
Can Psychosocial Intervention Improve Peer and Sibling Relations Among War-affected Children? Impact and Mediating Analyses in a Randomized Controlled Trial

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Abstract

Social resources are considered important protectors in traumatic conditions, but few studies have analyzed their role in psychosocial interventions among war-affected children. We examined (1) whether a psychosocial intervention (teaching recovery techniques, TRT) is effective in improving peer and sibling relations, and (2) whether these potentially improved relations mediate the intervention's impacts on children's mental health. Participants were 428 Palestinian children [10–13 (mean = 11.29, standard deviation SD = .68)-year-old girls (49.4 percent) and boys (50.6 percent)], who were cluster-randomized into the TRT and wait-list control groups. They reported the quality of peer (friendship and loneliness) and sibling (intimacy, warmth, conflict, and rivalry) relations, and posttraumatic stress, depressive and psychological distress symptoms, as well as psychosocial well-being at baseline (T1), postintervention (T2), and six month follow-up (T3). Results showed gender-specific TRT intervention effects: Loneliness in peer relations reduced among boys and sibling rivalry reduced among girls. The TRT prevented the increase in sibling conflict that happened in the control group. The mediating hypothesis was partially substantiated for improved peer relations, and beneficial changes in sibling relations were generally associated with improved mental health.

Keywords: war; peer relations; siblingship; intervention

Introduction

It is agreed that traumatic war experiences have negative impacts on children's mental health and development. Luckily, increasing evidence also shows that good social

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relations can protect mental health in life-endangering conditions of war and military violence (Stichick Betancourt & Khan, 2008). Children who enjoy loving family interactions and good peer relations show relatively less posttraumatic stress disorder (PTSD), depression, and other mental health problems in armed conflicts (Ehnholt & Yule, 2006; Peltonen, Qouta, El Sarraj, & Punamaki, 2010). Although social support and resources are considered crucial for war-affected children, they are seldom assessed as outcomes or as putative mechanisms for symptom reduction in intervention studies. Accordingly, we examine the role of peer and sibling relations in psychosocial intervention among Palestinian children after a major war during the ongoing Middle-Eastern military conflict.

War Trauma, Mental Health, and Social Relations

Research confirms that war-affected children have an increased risk for developing PTSD, characterized by reexperiencing the horrors in dreams and flashbacks, by avoiding reminders of trauma and numbing of feelings, as well as by constant arousal and vigilance to threats. They also suffer from depression and difficulties in emotional regulation and sleeping (Pfefferbaum, 1997; Pine, 2003). War trauma can also disrupt significant social relationships in family and school (Barber, 2001; Hodes, Jagdev, Chandra, & Cunniff, 2008; Peltonen et al., 2010). A study among Palestinian children ($N = 227$, 10–14-year-olds) confirmed that exposure to severe military trauma increased sibling rivalry and deteriorated friendship especially among girls (Peltonen et al., 2010). Also, Palestinian children who had experienced violence and losses were less likely to enjoy peer popularity and sibling support (Diab, 2011). The reasons may lie in traumatized children's regulatory difficulties and withdrawal from social contacts (Pennebaker, 1995).

Adequate social support, good relationships, and sufficient networks would, however, serve multiple functions in conditions of war and military violence. Support provides children assurance of receiving help when needed and feedback about their own behavior, as well as to validate and share their feelings and experiences with others (Caplan, 1974). Support can literally be lifesaving in war conditions, where information about the intentions and plans of the enemy soldiers and about availability of shelters is crucial for safety and survival.

Social support and good relationships give children a valuable message that they are loved, cared for, and provided protection in times of distress and danger (Cobb, 1976). Children's sense of security and protection is often dramatically shattered in war, when the enemy army attacks their homes and forces them to witness their parents as helpless and humiliated victims. A study revealed that as many as 98 percent of Palestinian children reported not feeling safe in their homes during the War on Gaza, and 94.5 percent thought that adults were unable to protect them (Thabet, Ibraheem, Shivram, Winter, & Vostanis, 2009). Traumatized children have extreme fear of being left alone, and their feelings of isolation make them painfully aware of their own fragility (Freud & Burlingham, 1943; Paardekooper, 2002).

Peer and Sibling Relations and Well-being

Peers and school become very important in early adolescence, as children spend an increasing amount of time with peers. Peer relations contribute to learning communi-

cation, expressing and regulating emotions, and understanding principles of loyalty, equity, and responsibility (Bukowski, 2004; Saarni, 1999). In optimal peer and friendship relations, children learn mutual trust, fairness, empathy, and emotional sharing, which become especially vital in traumatic conditions.

