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HOW FAMILY RELATIONSHIPS PREDICT THE EFFECTIVENESS OF A PSYCHOSOCIAL GROUP INTERVENTION AMONG WAR-AFFECTED CHILDREN

RAIJA-LEENA PUNAMÄKI, KIRSI PELTONEN, MARWAN DIAB,
AND SAMIR R. QOUTA

ABSTRACT

Family relationships habitually shape the way traumatic events affect children's mental health in a context of war and violence, but research is scarce on the role these relationships play in the success of psychosocial interventions. This study is a secondary analysis of previously identified family system types that are based on attachment, parenting, and siblingship, and of the influence they have on the effectiveness of a psychosocial group intervention (the Teaching Recovery Techniques, TRT). The TRT is aimed at reducing children's mental health problems and increasing their psychosocial resources. We tested three noncompeting hypotheses based on family system dynamics. First was the compensation hypothesis, which holds that children from families with negative relationships benefit a great deal from the TRT intervention. The second was the accumulative hypothesis, which maintains that children from families with negative relationships do not benefit from the intervention. The third, the buffering hypothesis, states that children from families with positive relationships benefit a great deal from the intervention. The family sample consists of 325 Palestinian mothers and fathers and one child from each family between the ages of 10 and 13. The children participated either in the TRT intervention or control groups. Their self-reported posttraumatic stress symptoms, emotional and conduct problems, positive resources, and prosocial behavior were assessed at baseline, three months post-intervention, and at a six-month follow-up. We found that family type was significantly associated with TRT effectiveness, which supports the compensation and buffering hypotheses. In the

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intervention group, children with insecure and negative family relationships showed a reduction in emotional problems across the three assessments, and an increase in positive resources from baseline to post-intervention. Children with secure and positive family relationships showed a reduction in emotional problems and increase in positive resources also in the control group. We argue that a family system approach can deepen understanding of the mechanisms of successful psychosocial interventions and, therefore, that family relations should be taken into account when tailoring such interventions for traumatized children.

INTRODUCTION

War as a developmental environment puts overwhelming demands on children and their families. Losses, horrors, and threats to life force them to seek a balance between their strengths and vulnerabilities. Researchers have documented both. The research shows associations between children's exposure to traumatic war events and increased posttraumatic stress disorder (PTSD), as well as symptoms of depression, anxiety, and dissociation (Charlson et al. 2019; Slone and Mann 2016). Some studies also show an increase in aggression and antisocial behavior (Keresteš 2006; Qouta et al. 2008). However, war-affected children also demonstrate psychosocial resources and can even blossom despite trauma, which is conceptualized as resilience (Masten and Narayan 2012) and evidenced by observations of intact cognitive and emotional skills (Punamäki, Qouta, and El-Sarraj 2001), an improved sense of social affiliation (Diab 2011; Punamäki et al. 2006), and phenomenal recovery when help is received (Bonanno 2004; Tol, Song, and Jordans 2013).

A number of community- and school-based interventions have been designed to prevent and heal children's mental health and developmental problems and to enhance their psychosocial resources and resilience (Purgato et al. 2020). Their healing elements include social and emotional learning (SEL) and psychosocial support (PSS), such as creative expression through dance, storytelling, music, and psychodrama. PSS/SEL also can reinforce a child's sense of safety, mastery, and belonging through cooperative games, reflective thinking, group cohesion, and emotion expression and regulation (Kangaslampi and Peltonen 2019; Schnyder et al. 2015). Ultimately, the aim is to reinforce children's individual and social resources and strengths and support their empowerment, effective coping strategies, and trust in self and others, which in turn can reduce psychological suffering (Bosqui and Marshoud 2018). However, children who participate in psychosocial interventions can differ greatly in terms of family resources, support, and security, which may affect their potential to benefit from the interventions.

FAMILY RELATIONSHIPS AND PSYCHOSOCIAL
GROUP INTERVENTION EFFECTIVENESS

Research is scarce on the impact family relations have on the effectiveness of interventions for war-affected children. Accordingly, the present study examines how the quality of family attachments, parenting, and siblingship helps children benefit from psychosocial intervention activities, thereby enhancing the success of the intervention.

FAMILY SYSTEM DYNAMICS OF RECOVERY FROM TRAUMA

According to family system theories, parents and children face traumatic events together and show endurance, manifest symptoms, and care for each other in different and unique ways (Crittenden and Dallos 2009; Montgomery 2004; Punamäki, Qouta, and Peltonen 2017; Riggs and Riggs 2011). These theories offer the possibility of understanding how trauma affects children's mental health and how and why successful interventions can help them. Family experiences can result in compensatory, accumulative, or buffering dynamics in members who manifest mental health problems, social support, or emotional sharing (Coyne, Downey, and Boergers 1992; Minuchin 1974; Punamäki et al. 2010). Compensation dynamics suggest that maternal problems, such as depression, do not constitute a risk for child development if the children enjoy a good relationship with their father (Vänskä et al. 2015) or warm and intimate siblingship (Peltonen et al. 2010). Accumulative dynamics in turn refer to a spillover of negative responses from marital and parenting systems into siblingship, thus multiplying family stressors (Lindblom et al. 2014; Lindblom et al. 2017; Minuchin 1974). Buffering dynamics indicate that traumatic war events do not pose a risk to children's mental health in families with supportive, wise, and sensitive parents (Montgomery 2004).

Based on family system dynamics, we may analogously propose similar dynamics concerning the role family relationships play in psychosocial interventions for war-affected children. According to compensation dynamics, children who have insecure and unsupportive parent and sibling relationships enjoy successful intervention effects (reduced symptoms and increased psychosocial resources), as the intervention experiences give them opportunities to satisfy their deep need for care, genuine listening, sharing, and attention. In contrast, according to accumulation dynamics, children with insecure and unsupportive family relationships experience unsuccessful intervention effects (stable or even increased symptoms and reduced resources), due to the stress caused by family burdens and a spillover of mistrust to other adults and peers, which prevents the children from engaging in and benefitting from intervention activities. Finally, according to buffering dynamics, children with secure and supportive family relationships enjoy successful intervention effects, due to family-based protection

from traumatic war events, readiness to trust adults and peers to get help, and adaptive expression and regulation of emotion. In this study, we test whether these family system dynamics also work in terms of the intervention's effectiveness. The corresponding compensation, additive, and buffering hypotheses are not competing and can exist simultaneously.

