevant to their distinct circumstances—the Israeli students were asked about "terror attacks" whereas the Palestinian students were asked about "incursion of army troops." Using a "Guttman-Scale" approach, the questionnaire included five levels of proximity to the event ("intensity") as follows:

- (1) A terror attack/incursion of army troops occurred in my neighborhood.
- (2) Somebody I know (but who is not close to me) was hurt in a terror attack/armed conflict event.
- (3) Somebody close to me was involved in a terror attack/armed conflict event (but was not hurt).
- (4) Somebody close to me was hurt in a terror attack/armed conflict event.
- (5) I was nearby (or that I was hurt) in a terror attack/armed conflict event when this event occurred.

The number to the left of each statement represents the weight of the "intensity" of the exposure to the respondent, "5" being the most intense exposure. The participant can answer positive for none of the statements or for up to all 5. For each statement the questionnaire presented 5 choices to the student to determine the level of perceived threat (fear) from the armed conflict events that they were exposed to. The perceived fear scale was as follows:

- (1) The student was not exposed to an event; "Never happened."
- (2) The event happened and I was not afraid.
- (3) The event happened and I was a little afraid.
- (4) The event happened and I was afraid.
- (5) The event happened and I was very afraid.

The number to the left of each level of fear represents the weight of the "level of perceived threat" of each exposure to the respondent, "4" being the highest level of fear experienced due to the exposure to the particular event.

The main "exposure" variable used in this manuscript was created by multiplying the "intensity" weight (1–5) with the "perceived threat" scale (0–4) for each of the 5 exposure statements, which were then summed, resulting in the *subjective threat from armed conflict events (STACE)* scale running from "0" (lowest—no event and no fear) to "60" (highest—all 5 types of exposures occurred (rated 1–5) and each of them caused the highest level of fear). For example: a respondent who reported 2 exposures, (a) "somebody I know (but who is not close to me) was hurt in a terror attack/armed conflict event" (weighted 2) and (b) "I was nearby (or I was hurt) in a terror attack/armed conflict event when this event occurred" (weighted 5) and for both of the respective exposures he reported being "very afraid" (weighted 4) will be given a STACE score of $(2 \times 4) + (5 \times 4) = 28$. The final scale distribution is shown in Table 1 with a mean of 5.23 (SD = 9.22) for the Jewish Israeli sample up to a mean of 14.6 (SD = 14.4) for the Palestinian sample in Gaza.

Table 1
Mean distribution of study variables across the 4 target populations.

	Min-max values	Jewish Israeli			Arab Israeli			West Bank			Gaza		
		Mean	S.E.	N	Mean	S.E.	N	Mean	S.E.	N	Mean	S.E.	N
STACE*	0–60	5.23	0.183	2,537	7.56	0.242	2,830	12.76	0.209	3,708	14.60	0.254	3,213
GSS*	0–80	1.31	0.100	646	1.98	0.081	1,268	1.33	0.042	2,945	1.52	0.050	2,549
Psychosomatic symptoms*	0–8	1.26	0.023	5,189	1.98	0.026	5,790	1.97	0.022	7,333	1.85	0.023	6,120
Smoking*	0–2	0.14	0.006	5,136	0.16	0.006	6,003	0.17	0.005	7,379	0.09	0.004	6,183
Youth violence*	0–5	1.14	0.014	5,251	1.59	0.016	6,022	1.45	0.014	7,408	1.34	0.016	6,191
Life satisfaction*	0–10	7.80	0.025	5,046	7.76	0.033	5,055	7.07	0.030	7,072	7.04	0.034	5,757
Positive health*	0–6	4.33	0.024	5,169	3.29	0.022	5,747	3.10	0.020	7,330	3.13	0.020	6,110

* Differences among the target populations are statistically significant, $p < 0.001$.

The dependent variables (outcomes)

The six dependent variables covered three outcome areas as follows: poor mental health (posttraumatic stress symptoms—Global Symptom Score (GSS) and psychosomatic symptoms); positive well-being (life satisfaction and positive health perceptions); and risk behaviors (smoking and involvement in youth violence).

Posttraumatic stress symptoms (PTS)—Global Symptom Score (GSS). Posttraumatic stress symptoms were measured by a 20-item index (Cronbach's alpha = 0.97). Using the CPTS-RI (Child Posttraumatic Stress Reaction Index) (Frederick & Pynoos, 1988) the researchers assessed posttraumatic stress symptoms by use of this self-assessment questionnaire that determines the severity of posttraumatic stress in youth. It consists of 20 statements addressing symptoms that are grouped into three symptom categories: symptoms of an intrusive nature, avoidance, and hyperarousal. Youth respondents mark their perceived degree of association with each of the 20 statements on a 5-point scale from 0—"not at all" to 4—"very much." A mean score of posttraumatic symptoms was calculated from the 20 questions.

Psychosomatic symptoms. Psychosomatic symptoms were measured by an 8-item index scale (Cronbach's alpha = 0.81). Questions regarding the following symptoms were asked:

- (1) Did you experience any of the following symptoms at least once a week? Headache, stomach ache, backache, dizziness.
- (2) Did you experience any of the following symptoms at least once a day? Feel depressed, have a bad temper, feel nervous, have difficulties sleeping.

Participants responded on a scale from 1—every day to 5—rarely or never to what extent they had experienced the symptoms. These items were recoded as a dichotomous scale where 1 represents the occurrence of the symptoms. The dichotomous variables were summed, thus yielding a continuous index scale ranging from 0 to 8.

Life satisfaction. Life satisfaction was measured using a Cantril ladder (Cantril, 1965). This 1-item scale draws upon psychological and sociological research with an emphasis on the evaluative aspects of subjective well-being. It rests on the assumption that adolescent resources (including scholastic achievement and social relations) have a major impact on overall life satisfaction. The "ladder" runs from 0 to 10. The respondent is told: "Here is the picture of a ladder. The top of the ladder '10' is the best possible life for you and the bottom '0' is the worst possible life for you. In general, where on the ladder do you feel you stand at the moment?"

Positive health perceptions. Positive perceptions of life and health were measured with a 6-item scale (Cronbach's alpha = 0.67). Questions asked were: (1) I like the way things are going for me; (2) my life is going well; (3) I have a good life; (4) I feel good about what is happening to me; (5) I would like to change many things in my life; (6) I wish I had a different kind of life—often or almost always.

Participants answered each item on a scale from 1 (never) to 4 (almost always). Students who answered "never" to the first 4 questions or "often or sometimes" to the last 2 questions were considered to have negative perceptions of life. The items were recoded into a dichotomous variable and summed, yielding a continuous index scale ranging from 0 to 6.

Smoking. Smoking was measured using a 2-item, 4-point scale (Cronbach's alpha = 0.69). The items used for constructing the scale were: 1—I smoke every day to 4—I do not smoke at all. The students were asked as to how often they smoke either cigarettes or nargila. Smoking either cigarettes or nargila at least once a week was given a value of 1. The dichotomous variables were summed, thus yielding a continuous index with a range from 0 to 2.

Involvement in youth violence. Violence was measured using a 5-item scale index (Cronbach's alpha = 0.67). The following questions were asked:

- (1) During the past 12 months, how many times were you involved in a physical fight?
- (2) During the past 30 days, on how many days did you carry a weapon, such as a knife, or club, or any other object?
- (3) During the past 30 days, on how many days did you carry a weapon such as a knife, club, or other such objects to school?

- (4) During the past 12 months, how many times were you injured and had to be treated by a physician or nurse?
 (5) During the past couple of months, how often have you taken part in bullying another student(s) at school?