There is evidence that emotion venting and disclosure are associated with good mental health both generally (Pennebaker, 1995) and in the face of trauma (Mueller, Orth, Wang, & Maercker, 2009). Acceptance by peers and intimate friendships serve as a mirror of identity, self-esteem, competence, and worthiness (Asher, Hymel, & Renshaw, 1984; Bukowski, 2004) that all critically contribute to well-being. Research confirms that the ability to make and maintain friendships and participation in social networks is associated with good mental health and optimal development, and can protect children's mental health from the negative impacts of trauma (Peltonen et al., 2010).

Support from siblings is expected to reduce stress, encourage optimal coping behavior, and facilitate the recovery from traumatic experiences. There is evidence that children with close sibling relations show more emotional compassion and empathic perspective taking than those with distant siblingships (Dunn, Slomkowski, & Beardsall, 1994), and that warmth and intimacy in sibling relations enhance emotional understanding and self-disclosure (Howe, Aquan-Assee, Bukowski, Lehoux, & Rinaldi, 2001). Conflicting and negative sibling relations increase the risk for mental health problems (Fox, Barrett, & Shortt, 2002) whereas good relations provide a sense of security, assurance, and comfort in hardships and stress (Gass, Jenkins, & Dunn, 2007; Howe et al., 2001). Research is scarce about the mental health function of sibling relations among war-affected children, although some evidence is available on positive siblingship protecting mental health from military trauma (Peltonen et al., 2010). The beneficial mental health function of peer and sibling relations is thus widely agreed upon, and one could expect that intervention programs among war-affected children aim at enhancing support and optimal relationships.

Psychosocial Interventions and Social Resources

Three systematic reviews conclude that psychosocial interventions among war-affected children are, to some extent, effective in reducing mental health problems and that the beneficial outcomes are gender specific (Jordans, Tol, Komproe, & de Jong, 2009; Peltonen & Punamaki, 2010; Persson & Rousseau, 2009). All reviewers call for extending the intervention outcomes from symptom reduction into children's optimal social resources and other developmentally salient issues. The treatment methods included optimal cognitive-emotional processing of traumatic experiences, training of coping skills, and learning narrative, integrative, and creative expressive techniques. They further provide peer support, culturally relevant recreational activities, and psycho-education of normal and alarming trauma responses. Based on cognitive-behavioral treatment protocols, interventions typically involved exercises that comprehensively target traumatized children's cognitive (attention, memory, problem solving, attributes, explanations, and interpretation), emotional (recognition, regulation, and expression), social (sharing and supporting), and symbolic (fantasy, dream working, and drawing) developmental domains. For example, class-based intervention (CBI), applied among Nepalese and Indonesian children, involves cooperative play, expressive exercises of drama, dance, and music, and playful and narrative tools to build feelings of safety (Macy, Johnson-Macy, Gross, & Brighton, 2003).

The majority of studies focus on mental health as an effectiveness criterion, as reviewed below. For example, the CBI was applied for Nepalese (N = 325, 11–14-year-olds) and Indonesian (N = 495, 9–10-year-olds) traumatized children and was found to be successful in reducing posttraumatic stress symptoms (PTSS) in randomized controlled trials (RCT; Jordans et al., 2010; Tol et al., 2008). In addition, a group interpersonal therapy (IPT; 15 sessions) was effective in decreasing depression among refugee girls in Uganda (N = 209, 14–17-year-olds; Bolton et al., 2007), and a comprehensive preventive program provided for Bosnian adolescents (a 17-session trauma and grief component therapy, TGCT) reduced PTSD, pathological grief, and depressive symptoms (N = 55, 15–18-year-olds; Layne et al., 2008). Finally, a teacher-mediated prevention program (enhancing resilience among students experiencing stress; Gelkopf & Berger, 2009) was found to be effective in reducing posttraumatic, depressive, and somatic symptoms among war-affected Israeli children (N = 114, 13–14-year-olds).

Social resources are conceptualized in a number of ways as intervention outcomes, that is, prosocial behavior (Jordans et al., 2010; Peltonen, Qouta, El Sarraj, & Punamäki, 2012; Tol et al., 2008), improved social support and classroom social climate (Paardekooper, 2002; Stichick Betancourt & Khan, 2008), and adaptive psychosocial functioning (Berger, Pat-Horenczyk, & Gelkopf, 2007; Möhlen, Parzer, Resch, & Brunner, 2005; Onyut et al., 2005). One study employed improvement in peer and sibling relations as effectiveness criteria (Peltonen et al., 2012), and three studies assessed changes in aggression (Jordans et al., 2010; Peltonen et al., 2012; Tol et al., 2008).