FAMILY RELATIONSHIPS IN PSYCHOSOCIAL INTERVENTIONS

Research on the effectiveness of interventions conceptualizes family relationships as an underlying mechanism for outcome change (statistical mediators) or as factors that affect the degree of outcome change (statistical moderators). As typical mediators, psychosocial interventions can enhance family mental health and security and improve parents' capacity to deal with traumatized children, often by providing psychoeducation and support (Betancourt et al. 2013; Jordans, Pigott, and Tol 2016). Research has shown that moderating factors such as family structure (e.g., single-parent families, family separation, foster parenting), socioeconomic status, and family connectedness affect the success of psychosocial interventions (Betancourt et al. 2012; Bryant 2016; Panter-Brick, Grimon, and Eggerman 2014). However, few studies have empirically tested the effects of family relationship quality on intervention-induced improvements, even though supportive parenting and family security are considered essential to supporting recovery among traumatized children, both in general (Cohen, Mannarino, and Murray 2011) and in conditions of war and political violence (Bosqui and Marshoud 2018; Jordans et al. 2016).

We found one study that examined the impact parent-child attachment relationships have on the effectiveness of a school-based psychosocial intervention for war-affected Palestinian children (Eloranta et al. 2017). The results showed that the intervention was effective in reducing PTSD symptoms among secure and preoccupied children, but not among those who were avoidant. Importantly, secure children's symptoms also decreased in control conditions, whereas those of the avoidant children in the control group increased. We were unable to find research on the role siblingship plays in the success of psychosocial interventions. One Palestinian study (Diab et al. 2014) found that a psychosocial intervention could reduce sibling rivalry among girls, although it was not effective enough to produce optimal sibling relations that provided warmth and intimacy. Sibling conflict increased in the control conditions. Two studies confirmed that warm and intimate sibling relationships can prevent traumatic war events from negatively affecting the mental health of Palestinian children (Diab, Guillaume, and Punamäki 2018; Peltonen et al. 2010).

Research shows that treatments are effective in providing parental support, competence, and optimal parent-child communication in families exposed to interpersonal and community violence (Barber, Stoltz, and Olsen 2005; Johnson et al. 2018). However, we could not find studies that examined the influence of parenting quality on intervention outcomes among war-traumatized children, despite abundant research showing that high-quality parenting enhances recovery from trauma (Eltanamy et al. 2021; Feldman et al. 2013; Thabet et al. 2009).

System theories conceptualize family relationships comprehensively, which involves multiple subsystems, the most important being parent-child bonds and attachments, parenting, and siblingship (Minuchin 1974). According to attachment theories, experiencing danger and threats intensifies protection-motivated family dynamics, which partly legitimizes the examination of the effects different family types have on recovery from war trauma (Bowlby 1969; Masten and Monn 2015; Mikulincer et al. 1999). In this study, we utilize the person-oriented approach inherent in family system theories, which enables us to capture the complexity of multiple dyadic and triadic relationships by identifying homogenous groups (Bergman, Magnusson, and El Khouri 2003). Rather than focusing on separate dimensions that describe attachment relationships, parenting styles, and siblingship, the person-oriented approach summarizes dynamic information to identify unique family types in the context of war. Qualitatively different family types have distinct and meaningful effects on children's development, as the young ones learn to adjust their social, emotional, and cognitive responses to match their specific family environment (Coyne et al. 1992; Crittenden and Dallos 2009).

CONTEXT OF THE STUDY

Palestinians, who currently live under foreign military occupation, have a long history of accumulated war trauma and deportations. Families in Gaza are severely affected by the current military siege and repeated Israeli military operations, and by an international economic boycott imposed in 2007 as a response to the Islamic Hamas party winning national elections. As a result, Palestinians in Gaza are denied freedom of movement, access to clean water, and regular electricity (World Bank 2015). The current study was conducted in the aftermath of the war on Gaza in 2008-2009 (Operation Cast Lead in Israeli military terms). The 23-day war resulted in 1,417 Palestinians dead, including 313 children, and 5,303 injured, among them 1,606 children. Approximately 100,000 people were displaced due to their homes being destroyed and had to seek refuge in the besieged Gaza Strip (UNHRC 2009; UN OCHA 2009).

The participating families belong to Islamic Arab culture, where parents' main tasks are to protect their children and secure their physical, spiritual, and social development. Children, who are dependent on their parents, show them great respect (Al-Krenawi and Graham 2005). These cultural norms emphasize social harmony and connectedness rather than individual thriving, ambition, and autonomy (Kagitcibasi 2005). Parenting goals among these families include teaching appropriate behavior (politeness, respecting elders, obedience, family loyalty), decency (honesty, charity, and responsibility), and lovingness (sharing, loving family, and compassion) (Al-Hassan and Takash 2011).

Some research shows that the Palestinian national struggle for liberation has affected marriage and parenting traditions. Traumatic events with political, military, and ideological connotations have been found to empower rather than harm women, whereas everyday stress constitutes a risk for their mental distress (Diab 2011; Khamis 1998; Punamäki 1986). For instance, as almost one-third of Palestinian men were detained, imprisoned, or deported during the First Intifada (1987-1991), a national uprising, women took responsibility for political and community actions (Khamis 1998). In terms of parenting, one study found that Palestinian mothers exposed to severe traumatic war events endorsed more relatedness and autonomy as desirable characteristics of their children (Kankaanpää et al. 2020). The Palestinian national struggle demands that mothers socialize their children for traditional relatedness while also instilling in them the autonomy they need in the face of military and war violence. It thus is possible that individual and collectivistic values are not opposing but complementary and dynamic (Kagitcibasi 2005).

RESEARCH AIMS

The present study involves a secondary analysis of the role played by four previously identified family types before the children participated in the Teaching Recovery Techniques (TRT) psychosocial intervention (Punamäki et al. 2017). The first aim was to examine how these family types (highly secure and positive relationships, moderately secure and neutral relationships, discrepant experiences, and highly insecure and negative relationships) influence the effectiveness of the TRT intervention among war-affected Palestinian children. The criteria for intervention effectiveness were the following: a decrease in PTSD symptoms; a decrease in emotional and conduct problems; and an increase in positive resources and prosocial behavior. According to the compensation hypothesis, children from families with insecure and negative relationships and from families with discrepant experiences would show decreased symptoms and

FAMILY RELATIONSHIPS AND PSYCHOSOCIAL
GROUP INTERVENTION EFFECTIVENESS

increased psychosocial resources at baseline, post-intervention, and follow-up assessments. According to the accumulation hypothesis, children from families with insecure and negative relationships and discrepant experiences would not show reduced mental health problems and increased psychosocial resources across the assessments. Finally, according to the buffering hypothesis, children from families with secure and positive relationships and those with moderately secure and neutral relationships would show reduced mental health problems and increased psychosocial resources across the assessments. The second aim was to analyze how family types are generally associated with children's mental health problems and positive resources, and the third aim was to determine whether traumatic war events and child gender influence the impact family type has on the intervention's effectiveness.