The items were recoded as a dichotomous variable where 1 represents “at least once” for each of the items. The dichotomous variables were summed, yielding a continuous index scale ranging from 0 to 5.

Protective “buffering” factor

Parental support. Parental support was measured by two items asking the respondents to what extent they felt that they could talk with their father or with their mother on things that bothered them. Respondents that had at least one parent they felt they could talk to about things that bothered them were identified as “having parental support” as opposed to respondents who had no parent they could talk to who were identified as having “no parental support.” This dichotomous variable was used to investigate the role of parental support in buffering the effects of armed conflict on psychosocial and behavioral outcomes.

Results

Descriptive analysis

Initial descriptive analysis was carried out for each of the independent (STACE and parental support) and dependent variables (GSS, psychosomatic symptoms, life satisfaction, positive health, youth violence, and smoking). Results can be seen in Table 1.

As can be seen, significantly different levels of STACE were observed in the 4 populations with Jewish Israeli children showing the lowest levels (5.23) followed by Arab Israeli (7.56), Palestinians in the West Bank (12.76), and Palestinians in Gaza (14.6) who are exposed to the highest level of combined frequency, intensity, and fear from armed conflict events. Interestingly, however, on a mental health level, Jewish Israeli, West Bank, and Gaza Palestinian children showed similar levels of posttraumatic symptoms (1.3, 1.3, and 1.5 respectively) with Israeli Arab children showing significantly higher GSS (1.98). Similarly, Arab Israelis and West Bank children showed significantly higher levels of psychosomatic symptoms with Jewish Israeli showing the least. In terms of risk behaviors, Gaza children had lowest smoking followed by Jewish and Arab Israelis, with West Bank Palestinian children exhibiting the highest levels of smoking. All 4 populations showed significantly differing levels of youth violence with Jewish Israelis showing the least, followed by Gaza, West Bank, and then Israeli Arab children who showed the most. Finally, in terms of well-being, similar patterns were found with life satisfaction and positive perceptions, whereby significant differences were shown between West Bank and Gaza Palestinians (showing similar lower levels of life satisfaction/positive perceptions) and Jewish and Arab Israeli children (showing higher levels).

As such, there were no consistent patterns, although Palestinian children (both in the West Bank and Gaza) showed both higher levels of STACE and also lower levels of well-being. Interestingly, however Israeli Arab children showed the highest levels of posttraumatic symptoms, psychosomatic symptoms, and risk behaviors but the second lowest levels of STACE.

Hierarchical linear regression models

Sets of seven Hierarchical linear regression models were constructed for each of the four populations for each of the six dependent variables: GSS (PTS), psychosomatic symptoms, life satisfaction, positive health, youth violence, and smoking. The independent variables were gender, age, exposure to armed conflict events as measured by STACE, and parental support. Model I includes gender and grade (age) only. Model II is an additive model including the partial effect of STACE over and above (i.e., controlling for) the effects of gender and grade. Likewise Model III is an additive model including the partial effects of parental support controlling for gender and grade. Model IV includes the partial effects of both STACE and parental support over and above the effects of gender and grade. Model V includes the partial additive effects of STACE and parental support together with their interaction effect, controlling for gender and grade. Finally models VI and VII represent segregated regression models including the partial effects of STACE controlling for gender and grade, first for children without parental support (VI) and then for children with parental support (VII), in contrast to III representing the combined sample.

Fig. 1 presents the regression coefficient plots of the effects of STACE on the six dependent variables controlled for gender and grade, by each of the four populations. The findings clearly show very strong and significant effects of STACE on higher levels of PTSD and psychosomatic symptoms, on higher rates of risk behaviors (smoking and violence) and on significant declines of levels of positive well-being. Although there are some variations in the magnitude of these effects across the four populations, exposure to armed conflict events have strong and consistent negative effects on all six outcomes for all four target populations.

Posttraumatic symptoms (GSS). The findings presented in Table 2 show that STACE is strongly associated with PTSD (Model II) for Jewish Israelis and for Palestinian children from both the West Bank and Gaza. The association for Arab Israelis is significant but weak. Parental support (Model III) was significantly related to less posttraumatic symptoms for Jewish Israelis and West Bank children.

Table 2
Hierarchical linier regression models predicting poor mental health outcomes by the 4 target populations.

Model	Variables	Level of GSS				Level of Psychosomatic symptoms			
		Jewish Israeli	Arab Israeli	West Bank	Gaza	Jewish Israeli	Arab Israeli	West Bank	Gaza
I	Female (1 = yes)	-.088*	.002	.081***	.035	.134***	.043*	.083***	.005
	Age 1 = grade 6	-.019	.021	.085***	.071**	-.089***	-.013	.004	.057**
	Age 1 = grade 8	-.051	.021	.011	-.011	-.056*	-.030	-.018	.037
	N	N = 640	N = 1,248	N = 2,413	N = 2,183	N = 2,521	N = 2,793	N = 3,673	N = 3,169
	R ²	R ² = .010	R ² = .001	R ² = .012***	R ² = .007***	R ² = .024***	R ² = .002*	R ² = .006***	R ² = .001
II ^a	STACE	.264***	.084**	.197***	.200***	.148***	.126***	.128***	.128***
	N	N = 640	N = 1,248	N = 2,413	N = 2,183	N = 2,521	N = 2,793	N = 3,673	N = 3,169
	R ²	R ² = .079***	R ² = .007	R ² = .051***	R ² = .047***	R ² = .045***	R ² = .017***	R ² = .022***	R ² = .017***
III ^a	Parental support	-.082*	-.008	-.048**	-.011	-.144***	-.084***	-.157***	-.092***
	N	N = 628	N = 1,192	N = 2,877	N = 2,482	N = 5,128	N = 5,573	N = 7,158	N = 5,945
	R ²	R ² = .010*	R ² = -.002	R ² = .011***	R ² = .006***	R ² = .042***	R ² = .010***	R ² = .033***	R ² = .013***
IV ^a	STACE	.278***	.070*	.194***	.200***	.144***	.128***	.126***	.133***
	Parental support	-.060	-.007	-.067***	-.023	-.118***	-.094***	-.168***	-.100***
	N	N = 623	N = 1,179	N = 2,356	N = 2,126	N = 2,485	N = 2,660	N = 3,580	N = 3,076
	R ²	R ² = .093***	R ² = .006	R ² = .055***	R ² = .046***	R ² = .061***	R ² = .028***	R ² = .051***	R ² = .031***
V ^a	STACE	.625***	-.004	.416***	.253***	.125**	.075	.163**	.088
	Parental support	.079	-.033	.018	-.003	-.123***	-.107***	-.156***	-.115***
	Interaction	-.403***	.084	-.251***	-.059	.022	.057	-.042	.049
	N	N = 623	N = 1,179	N = 2,356	N = 2,126	N = 2,485	N = 2,660	N = 3,580	N = 3,076
	R ²	R ² = .123***	R ² = .007	R ² = .061***	R ² = .047***	R ² = .061***	R ² = .029***	R ² = .051***	R ² = .031***
VI ^b	STACE	.434***	-.028	.324***	.218**	.119*	.125*	.139**	.091
	N	N = 102	N = 175	N = 246	N = 198	N = 371	N = 332	N = 372	N = 253
	R ²	R ² = .239***	R ² = .006	R ² = .125***	R ² = .053*	R ² = .045**	R ² = .084***	R ² = .046***	R ² = .021
VII ^c	STACE	.223***	.083**	.173***	.197***	.152***	.132***	.125***	.138***
	N	N = 521	N = 1,004	N = 2,110	N = 1,928	N = 2,114	N = 2,328	N = 3,208	N = 2,823
	R ²	R ² = .053***	R ² = .008	R ² = .044***	R ² = .213***	R ² = .048***	R ² = .021***	R ² = .021***	R ² = .023***

^a Adjusted for gender and grade.