Concerning effectiveness, results show that the CBI was effective in increasing prosocial behavior among Nepalese girls and in reducing aggression among boys (Jordans et al., 2010). The TGCT increased psychosocial adaptation among Bosnian (Layne et al., 2008) and Ugandan (Onyut et al., 2005) adolescents. Some studies reveal that psychosocial interventions were effective in reducing psychiatric symptoms but failed to improve social adaptation. For instance, the IPT did not have an impact on psychosocial functioning in Uganda (Bolton et al., 2007), and recreational and empowering activities among Palestinian children (N = 400, 6–17-year-olds) decreased emotional and conduct problems, but did not increase social support (Loughry et al., 2006).

As noted, only Peltonen et al. (2012) conceptualized and assessed social resources as beneficial peer and sibling relations as intervention outcomes. In that study, Palestinian children (N = 205, 8–14-year-olds) participated in school mediation intervention (SMI; Humphries, 1999) that explicitly aimed at building on natural social resources provided by peers and school class cohesion. However, the SMI could only prevent the deterioration of friendship quality and prosocial behavior that happened in the control group during the eight-month follow-up. Our study analyzed the effectiveness of the teaching recovery techniques (TRT; Smith, Dyregrov, & Yule, 2000) in improving peer and sibling relations among war-affected children. The TRT uses children's natural social resources and shared experiences in helping them to recover from severe traumatic experiences. In line with the cognitive-behavioral treatment approach, it provides psycho-education about trauma and its consequences in playful and experiential ways, trains effective coping skills and recognition and regulation of emotions, and facilitates controlling and integrating overwhelming traumatic memories. Children learn to communicate, symbolize, and share their painful experiences, and process and master trauma-related symptoms.

The TRT has been found effective in reducing posttraumatic and depressive symptoms among refugee children in Britain (Ehnholt, Smith, & Yule, 2005) and Jordan (Ali & Snell, 2007), and among war-affected Palestinian children (Barron, Abdullah, & Smith, 2012). Ehnholt et al. showed statistically significant but clinically modest symptom reduction postintervention among refugee children ($N = 26$; 11–15-year-olds), but the beneficial impact did not sustain to follow-up. An RCT among Palestinian children ($N = 113$; 11–14-year-olds) found the TRT to be effective in reducing PTSD, pathological grief, and depressive symptoms in preintervention and postintervention settings (Barron et al., 2012). No research is available on TRT impacting children's social resources such as support or relationships.

We examined the effectiveness of the TRT in improving children's social relations in the aftermath of the 2008/2009 War on Gaza in the context of long-lasting conflict between Israel and Palestinians. The Israeli army launched intensive attacks on the Gaza Strip in December 2008, using warplanes, tanks, and sea vessels. The 23 day-long war claimed 1417 Palestinian lives, including 313 children and injured about 5303, including 1606 children. Around 4000 houses were completely and 16 000 partially destroyed, and approximately 100 000 people were displaced (UN:OCHA, 2009). The war caused panic and fear especially among children due to massive human and material losses, life threat, and inability to escape from the besieged area.

Research Questions

Our study examines the effectiveness of the TRT psychosocial intervention in enhancing good social relations and whether these improved social relations would mediate the intervention impact on mental health among Palestinian children. We analyze peer (loneliness and friendship) and sibling relations (warmth, intimacy, rivalry, and conflict) because they are developmentally important in middle childhood and early adolescence, and can act as protective factors. To indicate intervention effectiveness, we hypothesize, first, that loneliness decreases and better friendship quality increases only in the TRT but not in the control group from baseline (T1) through postintervention (T2) to six-month follow-up (T3). Second, in siblingship, warmth and intimacy would increase and rivalry and conflict decrease only in the TRT but not in the control group through the T1–T3 assessments. Concerning the mediating role of the social relations, we hypothesize, third, that participation in TRT is associated with decreased symptoms of PTSD, depression, and psychological distress, and increased psychological well-being through improved peer and sibling relations.

Method

Participants

The Palestinian children in this study were recruited from schools in Gaza-Palestine after the Gaza War (2008–2009) to participate in psychosocial interventions aiming at preventing negative trauma consequences. The sample consists of 482 children of 10–13-year-olds [mean (M) = 11.29, standard deviation (SD) = .68; 50.6 percent boys], who were randomly assigned either to the intervention ($n = 240$; TRT) group or to the control-waiting list group ($n = 240$). The assessments were at baseline (T1), at postintervention two months later (T2), and follow-up six months postintervention (T3). An earlier study based on the same set of participants and TRT analyzed the intervention effects on children's mental health (posttraumatic, depressive, and

psychological distress symptoms) and the moderating role of peritraumatic dissociation (Qouta, Palosaari, Diab, & Punamäki, 2012). The results were gender specific and moderated by peritraumatic dissociation: The TRT reduced the proportion of clinically significant PTSS among boys and among girls only if they did not show high levels of peritraumatic dissociation.