METHOD

PARTICIPANTS AND PROCEDURE

The current study uses data from a subsample of 325 families from a larger randomized intervention study (N=482, Punamäki et al. 2017) that examined the effectiveness of a psychosocial intervention program three months after the Gaza War in 2008-2009. The subsample consisted of families in which both parents and one child between age 10 and 13 (M=11.35, SD=0.57; 49% girls) from each family responded to the questionnaires. The children participated at baseline, pre-intervention (T1), three months after, at post-intervention (T2), and six months later in a follow-up (T3).

The children and their parents were given information sheets about the intervention, which explained the study procedure and asked about their willingness to participate in the questionnaire. Six research assistants collected the children's data in the classrooms, and the children took the parents' questionnaires home to be completed and returned them to the assistants in closed envelopes. The fourth author of this paper (Samir R. Qouta) supervised the data collection through weekly consultations with research assistants and school visits.

In the data on the families, the participation rates were 68.2 percent (n=377) for mothers and 68.0 percent (n=328) for fathers. The subsample of 325 families did not differ from the families that did not participate (n=157) in terms of fathers' or mothers' work status (respectively, $\chi^2(1)=0.38$, p=ns; and $\chi^2(1)=0.01$, p=ns); place of residence ($\chi^2(1)=0.28$, p=ns); family structure ($\chi^2(2)=2.3$, p=ns); or family size

($\chi^2(2)=0.11$, $p=ns$). However, the family sample was more biased toward having girls as the target child (56.1%) than the nonparticipating families (35.2%) ($\chi^2(1)=17.72$, $p<.0001$).

The sampling of the randomized intervention study participants involved four phases. First, we selected two regions from the Gaza Strip that were heavily bombed during the war on Gaza in 2008-2009, North Gaza and Gaza City. Second, we selected the participant schools using a simple random-sampling algorithm (8 schools from 160 potential schools located in the two areas). Third, one sixth-grade and one seventh-grade class were randomly chosen in the eight schools, resulting in 16 classes being used in the study. Finally, of the 16 total school classes, every second class was randomly selected and placed in either the intervention or the control group ($n=242$ and $n=240$).

The ethics boards of the Palestinian Ministry of Education and the Gaza Community Mental Health Program reviewed and accepted the study's protocol and measurements, and the school authorities granted permission to conduct the study.

THE INTERVENTION

The TRT is a manualized intervention procedure with clear session procedures developed by Smith, Dyregrov, and Yule (2000) for the Children and War Foundation. The intervention, which consisted of two weekly two-hour sessions, lasted for four weeks. The counsellors followed an Arab-language manual, and fidelity was ensured by holding weekly preparatory and supervisory meetings. The TRT involves evidence-based tools based on elements of cognitive behavioral therapy, and it aims to help children develop effective coping skills, empowerment, and emotion regulation through narrative, imagery, and body- and mind-related and psycho-educational techniques. The intervention techniques were aimed at reducing intrusion, avoidance, and arousal symptoms by enhancing children's symbolic, verbal, and kinaesthetic processing of traumatic experiences.

All sessions started with a warm-up, an introduction to the topic, and a review of the homework. It was crucial to create a sense of safety and to provide meaningful tools that helped the children frame and regulate their overwhelming negative emotions and painful experiences, to recognize their own and others' stress reactions, and to revitalize their numbed feelings, as well as to enhance peer relations in the group. Problem-solving, storytelling, drawing pictures of their frightening experiences and dreams, and role-play techniques were also applied.

Learning and practicing how to regulate their fears and horrors were introduced in a relaxed and playful manner, which taught the children to link their bodily sensations with their traumatic experience, feelings, and emotions. The parents were informed about and encouraged to join in the children's TRT homework, which included sleep hygiene, and talking about dreams and nightmares.

MEASURES

FAMILY TYPES

In a previous study (Punamäki et al. 2017), four family types based on parents' and children's attachment relationships, parenting practices, and sibling relationships were identified by cluster analysis. Parental attachment security was measured by a ten-item scale of "parents' acceptance and willingness to serve as an attachment figure" (Kerns et al. 2000). Mothers and fathers used a five-point scale to indicate how well the descriptions corresponded to their attitudes and behavior toward the target child. The averaged sum variables that were formed showed moderate reliability (Cronbach's α -values .69 for mothers and .68 for fathers). The scale had not previously been used with Palestinian adults. Children's attachment style was measured by the shortened coping strategies questionnaire (CSQ; Finnegan, Hodges, and Perry 1996) and the security scale (Kerns, Klepac, and Cole 1996), which involved 28 everyday situations that reflected avoidant, preoccupied, and secure attachment to mothers. Children answered using two-stage methods (Harter 1982) to evaluate their typical responses to threatening situations. The sum variables formed showed low to moderate reliabilities (Cronbach's α -values .66 for felt security, .63 for avoidant, and .54 for preoccupied attachment styles). The scales had not been used previously with Palestinian children. Parenting practices were assessed by the 20-item child psychological maltreatment questionnaire (Khamis 2000), on which the child participants estimated how well the descriptions fit their parents, and mothers and fathers responded about their own behavior toward the target child using a five-point scale. Three averaged sum variables were constructed for emotional abuse, emotional neglect, and harsh parenting, both separately for the child and combined with the parents (Cronbach's α -values ranging between .77 and .89). The questionnaire had been used previously with Palestinian children and showed good reliability and validity (Khamis 2000). Siblingship quality was assessed by the scale developed by Dunn et al. (1994), which reflected positive (warmth and intimacy) and negative (conflict and rivalry) relationships. Children estimated their interactions with an older (11 items) and a younger (11 items) sibling using a five-point scale. Averaged sum variables

were constructed for warmth, intimacy, conflict, and rivalry in siblingship with reasonable reliability (Cronbach's α -values .72, .68, .75, and .79, respectively). The siblingship quality scale had been used previously among Palestinian children, and it showed sufficient reliability and good validity (Diab et al. 2018; Diab et al. 2014; Peltonen et al. 2010).

We used cluster analyses to identify distinct family types, based on 15 sum variables of mother, father, and child attachment, parenting practices, and sibling relationships. Our analysis involved a hierarchical cluster analysis to define the number of initial clusters and the dendrogram for their visual inspection, as well as a K-means cluster analysis to confirm the cluster membership (Tabachnick and Fidell 2013). The analyses identified four family types. In families with security and positive relationships (36.2%, $n=102$), both parents had high secure attachment and the child showed low avoidant attachment, high warmth and intimacy, and low conflict and rivalry in siblingship; all family members reported low levels of abuse and harsh parenting. In families experiencing insecurity and negative relationships (15.6%; $n=44$), both parents and the child reported low secure and high avoidant attachments and high abusive and harsh parenting practices, and the siblingships were characterized by high conflict and rivalry and low warmth. In the families with moderately secure and neutral relationships (25.2%; $n=71$), both parents showed low secure attachment, while the child showed mixed secure and insecure attachments, combined with positive sibling relationships; all family members reported moderate levels of abusive and harsh parenting practices. Finally, in the families with discrepant experiences (23.0%; $n=65$), both parents showed high secure attachment, while the child showed low secure and high avoidant attachments. The parents reported very low abuse and harsh parenting practices, while the children reported that both were high. For a more detailed description of these measures and methods for forming the family system types, see Punamäki et al. (2017).