^b Segregated analysis for “with no parental support”; adjusted for gender and grade.

^c Segregated analysis for “with parental support”; adjusted for gender and grade.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

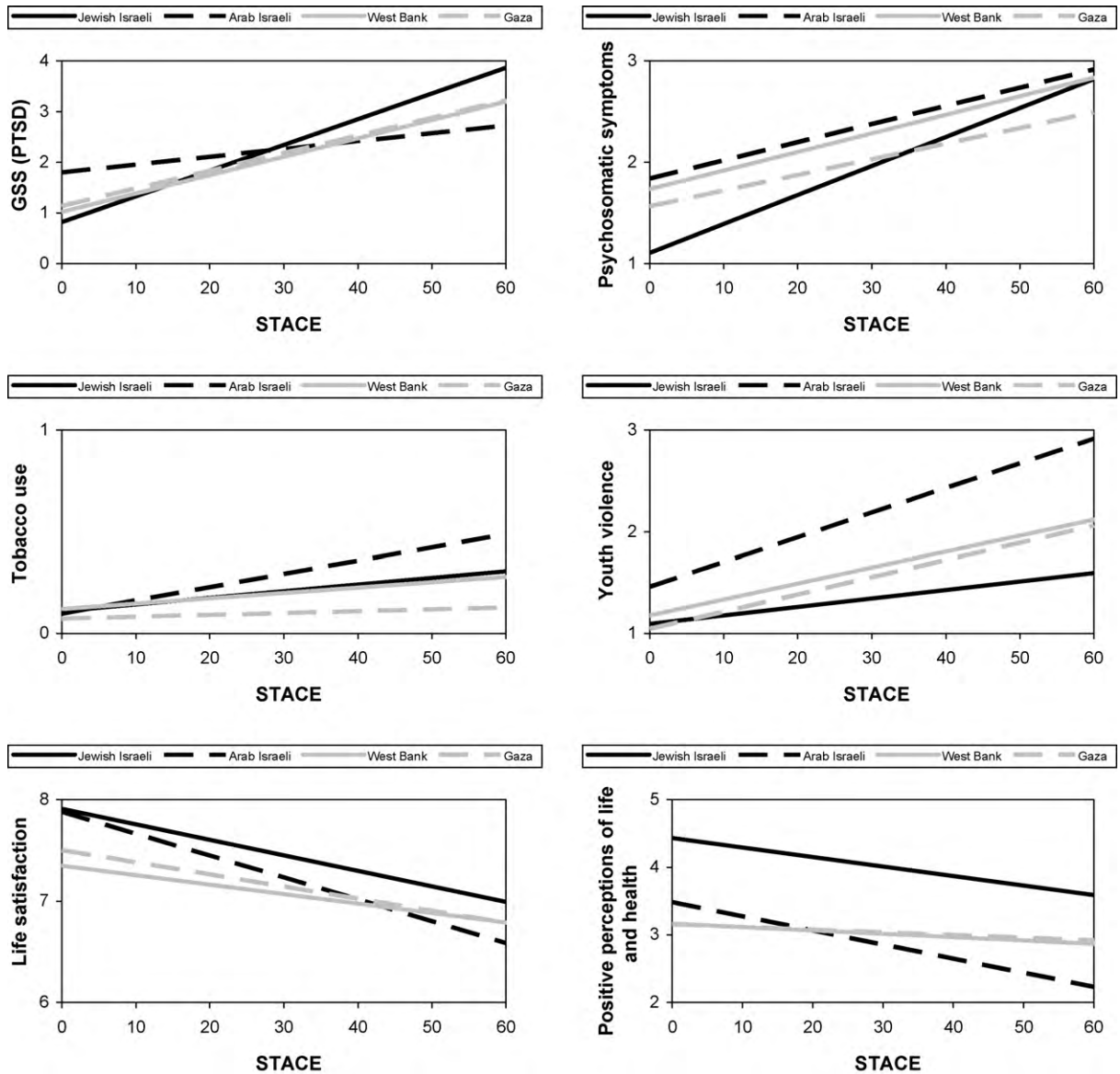


Fig. 1. Regression coefficient plots of STACE on the dependant variables by the 4 target populations.

An additional interaction effect was found in Jewish Israeli and West Bank children's groups where by parental support buffered the effects of STACE for the two populations (see Fig. 2). Findings show that parental support acts as a buffer in the Jewish Israeli and West Bank populations such that for children who reported parental support there was a lesser impact of STACE on posttraumatic symptoms. In addition, younger children in the two Palestinian populations showed higher levels of posttraumatic symptoms, as did boys in the Jewish Israeli group.

Psychosomatic symptoms. Findings show that both the subjective threat from armed conflict events (STACE) scale and parental support have strong and significant relationships with the rates of psychosomatic symptoms. The higher the exposure to armed conflict events, the higher the levels of psychosomatic symptoms. Children with parental support reported fewer psychosomatic symptoms. These effects are consistent across the four populations. No significant interaction effects were found showing that parental support did not buffer the effects of STACE. In addition, Jewish and Arab Israelis and West Bank girls showed higher levels of psychosomatic symptoms than did boys.

Positive life and health perceptions. As can be seen in Table 3, the subjective threat from armed conflict events (STACE) measure was significantly related to levels of positive life and health perceptions for three of the populations (Jewish Israeli, Arab Israeli, and West Bank). Increase in the level of STACE is strongly associated with a significant decrease in positive life and health perceptions. In addition, parental support was significantly related to levels of positive life and health perceptions