Due to the randomization, there were no differences between the intervention and control groups in the demographic characteristics. A majority of the children (86 percent; $n = 412$) lived in urban areas, 12 percent in refugee camps, and 3 percent in villages. Fathers' education was evenly distributed across elementary (21 percent), secondary (28 percent), polytechnics (26 percent), and university (24 percent) levels whereas for mothers only 8 percent had a university education and 40 percent had passed polytechnics. There was a high rate of unemployed fathers (49 percent), which corresponds with general Palestinian statistics in the Gaza Strip during the international siege and economic blockade (UN:OCHA, 2009). Over 90 percent of mothers worked at home, which is slightly higher than in general statistics (UN:OCHA, 2009). The family size was about six ($M = 6.24$, $SD = 2.41$), and mothers were younger ($M = 37.50$, $SD = 7.10$ years) than fathers ($M = 42.20$, $SD = 7.40$).

Procedure

The sampling involved (1) selection of two regions (North Gaza and Gaza City), (2) random sampling of two schools in both areas from a numbered list of schools, and (3) within each of the four schools, two boys' and two girls' classes were randomly sampled by using a lottery tool.

The final clustering sample thus consists of 16 classes of fifth- and sixth-level students. The school classes were randomly allocated to intervention and control groups. The planned sample was 500, but eight children in the intervention and 10 in the control group were lost due to school absence. There were no refusals in participation as both research and intervention were part of routine school work as agreed with the Ministry of Education and school headmasters. There were no drop outs between T1 and T2 because children were assessed in their schools during the same semester. Between T2 and T3, 77 (16 percent) children were lost due to children's absence or changes of schools. A flow chart and detailed attrition analyses is presented in Qouta et al. (2012). The drop out was independent on intervention status and demographic characteristics (child age, father and mother education, refugee vs. citizen status, and area of residence). However, boys were overrepresented in drop outs.

The baseline assessment (T1) of all participating children took place in 16 classes in four schools. Information sheets explaining the purpose of the study were given to the pupils and their parents, and the headmasters informed their teachers verbally about the study and intervention. Six research assistants (master's degree in psychology) collected the data under supervision of the last author (S. Q.). Research assistants, children, parents, or teachers were not aware of children's intervention status at baseline.

Four counselors started the TRT interventions with 240 children at four schools 3 and one half months after the War on Gaza had ended. The intervention sessions were run as extracurricular activities with groups of 15 children on school premises by two female and two male counselors (master degree in psychology and training in counseling, including the TRT techniques). The intervention fidelity was guaranteed by weekly supervision by the last author (S. Q.), including case studies, psychodrama of TRT tools, consultation sessions, and practical guiding in the schools.

The Intervention

The TRT is a manualized intervention procedure with clear session procedures; the counselors followed an Arab-language manual. The TRT involves evidence-based tools following the cognitive behavioral therapy, and it aims at helping children to develop effective coping skills, empowerment, and emotion regulation by narrative, imagery, and body- and mind-related and psycho-educational techniques. All sessions started with warming up, introduction to the topic, and reviewing of the home tasks. It was crucial to create a sense of safety and to provide meaningful tools to frame and control overwhelming emotions and painful experiences and losses, to recognize ones' own and others' stress reactions, and to invite social helpers and abolish numbed feelings. The tools involved, for example, safe place method, relaxation, talking about and drawing frightening, and disturbing experiences and dreams. Problem solving, storytelling, and role play techniques were also applied. Learning about emotions and bodily and verbal regulating of fear and horrific flashbacks were important parts of the sessions. Further, children were trained to improve their sleeping patterns and to soothe their overwhelming emotions. Regulating breathing and somatic complains were introduced in relaxed and playful manners, teaching children to link their bodily sensations with the traumatic experience, feelings, and emotions. The intervention methods were aimed at enhancing children's symbolic, verbal, and kinesthetic processing of traumatic experiences. The parents were informed and consented for the children's participation in the intervention. After each session, children were given homework involving other family members. The home tasks included, for example, practicing the screening method, talking about dreams and nightmares with parents, and drawing a happy ending to their dreams.