CHILDREN'S MENTAL HEALTH: SYMPTOMS AND RESOURCES

CHILDREN'S PTSD

We evaluated the symptoms using the 13-item Children's Revised Impact Event Scale (CRIES-13; Dyregrov, Gjestaad, and Raundalen 2002). The scale covers the three core dimensions: re-experiencing (4 items), avoidance (4 items), and hyperarousal (5 items) symptoms. Children indicated on a four-point scale how often they had experienced each symptom during the previous two weeks (from 0, "not at all," to 4, "often"). A total score was constructed showing moderate

FAMILY RELATIONSHIPS AND PSYCHOSOCIAL GROUP INTERVENTION EFFECTIVENESS

reliabilities (Cronbach's α -values .62 at T1, .72 at T2, and .63 at T3). The CRIES-13 has been shown to be reliable and is validated for use with Palestinian children (Kolltveit et al. 2012; Veronese et al. 2019), although use of the PTSD concept in ongoing life-threatening conditions has been criticized (Altawil, El Asam, and Khadaroo 2018).

CHILDREN'S EMOTIONAL AND CONDUCT PROBLEMS

We used the Strengths and Difficulties Questionnaire (SDQ; Goodman, Meltzer, and Bailey 1998) to measure emotional and conduct problems. Emotional problems include symptoms of depression and anxiety, and conduct problems include hyperactive and aggressive behaviors. All four scales contain five items that describe behaviors, thoughts, and moods. The children used a three-point scale to estimate how well the description fit them (0, "not at all," 1, "somewhat," 2, "yes, fits well"). We constructed sum scores for emotional and conduct problems, both of which showed good reliability (Cronbach's α -values for emotional problems .71 at T1, .73 at T2, and .72 at T3, and for conduct problems .79 at T1, .76 at T2, and .75 at T3). The SDQ had been used previously with Palestinian children, and showed good or moderate reliability and good validity (El-Khodary and Samara 2020; Peltonen et al. 2010; Thabet, Stretch, and Vostanis 2000).

CHILDREN'S POSITIVE RESOURCES

We used the 14-item Mental Health Continuum-Short Form (MHC-SF) for youth (Keyes et al. 2008) to measure the degree of emotional and social resources available to children. The scale includes dimensions of positive emotional affects ("I have warm and trusting relationships with others"), psychological autonomy and self-acceptance ("I feel happy"), and social contribution and coherence ("The way our society works makes sense to me"). Children used a five-point scale to evaluate how often they had felt or thought in the described ways during the previous month (0, "never," 1, "rarely," 2, "sometimes," 3, "often," 4, "every day"). We calculated total sum variables (Cronbach's α -values .83 at T1, .82 at T2, and .85 at T3).

PROSOCIAL BEHAVIOR

We used the five-item prosocial behavior scale of the SDQ (Goodman et al. 1998) that covers willingness to share with and help others. Examples of the prosocial behavior items are "I usually share toys and school tools with other children" and "I help other people if something bad happens to them or if I see them upset."

The children used the three-point scale to evaluate how well the descriptions fit them (0, “not at all,” 1, “somewhat,” 2, “yes, fits well”). We constructed a sum variable of prosocial behavior, but the internal consistency was weak (Cronbach’s α -values .63 at T1, .62 at T2, and .65 at T3).

CHILDREN’S TRAUMATIC WAR EXPERIENCES

We measured traumatic war experiences by a scale of 14 traumatic events corresponding to Criterion A of the PTSD diagnosis in *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association 2013), which include experiencing and witnessing actual or threatened serious injury or death. The children reported whether they had had such an experience during the war (0, “no,” 1, “yes”). We constructed a sum variable by counting the “yes” answers.

DEMOGRAPHIC VARIABLES

Mothers and fathers reported family income, parental education, work situation, family size, nature of the family (extended or core), and their children’s ages and genders.

TRANSLATIONS

The research instruments for sibling relationships, parenting practices, CRIES-13, SDQ, and traumatic war experiences scales were available in Arabic. For the present study, a bilingual psychologist first translated the children’s and parents’ attachment scales from English into Arabic and the research group then translated it back.

STATISTICAL ANALYSES

We conducted all analyses using IBM SPSS Statistics 25. We present the distributions of demographic variables as percentages, and we determined correlations between study variables using the Pearson Cross Product method. To analyze how family type is associated with the effectiveness of the TRT psychosocial intervention, we applied multiple repeated-measure analyses of variance with covariates (MANCOVA) to a three-wave (baseline T1, post-intervention T2, and follow-up T3) assessment of PTSD symptoms, emotional and conduct problems, and positive resources and prosocial behavior. We calculated the main effects for time (T1, T2, and T3, indicating dependent variables) and independent between-subject variables of the intervention versus the control group and four family types (security and positive relationships, insecurity and negative relationships, discrepant

FAMILY RELATIONSHIPS AND PSYCHOSOCIAL
GROUP INTERVENTION EFFECTIVENESS

experiences, and moderately secure and neutral relationships). We further tested the interaction term between the intervention and family types, and included children's traumatic war experiences and gender as the covariates. We analyzed the tests of within-subject contrasts (three-wave assessment) as either linear or quadratic.

The sample included 16 school classes, with 30 pupils per class on average. The nonindependence of their responses could cause bias, due to the reduced sample variation in cluster sampling (Ukoumunne et al. 1999). The within-school class biases were checked by estimating the intraclass correlations, the average being .036 (CI=.018-.059), and the design effects (DEFFs, all <2.00). The design effects were close to one for the attachment, parenting practices, and siblingship variables, and ranged between 1.5 and 2.78 for emotional and conduct problems in some of the assessment points.

There may be floor and ceiling effects, as children from different family types may report either maximum or minimum scores of mental health problems and psychosocial resources. The criterion for the flooring effect is that more than 15 percent of the children from a certain family type would score the lowest values of mental health problems or resources. The corresponding ceiling effect is that more than 15 percent of children from a certain family type would score the highest values of mental health problems or resources. We found a flooring effect for conduct problems (22.5%) in children from families with secure and positive relationships, and a ceiling effect for prosocial behavior in children from families with secure and positive relationships (27.4%) and from families with moderately secure and neutral relationships (22.5%). However, as the values were not outliers, we did not replace them.