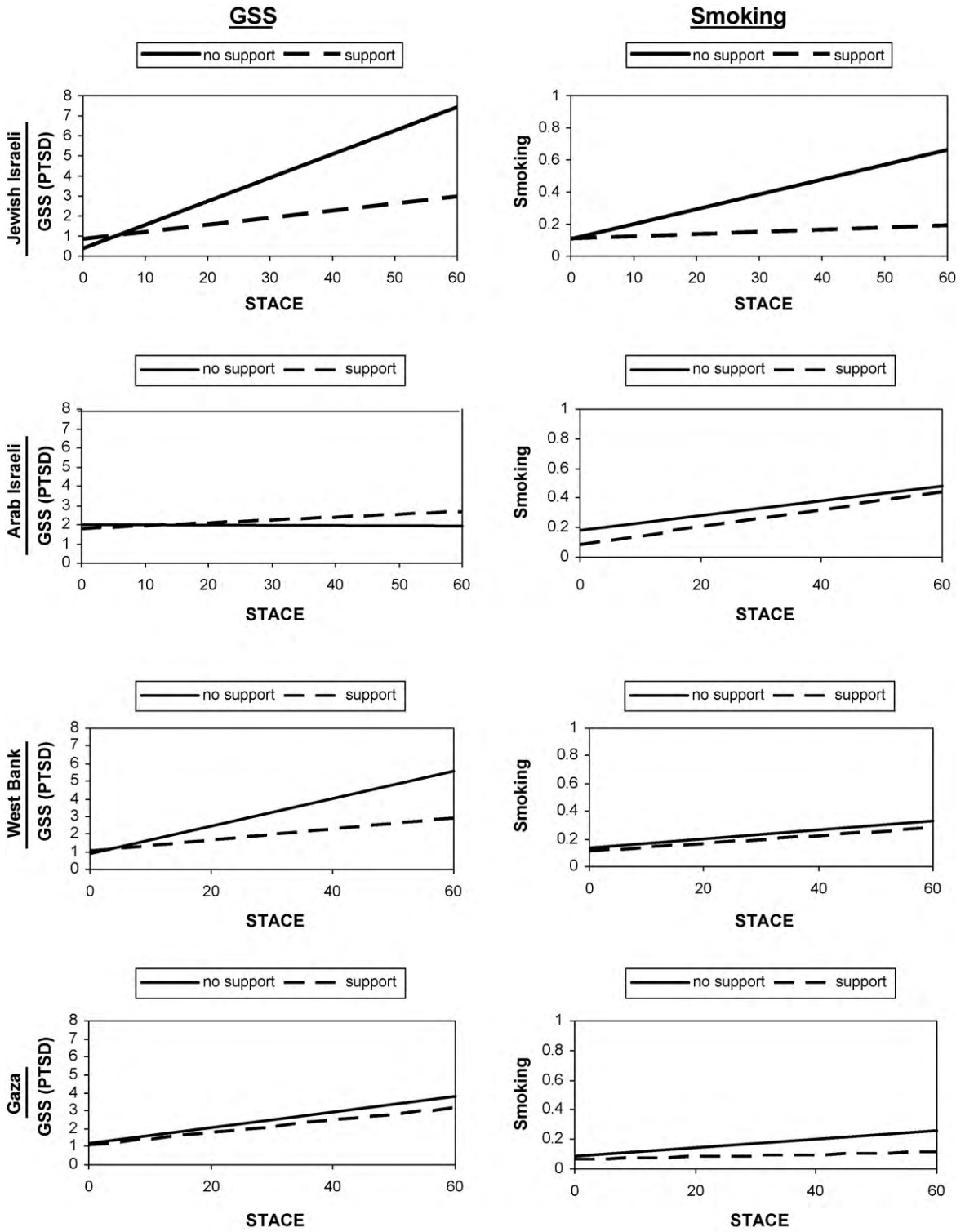


Fig. 2. Regression coefficient plots of STACE on GSS and smoking by parental support status for the 4 target populations.

Table 3
Hierarchical linear regression models predicting positive well-being by the 4 target populations.

Model	Variables	Level of positive perceptions of life and health				Level of life satisfaction			
		Jewish Israeli	Arab Israeli	West Bank	Gaza	Jewish Israeli	Arab Israeli	West Bank	Gaza
I	Female (1 = yes)	-.076***	.055**	.006	.013	-.035	-.011	-.042*	.010
	Age 1 = grade 6	.143***	.059**	.102***	.022	.204***	.233***	.269***	.161***
	Age 1 = grade 8	.051*	.071**	.043***	-.012	.094***	.170***	.103***	.063*
	N	N = 2,519	N = 2,789	N = 3,674	N = 3,163	N = 2,461	N = 2,492	N = 3,449	N = 2,934
	R ²	R ² = .022***	R ² = .007***	R ² = .008***	R ² = .001	R ² = .033***	R ² = .050***	R ² = .057***	R ² = .019***
II ^a	STACE	-.064**	-.155***	-.041*	-.037*	-.067***	-.125***	-.066***	-.075***
	N	N = 2,519	N = 2,789	N = 3,674	N = 3,163	N = 2,461	N = 2,492	N = 3,449	N = 2,934
	R ²	R ² = .026***	R ² = .030***	R ² = .009***	R ² = .002	R ² = .037***	R ² = .065***	R ² = .061***	R ² = .025***
III ^a	Parental support	.222***	.152***	.192***	.111***	.225***	.222***	.159***	.102***
	N	N = 5,105	N = 5,530	N = 7,155	N = 5,928	N = 4,984	N = 4,892	N = 6,903	N = 5,585
	R ²	R ² = .068***	R ² = .030***	R ² = .046***	R ² = .016***	R ² = .071***	R ² = .090***	R ² = .063***	R ² = .023***
IV ^a	STACE	-.049*	-.134***	-.043**	-.045*	-.054**	-.095***	-.066***	-.070***
	Parental support	.233***	.135***	.187***	.098***	.217***	.195***	.168***	.081***
	N	N = 2,483	N = 2,652	N = 3,582	N = 3,067	N = 2,427	N = 2,389	N = 3,368	N = 2,852
	R ²	R ² = .080***	R ² = .044***	R ² = .044***	R ² = .012***	R ² = .083***	R ² = .100***	R ² = .088***	R ² = .030***
V ^a	STACE	-.061	-.034	.039	.037	-.099*	-.099	-.083	-.190**
	Parental support	.230***	.160***	.213***	.126***	.205***	.194***	.162***	.040
	Interaction	.013	-.109*	-.091	-.089	.050	.005	.019	.131*
	N	N = 2,483	N = 2,652	N = 3,582	N = 3,067	N = 2,427	N = 2,389	N = 3,368	N = 2,852
VI ^b	STACE	-.048	-.087	.042	.030	-.084	-.110	-.073	-.193**
	N	N = 372	N = 332	N = 375	N = 256	N = 362	N = 294	N = 329	N = 233
	R ²	R ² = .065***	R ² = .043***	R ² = .055***	R ² = .009	R ² = .055***	R ² = .069***	R ² = .104***	R ² = .081***
VII ^c	STACE	-.051*	-.146***	-.052**	-.053**	-.049*	-.096***	-.065***	-.057**
	N	N = 2,111	N = 2,320	N = 3,207	N = 2,811	N = 2,065	N = 2,095	N = 3,039	N = 2,619
	R ²	R ² = .018***	R ² = .032***	R ² = .006***	R ² = .003*	R ² = .026***	R ² = .056***	R ² = .047***	R ² = .019***

^a Adjusted for gender and grade.

^b Segregated analysis for "with no parental support"; adjusted for gender and grade.

^c Segregated analysis for "with parental support"; adjusted for gender and grade.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

for all four populations. Younger Jewish and Arab Israelis and West Bank children showed higher levels of positive life perceptions, as did Jewish Israeli boys and Arab Israeli girls.

Life satisfaction. As can be seen in Table 3, both the subjective threat from armed conflict events (STACE) measure and parental support were significantly related to levels of life satisfaction for all four populations. Life satisfaction decreases significantly for those who have elevated STACE scores—attesting to the negative effect of exposure to armed conflict on life satisfaction. Life satisfaction was significantly higher for children with parental support. An interaction effect was found only in the case of Gaza children whereby STACE levels were significant in groups both with and without parental support but had a more significant impact on those without parental support.

Smoking. As can be seen in Table 4, the subjective threat from armed conflict events (STACE) measure was significantly related to levels of smoking for three of the populations (Jewish Israeli, Arab Israeli, and West Bank). Children that reported high rates of STACE also reported higher rates of smoking. In addition, parental support was associated with less smoking in all four populations. An interaction effect was found only among Jewish Israelis, whereby STACE impacted on smoking only among those with no parental support (see Fig. 2).

Youth violence. Table 4 shows that children with high STACE scores were more involved in youth violence as compared to those with lower exposure to armed conflict. The findings also show that children who report having parental support are less involved in youth violence. Both these effects are universal across the four target populations. In addition, across the four populations, boys showed higher levels of youth violence, as did younger children.

In sum, the STACE measure of exposure (frequency, intensity, and subjective fear) to armed conflict events had a significant impact across almost all of the four populations over all of the dependent variables: the higher the level of STACE, the higher the levels of posttraumatic and psychosomatic symptoms, the lower the levels of life satisfaction and positive life and health perceptions and the higher the risk behaviors (smoking and youth violence). Similarly, parental support was significantly related to all variables across all four populations. Those children who reported parental support showed lower posttraumatic and psychosomatic symptoms, higher life satisfaction and more positive life and health perceptions and lower risk behaviors. Several interaction effects were found among certain populations such that parental support served as a buffer against STACE impacts for posttraumatic symptoms for Jewish Israelis and West Bank Palestinians, against damaging positive life perceptions for Arab Israelis and life satisfaction for Gaza children and against smoking for Jewish Israelis.