RESULTS

DESCRIPTIVE STATISTICS

Table 1 shows the demographic characteristics reported by the parents and children. About a quarter (24%) of the fathers had a university education, while fewer than 10 percent of the mothers had one. Despite their education, about half (49%) of the fathers were unemployed, and almost all (93%) of the mothers worked at home. The statistics correspond with the problematic economic and social situation in the Gaza Strip that is largely caused by the Israeli military siege and international economic boycott (UN OCHA 2009). As for family size, about

a quarter (26%) of families had more than eight children, and almost one-third (29%) of the participants lived in extended families.

Table 1: Percentage and Frequencies of Demographic Factors

	%	N
Place of living ^a		
City	84.3	284
Refugee camp	3.3	11
Village	12.5	42
Status ^a		
Refugee	11.3	38
Citizen	88.7	299
Father's education ^b		
Elementary	21.1	69
Preparatory	28.3	93
Secondary	26.2	86
University	24.4	80
Mother's education ^a		
Elementary	19.6	66
Preparatory	32.4	109
Secondary	39.9	134
University	8.0	27
Father's work situation ^b		
Unemployed	49.3	161
Worker	12.8	42
Public employee	24.9	82
Entrepreneur/ self-employed	13.1	43
Mother's work situation ^a		
Works at home	93.2	314
Worker	3.0	10
Public employee	3.9	13
Family type ^a		
Immediate	61.9	209
Extended	28.9	97
Tribe	9.1	31

**FAMILY RELATIONSHIPS AND PSYCHOSOCIAL
GROUP INTERVENTION EFFECTIVENESS**

	%	N
Family size ^a		
Small (1-4)	23.8	80
Medium (5-7)	50.0	168
Large (8 or more)	26.2	88

Note: ^a N=336-337; mother-reported, difference due to missing information; ^b N=328; father-reported

The supplemental table (see Appendix) presents the means, standard deviations, and bivariate correlations between children’s mental health problems and psychosocial resources and the covariates at baseline, post-intervention, and follow-up. The results show that emotional and conduct problems were significantly correlated within a single assessment and between the three assessments, whereas PTSD symptoms were not significantly correlated with emotional and conduct problems within or between assessment times. However, PTSD symptoms were correlated with each other between the three assessment times. Traumatic war experiences were positively correlated with children’s mental health problems at the three assessment times, except for follow-up PTSD symptoms. Correlation analysis further revealed that boys reported more conduct disorders and girls more positive resources at all assessment times. Boys reported more than girls traumatic war experiences.

FAMILY TYPE, INTERVENTION, AND CHILDREN’S MENTAL HEALTH

Table 2 summarizes the MANCOVA’s main and interaction effects between intervention and family type on children’s mental health problems and psychosocial resources at baseline, post-intervention, and follow-up (F and η^2 values). In terms of the impact family type has on the effectiveness of the intervention, the results showed significant interaction effects on emotional problems and positive resources between the intervention and family types, whereas the intervention and family type had separate main effects on PTSD symptoms and prosocial behavior, and family type alone had a main effect on conduct problems. Figures 1a and 1b illustrate the impact family type had on changes in emotional problems in the intervention (1a) and control (1b) groups, and on changes in positive resources in the intervention (Figure 2a) and control (Figure 2b) groups.

Table 2: Summary of Repeated-Measure MANCOVA Main and Interaction Effects of Psychosocial Intervention and Family Types on Change in PTSD^a Symptoms, Emotional and Conduct Problems, and Positive Resources across Three-Wave Follow-Up: F-values and Partial Eta Squared η^2

	PTSD Symptoms		Emotional Problems		Conduct Problems		Positive Resources		Prosocial Behavior	
Within-subject ANCOVA ^b	F-values ^c	η^2	F-values ^c	η^2	F-values ^c	η^2	F-values ^c	η^2	F-values ^c	η^2
<i>Main effects</i>										
Time (pre-, postfollow-up)	3.28* 4.42* _{Linear}	0.01	5.87** 8.22** _{Linear}	0.02	6.47** 10.80*** _{Quadratic}	0.03	2.41 3.91* _{Quadratic}	0.01	2.66 3.79* _{Linear}	0.01
Intervention groups	5.77** 9.77** _{Linear}	0.02	1.04	0.01	0.66	0.01	0.31	0.01	2.88* 4.48* _{Linear}	0.01
Family type	2.10	0.03	1.95	0.02	2.55* 2.61* _{Quadratic}	0.03	3.35** 5.34*** _{Linear}	0.04	2.99** 3.06* _{Linear}	0.04
<i>Interaction effects</i>										
Intervention * Family type	0.91	0.01	2.06* 3.84** _{Quadratic}	0.03	0.64	0.01	2.79** 4.34** _{Linear}	0.03	0.70	0.01
<i>Covariates</i>										
Traumatic war events	1.67	0.01	0.97	0.01	0.92	0.01	1.83	.01	0.76	0.01
Gender	1.83	0.01	0.89	0.01	3.30* 4.88* _{Linear}	0.02	0.68	.01	1.02	

Note: ^a PTSD symptoms; ^b Mauchly's test did not violate the sphericity assumption for PTSD, positive resources, and prosocial behavior, but violated the sphericity assumption for emotional problems, $F(2,305)=11.42$, $p<.003$, and conduct problems, $F(2,305)=9.18$, $p<.01$. For these variables, Huyn-Felt corrected results are reported (for others Greenhouse-Geisser). ^c The upper F-values are for within-subject effects and the lower F-values are for within-subject contrasts (either linear or quadratic; not reported, if within-subject effect is nonsignificant)

* $p<.05$, ** $p<.01$, *** $p<.001$

FAMILY RELATIONSHIPS AND PSYCHOSOCIAL
GROUP INTERVENTION EFFECTIVENESS

Figure 1a: Emotional Problems According to Family Types—
Intervention Group

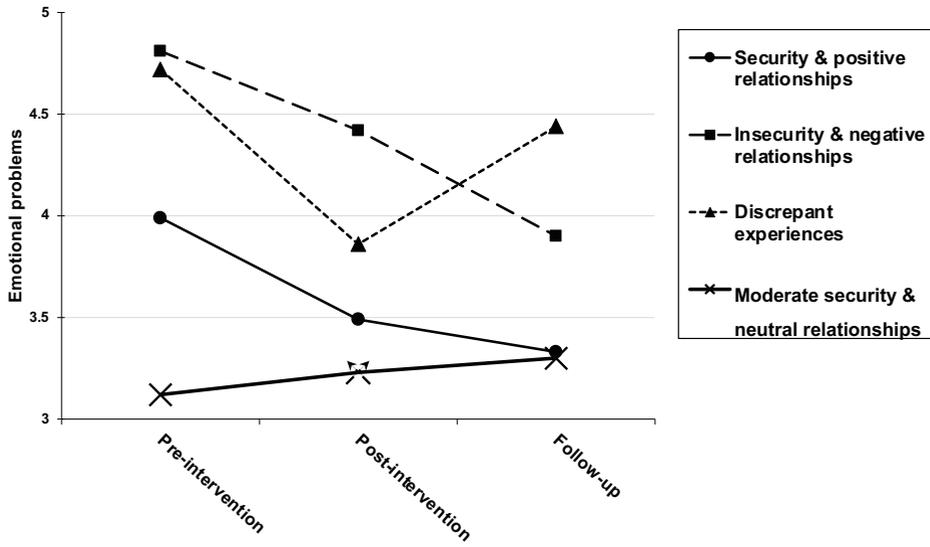


Figure 1b: Emotional Problems According to Family Types—Control Group

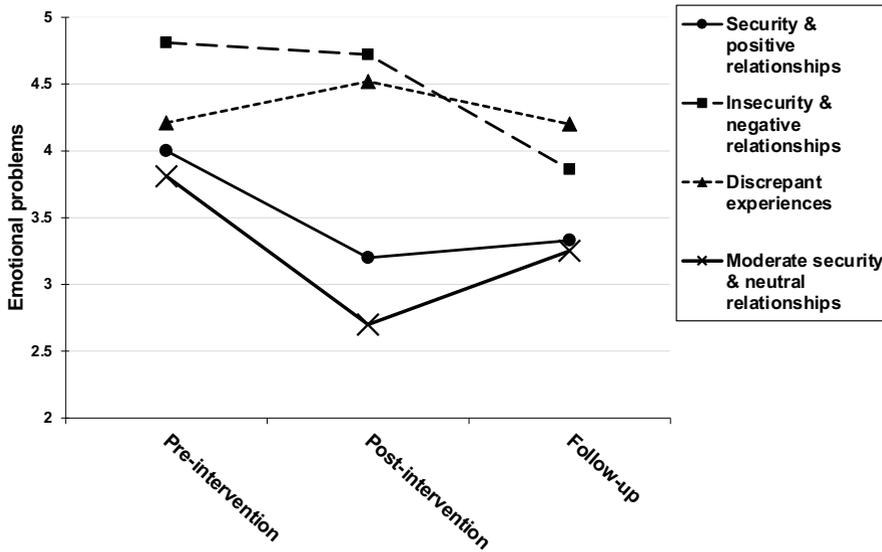


Figure 2a: Positive Resources According to Family Types—Intervention Group

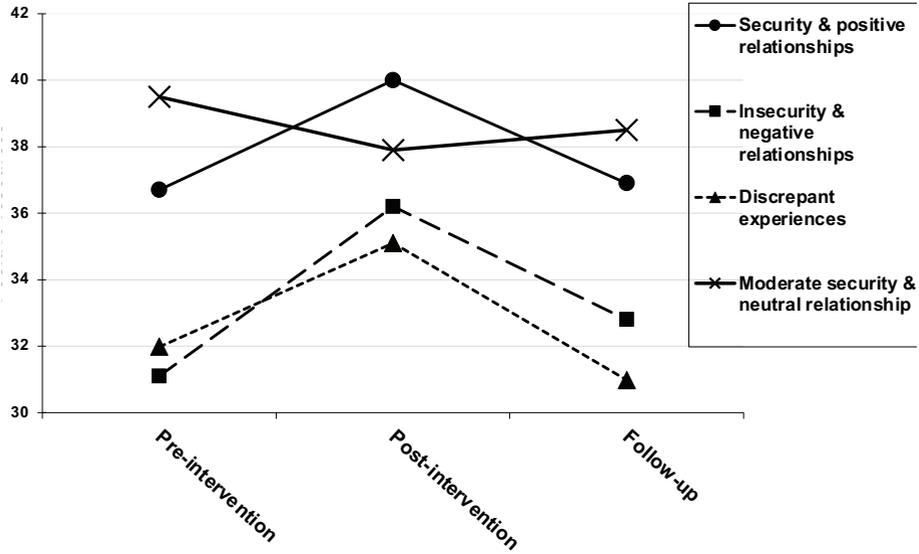
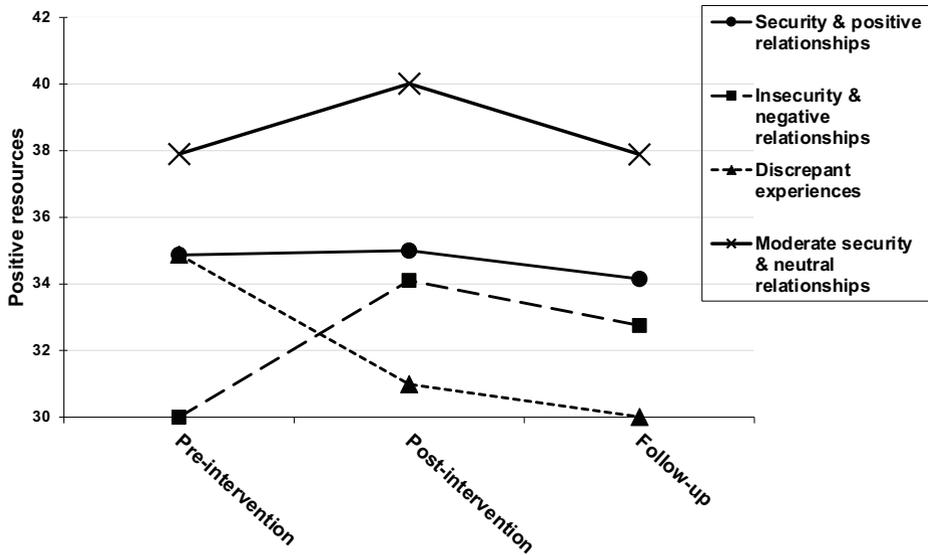


Figure 2b: Positive Resources According to Family Types—Control Group



In accordance with the compensation hypothesis, children from families with insecure and negative relationships and discrepant experiences benefitted from the TRT intervention. As illustrated in Figure 1a, among children from families with insecure and negative relationships, emotional problems decreased significantly and linearly from baseline through post-intervention to follow-up in the

FAMILY RELATIONSHIPS AND PSYCHOSOCIAL
GROUP INTERVENTION EFFECTIVENESS

intervention group. Among children from families with discrepant experiences, emotional problems decreased from baseline to post-intervention, but they then increased by follow-up, which indicates a quadratic change.