Discussion

In his editorial relating to challenges in studying the psychological effects of Palestinian children's exposure to political violence, in response to the articles by Quota, Punamaki, Montgomery, and El Sarraj (2007) and by Elbedour, Onwuegbuzie, Ghannam, and Whitcome (2007), Haj-Yahia (2007) relates to a number of issues on conceptual, methodological, and ethical levels which need to be addressed in future research. Among the issues he raises, he relates to the need on a conceptual level to relate to the relevance of personal, familial, cultural, organizational, and professional factors; on a methodological level he stresses the need to examine representative Palestinian populations, both outside of the Gaza strip and also including children who had not been exposed to violent events and to a need to define clearly political violence and traumatic events in the wake of occupation; and on an ethical level he relates to the problem of researching children's exposure to political violence when it is not possible to provide relevant services to help the children and families to cope with these events.

The current study, by looking at the impact of exposure to armed conflict and terror events among representative samples of Jewish, Arab Israeli, Gazan, and West Bank Palestinian children and the impact of parental support attempts to address some of these issues. From a methodological point of view, the study developed a scale that measures the exposure to events related to armed conflict using population-specific types of events as descriptors of the typology of exposure. The specific types of events were confirmed in the series of focus group discussions in the preparation of the survey. This allowed measurement of the subjective effects of exposure in a way that is comparable between the various sub-populations of the region, thus obtaining a universal measure of subjective threat created by exposure to any type of threatening event. In addition, this study is based on representative samples of 11–15 year old school children, representing all types of schools, towns, and villages (including refugee camps) across the Palestinian societies of the West Bank and Gaza, thus overcoming the concerns about representation in previous studies (Haj-Yahia, 2007).

As to the ethical concerns, we agree with Haj-Yahia (2007) about the need to develop solutions to buffer the effects of exposure in order to be able to follow up research with protective policies and interventions. The findings of this study do contribute in this direction by pointing out the vital importance of parental connectedness and support to children in times of exposure to armed conflict as an effective means to reduce the severity of outcomes. This insight can be translated easily in each and every community in the region to programs focused on enhancing parental effective involvement in the daily lives of the children. An extrapolation of this notion can take this idea to all potential significant adults surrounding children in schools, in the community, and at home. A school-based community level intervention strategy named "Youth Resiliency" has been developed to address these issues by training teachers and parents to become effective significant adults in children's lives, as a means to reduce both risk behaviors and truancy, and at the same time, to shield children from traumatic effects of exposure to armed conflict (Harel-Fisch, 2009).

The study examined the relationship between exposure to armed conflict events and mental and behavioral outcomes among children aged 11–15 in Israel (Jewish and Arab), the West Bank, and Gaza. It also set out to examine to what extent parental support could be seen to act as a buffer on the impact of potential effects of these events on measures of mental

Table 4
Hierarchical linear regression models predicting risk behaviors by the 4 target populations.

Model	Variables	Level of smoking				Level of youth violence			
		Jewish Israeli	Arab Israeli	West Bank	Gaza	Jewish Israeli	Arab Israeli	West Bank	Gaza
I	Female (1 = yes)	-.110***	-.250***	-.217***	-.164***	-.362***	-.423***	-.380***	-.379***
	Age (1 = grade 6)	-.309***	-.087***	-.021	-.005	.138***	.113***	.190***	.097***
	Age (1 = grade 8)	-.199***	-.047*	-.048**	-.003	.074***	.028	.140***	.116***
	N	N = 2,499	N = 2,818	N = 3,675	N = 3,198	N = 2,537	N = 2,829	N = 3,699	N = 3,203
	R ²	R ² = .082***	R ² = .066***	R ² = .049***	R ² = .027***	R ² = .150***	R ² = .194***	R ² = .174***	R ² = .152***
II ^a	STACE	.066***	.155***	.064***	.023	.108***	.158***	.123***	.143***
	N	N = 2,499	N = 2,818	N = 3,675	N = 3,198	N = 2,537	N = 2,829	N = 3,699	N = 3,203
	R ²	R ² = .086***	R ² = .089***	R ² = .053***	R ² = .027***	R ² = .162***	R ² = .218***	R ² = .189***	R ² = .172***
III ^a	Parental support	-.033*	-.073***	-.032**	-.068***	-.071***	-.072***	-.060***	-.069***
	N	N = 5,094	N = 5,684	N = 7,168	N = 5,975	N = 5,164	N = 5,707	N = 7,202	N = 5,988
	R ²	R ² = .072**	R ² = .078**	R ² = .055**	R ² = .038**	R ² = .166**	R ² = .204**	R ² = .156**	R ² = .142**
IV ^a	STACE	.060**	.142***	.070***	.025	.102***	.152***	.127***	.144***
	Parental support	.000	-.059**	-.036*	-.054**	-.081***	-.062***	-.075***	-.076***
	N	N = 2,462	N = 2,672	N = 3,569	N = 3,090	N = 2,499	N = 2,684	N = 3,596	N = 3,095
	R ²	R ² = .086***	R ² = .088***	R ² = .054***	R ² = .028**	R ² = .166***	R ² = .220***	R ² = .197***	R ² = .178***
V ^a	STACE	.210***	.119*	.102*	.115	.155***	.159**	.143**	.116*
	Parental support	.044	-.064**	-.025	-.024	-.066**	-.060**	-.069**	-.086***
	Interaction	-.171***	.025	-.036	-.098	-.060	-.007	-.018	.031
	N	N = 2,462	N = 2,672	N = 3,569	N = 3,090	N = 2,499	N = 2,684	N = 3,596	N = 3,095
	R ²	R ² = .091***	R ² = .088***	R ² = .054***	R ² = .029***	R ² = .167***	R ² = .220***	R ² = .197***	R ² = .178***
VI ^b	STACE	.218***	.090	.090	.071	.163***	.162**	.143**	.116*
	N	N = 370	N = 333	N = 377	N = 257	N = 372	N = 334	N = 376	N = 257
	R ²	R ² = .108***	R ² = .120***	R ² = .060***	R ² = .117***	R ² = .218***	R ² = .212***	R ² = .214***	R ² = .151***
VII ^c	STACE	.023	.155***	.066***	.019	.087***	.152***	.125***	.147***
	N	N = 2,092	N = 2,339	N = 3,192	N = 2,833	N = 2,127	N = 2,350	N = 3,220	N = 2,838
	R ²	R ² = .086**	R ² = .082**	R ² = .054**	R ² = .024**	R ² = .151**	R ² = .219**	R ² = .195**	R ² = .180**

^a Adjusted for gender and grade.

^b Segregated analysis for “with no parental support”; adjusted for gender and grade.

^c Segregated analysis for “with parental support”; adjusted for gender and grade.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

health, well-being, and risk behaviors. In order to measure the impact we developed the STACE (subjective threat from armed conflict events) scale which takes into account frequency and intensity of experienced events and the subjective experience of threat or fear from these events.