Further, in accordance with compensation hypothesis, children from families with insecure and negative relationships and discrepant experiences reported an increase in positive resources from baseline to post-intervention in the intervention group, as illustrated in Figure 2a. However, positive resources then decreased by follow-up, which indicates quadratic change.

Buffering hypothesis was substantiated concerning emotional problems, but not positive resources. Among children from families with secure and positive relationships emotional problems decreased linearly in the intervention group. Further, emotional problems decreased also in control group from baseline to post-intervention among children from families with secure and positive relationships and with moderately secure and neutral relationships.

Table 2 also shows repeated-measure main effects of time and intervention on mental health problems and psychosocial resources. Significant time main effects indicate that PTSD symptoms and emotional problems decreased linearly, whereas conduct problems decreased quadratically from baseline through post-intervention into follow-up. The general change in terms of positive resources and prosocial behavior was not significant, although the within-subject contrasts were significant. Significant intervention main effects indicated that PTSD symptoms decreased linearly and prosocial behavior increased linearly, especially in the intervention group.

The family types differed significantly (between-subject effects) in children's general levels of emotional problems ($F(3,244)=9.23, p<.0001$) and conduct problems ($F(3,244)=11.52, p<.0001$), as well as in positive resources ($F(3,244)=16.23, p<.0001$), and prosocial behavior ($F(3,244)=8.07, p<.0001$). Children from the families with secure and positive relationships and moderately secure and neutral relationships showed the lowest levels of emotional and conduct problems, while those in the families with insecure and negative relationships and discrepant experiences showed the highest levels. Meanwhile, children in the families with secure and positive relations and moderately secure and neutral relations showed the highest levels of positive resources and prosocial behavior, while those with insecure and negative relations and discrepant experiences showed the lowest.

Child gender was a significant covariate, but the effect of interaction between gender and family type, when added in the within-measure MANCOVA analysis, was nonsignificant. Traumatic war events were a nonsignificant covariate, which indicates that they did not affect the family type and intervention-related mental health changes.

DISCUSSION

The present study analyzed how dynamic family relationships influence the effectiveness of psychosocial interventions in improving children's mental health after experiencing war in the Palestinian context. Research on traumatized children emphasizes the importance of families as helping agents (Betancourt et al. 2013; Panter-Brick et al. 2014), and secure and supportive relationships are known to contribute to good mental health and even to function as buffers against the negative effects of war (Barber et al. 2005; Eltanamly et al. 2021; Montgomery 2011). However, few studies have examined the moderating impact of attachment, parenting, or sibling relationships on the effectiveness of help provided to war-traumatized children. In accordance with family systems theories, we employed a person-oriented approach to depict the complex dynamics of these relationships (Bergman et al. 2003). Family system dynamics also provided hypotheses about how and why children living in unique family types may benefit differently from psychosocial interventions, here the TRT, dedicated to improving their mental health. Our results supported the compensation hypothesis of psychosocial intervention, as emotional problems decreased and positive resources increased, especially among children from families with insecure and negative relationships and discrepant experiences. The buffering hypothesis was also substantiated, as children from families with secure and positive relationships showed decreased emotional problems both in the intervention and control groups. The hypothesis of accumulation dynamics among children with insecure and negative family relationships was not supported, as the intervention effects were not significant among them.

WHY COMPENSATION IN WAR?

Children from different family types have highly unequal access to social and emotional resources. In families with insecure and negative relationships, children are deprived of familial safety, trust, and warmth, which is especially harmful when experiencing traumatic war events. These children often lack parental support, stabilization, and consoling when afraid and worried. They also have fewer opportunities to learn the optimal cognitive and emotional responses

needed to manage hardships (Meiser-Stedman 2002), or to share and vent about painful and shameful experiences (Punamäki 2014). Children living in families with discrepant experiences may be more likely to experience a sense of isolation and mistrust, as well as a lack of affiliation and sharing with other family members (Lindblom et al. 2014). Therefore, the core elements of psychosocial interventions, including the TRT, must meet and satisfy the security and survival needs of children whose family relationships are insecure, negative, and discrepant. In other words, interventions can compensate by providing children with experiences that are not possible in their families.

In the TRT, children learn to create a safe place and imaginary helpers, and to enjoy playful ways of learning emotion recognition, regulation, and expression. They gradually learn to manage their overwhelming trauma-related fears and anxieties, and to employ effective coping strategies in multimodal ways through visual, auditory, kinaesthetic, and symbolic activities (Smith et al. 2000). Children can learn to trust their peers through group processes and enjoy the emotional availability of the adult facilitators. These compensation dynamics may also be attributed to feelings of surprise, joy, and empowerment, which explains the effective mental health recovery of children who are habituated to insecurity and disappointing social experiences. In interviews with the participating children, some said they were amazed at how much strength, sense of belonging, and power they could find in themselves. Similar dynamics were documented among torture survivors with insecure attachment styles, who benefitted from therapy treatments once they were able to trust in the benevolence of others (Kanninen, Salo, and Punamäki 2000).

Research has found analogous compensation dynamics around early interventions, biological vulnerability, and adolescents' search for safety. There is evidence that small children from socially deprived environments (e.g., low socioeconomic standing, overcrowded residences, and substance use) especially benefit from good-quality day care (Carneiro and Ginja 2014). Infant-related stressors, such as low birth weight and developmental deficits, can intensify a mother's efforts to provide compensatory and sensitive care, thereby supporting optimal child development (Korja, Latva, and Lehtonen 2012). Compensation dynamics also emerge in conditions where adolescents who have insecure attachment to their parents seek to create secure attachments to their peers and friends, which can result in good mental health (Helsen, Vollebergh, and Meeus 2000; Kobak et al. 2007).

We could not find empirical evidence of psychosocial interventions or therapies that work especially well among participants with low resources, which indicates compensation dynamics. The available studies on the preconditions (moderators) of psychosocial interventions among war-traumatized children emphasize their vulnerabilities when explaining the ineffectiveness (Brown et al. 2017), thus implicitly supporting the accumulation hypothesis, which suggests that children who lack social resources are less able to benefit from enriching experiences. Yet, many interventions and therapies for traumatized people (especially those based on attachment theories) explicitly aim at compensating for insecure, neglected, and abusive experiences by providing a safe haven, empowerment, and trust in therapeutic relationships (Kinniburgh et al. 2005), and by improving parental sensitivity and competence and family relations (Johnson et al. 2018).