Subjective threat from armed conflict events was seen to impact across all four populations on almost all of the measures of mental health, well-being, and risk behavior. For Jewish and Arab Israeli children and Palestinian children from the West Bank and Gaza, their experiences from armed conflict events lead to higher levels of posttraumatic and psychosomatic symptoms, higher levels of risk behaviors, as shown by smoking and youth violence, and lower levels of well-being. These findings strengthen previous research highlighting the negative impact of armed conflict events on children's mental health, well-being, and risk behaviors (Al-Eissa, 1995; Baker & Kanan, 2005; Barber, 1999; Derluyn et al., 2004; Garbarino & Kostelny, 1996; Laufer & Solomon, 2006; Lien et al., 2006; Macksoud & Aber, 1996; Rousseau et al., 1999; Savin et al., 1996; Qouta et al., 2003) and emphasize the detrimental impact on well-being and social development that such conflicts are having on children and adolescents.

The study also confirms the importance of measurements which combine both objective and subjective measures of experienced armed conflict events. The STACE scale used in this paper to measure the level of exposure to armed conflict events combines three dimensions: frequency, intensity, and subjective fear in a way that made it possible to carry out cross-cultural analyses. The STACE scale worked very well in all four target populations yielding comprehensive and comparable distributions of levels of exposures for each distinct population enabling the cross-cultural analyses.

An initial comparison between the groups on the independent and dependent variables showed interesting responses. Significant differences were found between the groups on STACE levels of experienced armed conflict, with children from Gaza experiencing the highest scores followed by children from the West Bank, Arab Israelis, and finally Jewish Israelis. While all four populations are suffering from significant exposure to armed conflict violence resulting in experiences of significant levels of fear, the findings clearly show that the Palestinian children in the West Bank and especially in Gaza are growing amidst armed conflict events that are causing particularly high levels of subjective fear.

In terms of measures of health and well-being, the results found were quite different. It was, interestingly, the Israeli Arab children who showed significantly higher levels of many of the dependent measures, namely posttraumatic symptoms, psychosomatic symptoms, smoking (these latter two are also shared by West Bank Palestinian children), and youth violence. It seems that although these children are not experiencing as many armed conflict events they are exhibiting a significant range of problematic health symptoms and behaviors that may be attributed to other social determinants related to social inequality and are not unique to armed conflict. On the other hand they, together with Jewish Israelis, showed a significantly higher level of life satisfaction and positive health and life perceptions than the Palestinian children from the West Bank and Gaza. As such, the Palestinian children showed both higher levels of armed conflict experience and lower levels of well-being.

This particular, and in some ways surprising, vulnerability of the Israeli Arab children is important to understand. Israeli Arab children are living in a predominantly Jewish country built on Western democratic values and may aspire to many of the values of the society they are growing up in, thus causing a perception of social inequality and a sense of personal-environment misfit. The Arab Israeli society has a strong connection to the Arab culture and heritage. The conflicts in values, culture, and tradition between Western and Arab culture may leave them in a particularly vulnerable position for mental health issues and risk behaviors. Identity conflict may be seen as the problem of the multiply defined self whose definitions have become incompatible (Baumeister, Shapiro, & Tice, 1985; Ward, 2008). Ward (2008), in her recent paper, outlines how ethnic identity conflict has been found to be significantly related to psychological adaptation as assessed by measures of depression, psychological symptoms, life satisfaction, and socio-cultural adaptation, operationalized in terms of school adjustment, behavioral problems, and social difficulty. Since this study is a first study to compare the four populations in this way, the results highlight an alarming picture of Israeli Arab children in distress.

Parental support was found to impact across all four populations on all six measures of mental health, well-being and risk behavior. Higher levels of parental support were related to lower levels of posttraumatic and psychosomatic symptoms, lower levels of risk behaviors as shown by smoking and youth violence, and higher levels of well-being. Parental support could also be seen to interact with STACE measures for some of measures over some of the populations. In particular, with Jewish and West Bank children, parental support mediated the effects of STACE on the posttraumatic symptoms of the children. While STACE was still significant for all children, it had a stronger impact on those children without parental support. Similarly, for Gaza children in terms of levels of life satisfaction, STACE impacted less on children with parental support. In the case of life perceptions, STACE only impacted on Arab Israeli children with parental support (while life perceptions were initially higher among children with parental support, this benefit was seen to disappear as STACE levels increased, leaving children with and without support as similar) and for Jewish Israelis, STACE increased smoking among children with no parental support.

The pivotal role of parental support in helping children cope with adversity and life stressors has been well documented in general in work on resilience (see Masten & Powell, 2003 for a review) and specifically, in research on the impact of armed conflict on children (Almqvist & Broberg, 1999; Barber, 1999; de Jong, 2002; Joshi et al., 2006; Levinson et al., 1994; Westerveld, 2005). However, literature has also stressed the importance of understanding the complex relationship between social support and life stressors, due to conceptual, methodological and theoretical issues that arise when trying to understand the relationship (Thoits, 1982; Vaux, 1988).

Vaux (1988) using models developed by Lin (1986) discusses a number of different potential models which can describe the various possible relationships between support and life stressors and their impact on well-being. He emphasizes issues

of the temporal relationship, causality and dependence/independence of the variables. In independent models, both life stressors and social support independently impact on well-being. This was found to be the case in many of our results where STACE impacted negatively and parental support could be seen to increase well-being, independently of each other. He also describes differing “buffering models” dependent on whether social support can be considered to exist (or not) before the event (the “conditioning effect”), thus determining the climate in which the child meets the life stressor or to “come between” the stressor and distress (the “exacerbating effect”), thus mediating the impact of the stressor on the child. The latter Vaux (1988) considers to be a true “buffering model.” Lin (1986) also adds the existence of the combined models where parental support impacts both independently and as a buffer. Our results show the existence of both independent and combined models. Parental support could be seen to impact positively independently but also to serve, at times, as a buffer. Obviously, the cross-sectional nature of the data limits certain conclusions of causality and research has also shown that life stressors can damage previously existing social support (see Thoits, 1982 for a comprehensive review of the relationship between social support and life stress). However, the results do suggest the important role that parental support plays, both independently and as a mediator, in the well-being and mental health of these children.

The results have implications for intervention programs for children living in regions affected by war, armed conflict, terrorism, or any other threatening social–political unrest. Recent years have seen the development of various approaches for intervention for these children (Apfel & Simon, 1996; Hart, Galappatti, Boyden, & Armstrong, 2007; Betancourt & Williams, 2008) following the understanding of the dramatic impact that armed conflict events may be having on these children. Ellis, Rubin, Betancourt, and Saxe (2006) have also stressed the importance of interventions involving the broader social community. However, it seems important to also emphasize the resilient nature of many children exposed to armed conflict, as Cairns and Dawes conclude (Cairns & Dawes, 1996) that “the majority of children exposed to political violence either at present or in the past do not suffer unduly in psychological terms,” or as Boyden (2003) suggests that children are agents of their own development who even during times of great adversity consciously act upon and influence the environments in which they live. Our findings explored the role that parental support can play in buffering negative impacts of armed conflict events. We would like to suggest the importance of intervention strategies emphasizing the central role of significant adults, especially parents, but also teachers, counselors, and other mentors at home, school, and in the community, in providing the type of emotional stability and support children so much need in times of upheaval; this together with promoting and encouraging feelings of empowerment and competence of the children themselves.

This study examines the experience of armed conflict events for children using the newly developed STACE scale that combines measures of frequency, intensity, and subjective fear. It is a first study to examine all four populations in Israel and the Palestinian authority and to explore the potential mediating role of parental support on measures of psychological health and well-being. However, several caveats should be noted. The STACE scale should be further explored in terms of use for a wider variety of types of armed conflict events, different age groups (including adults, for example), and with a multiple-choice response to the frequency dimension for each of the intensity levels. In addition, the cross-sectional nature of the HBSC study does not allow determination of causality, an issue relevant particularly in untangling the social support/life stressor relationship. In addition it is a survey-based study and further data from additional methods including interviews, observations, multiple respondents (e.g., parents, teachers), and projective measures could enhance and enrich our understandings of the experiences of the children of the Middle East. While the study covered a wide range of outcomes, there are clearly many other measures of well-being and risk that seem important to examine. In addition, while there are clearly large cultural differences between the different populations in the study, which could be interesting to explore further, the study emphasizes and strengthens previous understandings of the universal importance of parental figures and significant adults in buffering the impact of trauma. The results show that across the different cultural realities of the adolescents in the study, parent support was critical for all six measures of mental health, well-being, and risk behavior. Finally, we explored the role of parental support as an example of social support and significant adults. Further research should examine the role of other potential significant adults and additional protective factors in the lives of these children so that findings could be harness to improve more effective intervention strategies for communities undergoing social–political unrest.

References

- Al-Eissa, Y. A. (1995). The impact of the Gulf armed conflict on the health and behaviour of Kuwaiti children. *Social Science & Medicine*, 41(7), 1033–1037.
- Allwood, M. A., Bell-Dolan, D., & Husain, S. A. (2002). Children's trauma and adjustment reactions to violent and nonviolent war experiences. *Journal of the American Academy of Child & Adolescent Psychiatry*, 41(4), 450–457.
- Almqvist, K., & Broberg, A. G. (1999). Mental Health and Social Adjustment in Young Refugee Children y 31/2 Years After Their Arrival in Sweden. *Journal of Amer Academy of Child & Adolescent Psychiatry*, 38(6), 723–730.
- Apfel, R. J., & Simon, B. (1996). *Minefields in their hearts: The mental health of children in war and communal violence*. New Haven: Yale University Press.
- Bachar, E., Canetti, L., Bonne, O., Denour, A. K., & Shalev, A. Y. (1997). Psychological well-being and ratings of psychiatric symptoms in bereaved Israeli adolescents: Differential effect of war-versus accident-related bereavement. *The Journal of Nervous and Mental Disease*, 185(6), 402–406.
- Baker, A. M. (1990). The psychological impact of the Intifada on Palestinian children in the occupied West Bank and Gaza: An exploratory study. *American Journal of Orthopsychiatry*, 60(4), 496–505.
- Baker, A. M., & Kanan, H. M. (2003). Psychological impact of military violence on children as a function of distance from traumatic event: the Palestinian case. *Intervention*, 1, 13–21.
- Baker, A. M., & Kanan, H. M. (2005). Psychological impact of military violence on children as a function of distance from traumatic event: The Palestinian case. *NATO Security through Science Series E Human and Societal Dynamics*, 4, 163.
- Barber, B. K. (1999). Political violence, family relations, and Palestinian youth functioning. *Journal of Adolescent Research*, 14(2), 206–230.