The buffering hypothesis was substantiated concerning children from families with highly secure and positive relationships. Their emotional symptoms decreased not only in the intervention, but also in the control group, thus suggesting that children in secure families can improve their good mental health without the help of the psychosocial intervention. In other words, these children were not in urgent need of psychosocial help, as time and life itself were healing them. This result emphasizes the importance of tailoring interventions to children's comprehensive needs, including a sense of security in human relationships. War-affected children should be screened for mental health problems and, according to the triaged model of services (Murray and Jordans 2016), they can be assigned to different interventions based on the severity of their problems and diagnoses. The present study suggests that the screening and treatment assignment could be based on both children's psychosocial vulnerabilities and resources.

The participants in our study have had long-term and multiple exposure to severe war events, such as human and material losses, horrors, and threats to life. Personal exposure was not, however, a significant covariate in the role of family type in the effectiveness analysis. It is possible that high-quality family relationships can decisively enhance children's recovery from traumatic war events, as these families invest greatly in protecting their children during wartime (Panter-Brick et al. 2014; Thabet et al. 2009). However, correlational analysis revealed that a high level of children's traumatic war experiences was significantly associated with a high degree of mental health problems and low psychosocial resources across all assessment points (except PTSD symptoms at follow-up). Traumatic experiences thus constitute a severe threat to children's wellbeing and psychosocial adjustment in war conditions; fortunately, they did not influence the effectiveness of the intervention.

STUDY LIMITATIONS AND STRENGTHS

The study deserves criticism for its reliance on self-reports, the use of a cluster analysis method, and the negatively oriented parenting measure. We had to use self-reports of attachment styles due to our limited budget and relatively large sample. To study parents' attachment, a high standard could theoretically be the adult attachment interview, which provides dynamic dimensions of coherence or an unresolved traumatic past (Bakermans-Kranenburg and van IJzendoorn 2009). The criteria for intervention effectiveness (children's PTSD, emotional and conduct problems, and positive resources and prosocial behavior) were also based on self-reports. Clinical interviews on mental health problems would have been more accurate and insightful than their own responses, and parent and teacher observations about children's behavior are considered reliable. We used cluster analyses to identify the family types, which is based on the similarities of family members' responses. Latent profile modeling provides goodness-of-fit indices for latent class membership, which might strengthen the determination of cluster numbers and sizes (McCutcheon 2002; Tabachnick and Fidell 2013). Finally, the parenting quality measure was focused on highly negative aspects of parenting, including harsh practices and neglect. This choice was based on earlier studies on the transgenerational transmission of trauma (Yehuda, Halligan, and Grossman 2001); including supportive and loving parenting styles would have provided more information and validity.

The study contributes to family systems and trauma research by identifying dynamic family groups based on relevant relationships in attachment, parenting, and siblingship subsystems. The person-oriented family approach enabled us to obtain insightful information about the relationships between civilian mothers, fathers, children, and siblings in the highly stressful and traumatic sociopolitical context of war, military violence, and the struggle for national independence. A family systems approach is considered important but is seldom studied empirically. The dynamic approach is also appropriate, as a large number of families have been forced to flee from their homes due to war, persecution, and human rights abuses and to seek safety and refuge in more peaceful countries.

CONCLUSIONS

The political-military situation involving siege, occupation, and international boycott is depriving Palestinian children of governmental protection, safety, and basic human rights. Families carry the heavy burden of shielding their children from insecurity, and from the detrimental effects of war and violence. Psychosocial interventions, including the TRT, can help to maintain children's positive mental health; this effect may be even more pronounced when families struggle with overwhelming insecurity.

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GROUP INTERVENTION EFFECTIVENESS

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FAMILY RELATIONSHIPS AND PSYCHOSOCIAL
GROUP INTERVENTION EFFECTIVENESS

APPENDIX

Table A1: Means, Standard Deviations, and Bivariate Correlations between Children's Mental Health Problems and Psychosocial Resources and Covariates

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
<i>Pre-intervention^a</i>									
1. PTSD symptoms	29.53	10.09							
2. Emotional problems	4.08	2.11	.15**						
3. Conduct problems	2.53	2.05	.09*	.37***					
4. Positive resources	34.86	9.56	-.07	-.13*	-.19**				
5. Prosocial behavior	7.60	2.04	-.05	-.22**	-.48***	.27***			
<i>Post-intervention^a</i>									
6. PTSD symptoms	26.30	11.26	.21**	.27***	.07	-.04	-.09*		
7. Emotional problems	3.55	2.02	.12*	.31***	.19**	-.12*	-.17**	.44***	
8. Conduct problems	1.93	1.80	.08	.17**	.19**	-.08	-.16**	.11*	.31***
9. Positive resources	36.04	9.12	-.03	-.25***	-.26***	.34***	.21**	-.08	-.24**
10. Prosocial behavior	7.85	1.89	-.05	-.06	-.16**	.18**	.20**	-.02	-.15**
<i>Follow-up^b</i>									
11. PTSD symptoms	24.91	9.43	.14*	.18**	.12*	.02	-.09	.42***	.25**
12. Emotional problems	3.51	2.21	.20**	.30***	.29***	-.12*	-.17**	.38***	.47***
13. Conduct problems	2.35	1.87	.04	.23***	.25***	-.13*	-.13*	.09*	.21**
14. Positive resources	34.05	9.76	-.12*	-.15*	-.18**	.32***	.12*	-.11*	-.18**
15. Prosocial behavior	6.69	2.21	-.07	-.06	-.21***	.21***	.19**	-.04	-.16**
16. Traumatic war events	8.06	4.83	.09*	.10*	.13*	-.09*	-.09*	.09*	.18**
17. Gender			.01	-.02	.13*	-.13*	-.14*	-.01	-.02

Note: ^a N=377, ^b N=321.

p*<.05, *p*<.01, ****p*<.001 or *p*<.0001

Variable	8	9	10	11	12	13	14	15	16
<i>Pre-intervention^a</i>									
1. PTSD symptoms									
2. Emotional problems									
3. Conduct problems									
4. Positive resources									
5. Prosocial behavior									
<i>Post-intervention^a</i>									
6. PTSD symptoms									
7. Emotional problems									
8. Conduct problems									
9. Positive resources	-.25**								
10. Prosocial behavior	-.41***	.27**							
<i>Follow-up^b</i>									
11. PTSD symptoms	.08	.01	-.02						
12. Emotional problems	.18**	-.22**	-.08	.35***					
13. Conduct problems	.29***	-.26***	-.26***	.08	.44***				
14. Positive resources	-.17**	.43***	.19**	.02	-.33***	-.39***			
15. Prosocial behavior	-.24***	.27***	.18**	-.03	-.28***	-.52***	.39***		
16. Traumatic war events	.18**	-.20**	-.10*	.06	.25***	-.19**	-.21**	-.17**	
17. Gender	.16**	-.13*	-.18**	-.22**	.04	.30***	-.21**	-.27***	.28***