- Baumeister, R. F., Shapiro, J. P., & Tice, D. M. (1985). Two kinds of identity crisis. *Journal of Personality*, 53(3), 407–424.
- Betancourt, T. S., & Williams, T. (2008). Building an evidence base on mental health interventions for children affected by armed conflict. *Intervention*, 6(1), 39–56.
- Boyden, J. (2003). Children under fire: Challenging assumptions about children's resilience. *Children, Youth and Environments*, 13(1). Spring, Retrieved [3 June 2010] from <http://colorado.edu/journals/cye>.
- Cairns, E., & Dawes, A. (1996). Children: Ethnic and political violence—A commentary. *Child Development*, 67(1), 129–139.
- Cantril, H. (1965). *The pattern of human concerns*. New Brunswick, NJ: Rutgers U.P.
- Carballo, M., Smajkic, A., Zeric, D., Dzidowska, M., Gebre-Medhin, J., & Van Halem, J. (2004). Mental health and coping in a war situation: The case of Bosnia and Herzegovina. *Journal of Biosocial Science*, 36(4), 463–477.
- Chimienti, G., & Abu-Nasr, J. (1993). Children's reactions to war-related stress II. The influence of gender, age, and the mother's reaction. *International Journal of Mental Health*, 21(4), 72–86.
- Currie, C., Roberts, C., Morgan, A., Smith, R., Settertobulte, W., Samdal, O., et al. (2002). *Young people's health in context. Health Behaviour in School-aged Children (HBSC) study: international report from the 2001/2002 survey*. Geneva: WHO.
- de Jong, J. (2002). *Trauma, war, and violence: Public mental health in socio-cultural context*. New York: Plenum Publishers.
- Derluyn, I., Broekaert, E., Schuyten, G., & Temmerman, E. D. (2004). Post-traumatic stress in former Ugandan child soldiers. *The Lancet*, 363(9412), 861–863.
- Dyregrov, A., Gupta, L., Gjestad, R., & Mukanohehi, E. (2000). Trauma exposure and psychological reactions to genocide among Rwandan children. *Journal of Traumatic Stress*, 13(1), 3–21.
- Elbedour, S., Onwuegbuzie, A. J., Ghannam, J., Whitcome, J. A., & Hein, F. A. (2007). Post-traumatic stress disorder, depression, and anxiety among Gaza Strip adolescents in the wake of the second uprising (Intifada). *Child Abuse & Neglect*, 31(7), 11.
- Ellis, B. H., Rubin, A., Betancourt, T. S., & Saxe, G. (2006). Mental health interventions for children affected by war or terrorism. In G. B. E. Silverman, & M. M. E. Feerick (Eds.), *Children exposed to violence* (pp. 159–187). Baltimore, MD: Paul H Brookes.
- Frederick, C. J., & Pynoos, R. (1988). *The child post-traumatic stress disorder (PTSD) Reaction Index*. Los Angeles: University of California.
- Garbarino, J., & Kostelny, K. (1996). What do we need to know to understand children in war and community violence. In R. J. Apfel, & B. Simon (Eds.), *Minefields in their hearts: The mental health of children in war and communal violence* (pp. 33–51). New Haven, CT: Yale University Press.
- Garmezy, N. (1991). Resiliency and vulnerability to adverse developmental outcomes associated with poverty. *American Behavioral Scientist*, 34(4), 416–430.
- Garmezy, N., & Rutter, M. (1985). Acute reactions to stress. *Child and Adolescent Psychiatry: Modern Approaches*, 2, 152–176.
- Gavrilovic, J., Lelic-Tosevski, D., Knezevic, G., & Priebe, S. (2002). Predictors of posttraumatic stress in civilians 1 year after air attacks: A study of Yugoslavian students. *The Journal of Nervous and Mental Disease*, 190(4), 257–262.
- Gibson, K. (1989). Children in political violence. *Social Science & Medicine*, 28(7), 659–667.
- Gibson, K. (1993). The effects of exposure to political violence on children: Does violence beget violence. *South African Journal of Psychology*, 23(4), 167–173.
- Haj-Yahia, M. M. (2007). Challenges in studying the psychological effects of Palestinian children's exposure to political violence and their coping with this traumatic experience. *Child Abuse & Neglect*, 31(7), 691–697.
- Harel-Fisch, Y. (2009). *Youth resiliency: A school based intervention strategy to enhance well-being and reduce risk behaviors and truncky*. Israel: Well-being International. (in Hebrew).
- Harel-Fisch, Y., & Abdeen, Z. (2003). *The Middle East Health Behavior in School-aged Children (HBSC-ME) cross cultural study: Research protocol for the 2004 survey*. Al Quds University and Bar Ilan University.
- Harel-Fisch, Y., & Abdeen, Z. (2009). *Growing up in the Middle East: The daily lives and well-being of Israeli and Palestinian youth*.
- Hart, J., Galappatti, A., Boyden, J., & Armstrong, M. (2007). Participatory tools for evaluating psychosocial work with children in areas of armed conflict: a pilot in eastern Sri Lanka. *Intervention*, 5(1), 41–60.
- Joshi, P. T., O'Donnell, D. A., Cullins, L. M., & Lewin, S. M. (2006). Children exposed to war and terrorism. In G. B. E. Silverman, & M. M. E. Feerick (Eds.), *Children exposed to violence* (pp. 53–84). Baltimore, MD: Paul H. Brookes.
- Laufer, A., & Solomon, Z. (2006). Posttraumatic symptoms and posttraumatic growth among Israeli youth exposed to terror incidents. *Journal of Social and Clinical Psychology*, 25(4), 429–447.
- Levinson, S., Shulman, S., Fernbuch, S., & Erez, T. (1994). Emotional fear reactions and their personality and environmental correlates in children and young adults after the Gulf War. *Psychologia*, 4(1), 158–169.
- Lien, L., Oppedal, B., Haavet, O. R., Hauff, E., Thoresen, M., & Bjertness, E. (2006). Own and parental war experience as a risk factor for mental health problems among adolescents with an immigrant background: Results from a cross sectional study in Oslo, Norway. *Clinical Practice and Epidemiology in Mental Health*, 2(1), 30.
- Lin, N. (1986). Conceptualizing social support. In N. Lin, A. Dean, & W. Ensel (Eds.), *Social support, life events, and depression* (pp. 17–30). Orlando: Academic Press.
- Liabre, M. M., & Hadi, F. (1997). Social support and psychological distress in Kuwaiti boys and girls exposed to the Gulf crisis. *Journal of Clinical Child Psychology*, 26(3), 247–255.
- Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development*, 71(3), 543–562.
- Macksoud, M. S., & Aber, J. L. (1996). The war experiences and psychosocial development of children in Lebanon. *Child Development*, 67(1), 70–88.
- Masten, A. A., & Coatsworth, J. D. (1998). Development of competence in favorable and unfavorable environments. *American Psychologist*, 53(2), 205–220.
- Masten, A. S., & Garmezy, N. (1985). Risk, vulnerability, and protective factors in developmental psychopathology. *Advances in Clinical Child Psychology*, 8, 1–52.
- Masten, A. S., & Powell, J. L. (2003). A resilience framework for research, policy, and practice. In S. S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 1–25). New York: Cambridge University Press.
- Meier, E. (2002). Effects of trauma and war on children. *Pediatric Nursing*, 28(6), 626–629.
- Murray, C., King, G., Lopez, A., Tomijima, N., & Krug, E. (2002). Armed conflict as a public health problem. *British Medical Journal*, 324, 346–349.
- Nader, K. O., Pynoos, R. S., Fairbanks, L. A., al-Ajeel, M., & al-Asfour, A. (1993). A preliminary study of PTSD and grief among the children of Kuwait following the Gulf crisis. *British Journal of Clinical Psychology*, 32(Pt 4), 407–416.
- Onyango, P. (1998). The impact of armed conflict on children. *Child Abuse Review*, 7, 219–229.
- Pedersen, D. (2002). Political violence, ethnic conflict, and contemporary wars: Broad implications for health and social well-being. *Social Science & Medicine*, 55(2), 175–190.
- Punamaki, R. (1987). Psychological stress responses of Palestinian mothers and their children in conditions of military occupation and political violence. *Quarterly Newsletter of the Laboratory of Comparative Human Cognition*, 9(2), 76–84.
- Qouta, S., Punamaki, R. L., Montgomery, E., & El Sarraj, E. (2007). Predictors of psychological distress and positive resources among Palestinian adolescents: Trauma, child, and mothering characteristics. *Child Abuse & Neglect*, 31(7), 19.
- Qouta, S., Punamaki, R. L., & Sarraj, E. E. (2003). Prevalence and determinants of PTSD among Palestinian children exposed to military violence. *European Child & Adolescent Psychiatry*, 12(6), 265–272.
- Raboteg-Saric, Z., Zuzul, M., & Kerestes, G. (1994). War and children's aggressive and prosocial behaviour. *European Journal of Personality*, 8, 201–212.
- Rayhida, J., Shaya, M., & Armenian, H. (1986). Child health in a city at war. In *Wartime: The state of children in Lebanon*. Beirut: American University of Beirut.
- Roberts, C., Currie, C., Samdal, O., Currie, D., Smith, R., & Maes, L. (2007). Measuring the health and health behaviours of adolescents through cross-national survey research: Recent developments in the health behaviour in school-aged children (HBSC) study. *Journal of Public Health*, 15(3), 179–186.
- Ronen, T., Rahav, G., & Rosenbaum, M. (2003). Children's reactions to a war situation as a function of age and sex. *Anxiety, Stress & Coping*, 16(1), 59–69.
- Ronstrom, A. (1989). Children in Central America: Victims of war. *Child Welfare*, 68(2), 9.

- Rousseau, C., Drapeau, A., & Platt, R. (1999). Family trauma and its association with emotional and behavioral problems and social adjustment in adolescent Cambodian refugees. *Child Abuse & Neglect*, 23(12), 1263–1273.
- Savin, D. A. N., Sack, W. H., Clarke, G. N., Meas, N. E. E., & Richart, I. M. (1996). The Khmer Adolescent Project. III. A study of trauma from Thailand's site II refugee camp. *Journal of the American Academy of Child & Adolescent Psychiatry*, 35(3), 384.
- Schwarzwald, J., Weisenberg, M., Waysman, M., Solomon, Z., & Klingman, A. (1993). Stress reaction of school-age children to the bombardment by SCUD missiles. *Journal of Abnormal Psychology*, 102(3), 404–410.
- Solomon, Z., & Lavi, T. (2005). Israeli youth in the second Intifada: PTSD and future orientation. *Journal of the American Academy of Child & Adolescent Psychiatry*, 44(11), 1167.
- Straker, G., & Moosa, F. (1988). Post-traumatic stress disorder: A reaction to state-supported child abuse and neglect. *Child Abuse & Neglect*, 12(3), 383–395.
- Thabet, A. A. M., Abed, Y., & Vostanis, P. (2004). Comorbidity of PTSD and depression among refugee children during war conflict. *Journal of Child Psychology and Psychiatry*, 45(3), 533–542.
- Thoits, P. A. (1982). Conceptual, methodological, and theoretical problems in studying social support as a buffer against life stress. *Journal of Health and Social Behavior*, 23(2), 145–159.
- UNICEF. (1996). *The State of the World's Children 1996*. Oxford: Oxford University Press.
- Vaux, A. (1988). *Social support: Theory, research, and intervention*. New York: Praeger.
- Ward, C. (2008). Thinking outside the Berry boxes: New perspectives on identity, acculturation, and intercultural relations. *International Journal of Intercultural Relations*, 32(2), 105–114.
- Wessells, M. G. (1998). The changing nature of armed conflict and its implications for children: The Graca Machel/UN Study. *Peace and Conflict*, 4(4), 321–334.
- Westerveld, L. (2005). The impact of the Eritrean-Ethiopian border conflict on the children in Eritrea: The role of protective factors. *Intervention*, 3(1), 25–30.
- Westerveld-Sassen, L. (2006). Speaking of War. War Rape and Domestic violence in the Former Yugoslavia; trainers about their Work for Care. *Intervention*, 4(1), 77.
- Zwi, A. B., Grove, N. J., Kelly, P., Gayer, M., Ramos-Jimenez, P., & Sommerfeld, J. (2006). Child health in armed conflict: Time to rethink. *The Lancet*, 367(9526), 1886–1888.