Measures

Peer Relations. The quality of peer relations was measured by a questionnaire combining seven items of the children's loneliness (Asher et al., 1984) and eight items of friendship qualities (Bukowski, 2004) scales. Children were asked to mark on a 5-point scale how well the descriptions fit their experiences with peers and school mates (ranging from 0 = *not at all* to 4 = *very well*). Two averaged sum variables were constructed: friendship quality (i.e., 'I can easily find new friends', 'I have good friends that I can share my secrets with') and loneliness in peer relations (i.e., 'I feel alone and rejected by my peers', 'In the school breaks I don't have anyone to talk to'). The same peer questionnaire has been found to be valid and reliable among Palestinian children in two earlier studies (Diab, 2011; Peltonen et al., 2010). In this study, the loneliness in peer relations and friendship quality scales had Cronbach's α ranging between .69 and .79 from T1 to T3.

Sibling Relations. Relations between siblings were measured by an 11-item scale by Dunn et al. (1994) that describes positive (warmth and intimacy) and negative (conflict and rivalry) interactions. Children marked how often the described events happen in their relations with an older (11 items) and a younger (11 items) sibling using a 5-point scale (ranging from 1 = *never* to 5 = *always*). All items of older and younger sibling relationships correlated significantly, and averaged composite variables were calculated by combining the items of both siblings: (1) warmth in siblingship, that is, 'We usually laugh and joke together' or 'I miss him/her when he/she is out of the home', (2)

intimacy, that is, 'I usually tell him/her about my secrets' or 'I play and share games with him/her', (3) conflict, that is, 'He/she annoys and teases me' or 'In times, he/she beats me and pushes me', and (4) rivalry, that is, 'I feel jealous of him/her when he/she takes all my mother's attention' or 'I feel unhappy or jealous when other children play with him/her ignoring me'. The reliability and validity of the siblingship quality questionnaire has been established by Diab (2011) and Peltonen et al. (2010). Cronbach's α -values ranged between .68 and .79 from T1 to T3.

Posttraumatic stress symptoms (PTSS). PTSS were evaluated by the 13-item children's revised impact event scale (Smith, Perrin, Dyregrov, & Yule, 2003). The scale covers the three core dimensions of reexperiencing (four items), avoidance (four items), and hyperarousal (five items) symptoms. Children indicated on a 4-point scale how often they had each symptom during the last two weeks: 1 = *not at all*, 2 = *sometimes*, 3 = *often*, and 4 = *very often*. A total score was constructed and the Cronbach's α were .61 (T1), .72 (T2), and .63 (T3).

Depressive Symptoms. The depression self-rating scale for children by (Birlleson, Hudson, Grey-Buchanan, & Wolff, 1987) was applied. The 18-item self-report instrument assesses the cognitive, affective, and behavioral dimensions of depression. Children estimated on a 3-point scale whether they had each symptom during the last two weeks: 0 = *not at all*, 1 = *sometimes*, and 2 = *all the time*. A total score was constructed for depressive symptoms, and α -reliabilities were .69 (T1), .72 (T2), and .68 (T3).

Psychological Distress. The strengths and difficulties scale (SDQ) by Goodman (1997) was applied to assess emotional, behavioral, and relational problems, hyperactivity, and prosocial behavior. Each dimension consists of five items, and children evaluated on a 3-point scale how well the description fitted them: 0 = *not at all*, 1 = *somewhat*, and 2 = *yes, fits well*. The total score of psychological distress was constructed, and α -reliabilities were .69 (T1), .72 (T2), and .67 (T3).

Psychosocial Well-being. The mental health continuum—short form for youth (Keyes et al., 2008) was applied. The 13 items assess the degree of well-being on emotional (positive affects), psychological (i.e., autonomy and self-acceptance), and social (i.e., social contribution and coherence) domains. Children evaluated on a 5-point scale each item how often they had had the particular feeling or thought during the past month: 0 = *never*, 2 = *sometimes*, 3 = *often*, and 4 = *every day*. A total sum variable was calculated with reliabilities of .83, (T1) .82 (T2), and .85 (T3).

Demographic variables. Demographic variables of family SES (socio-economic status), parental education and work situation, civic status, family economic situation, and family size were reported by parents (either mother or father) and children's age and gender by themselves.

Results

Descriptive Statistics

Table 1 presents two-tailed Pearson correlations between peer and sibling relations across the three assessment points. Results show statistically significant negative correlations between loneliness in peer relations and friendship quality within and

Table 1. Pearson Correlations between Social Relations at Baseline, Postintervention, and Follow-up

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
T1 Peer relations																		
1. Loneliness	1																	
2. Friendship	-.22**	1																
T1 Sibling relations																		
3. Warmth	.09	.26**	1															
4. Conflict	.10	-.13*	-.14**	1														
5. Rivalry	.30**	-.06	.04	.38**	1													
6. Intimacy	.02	.30**	.38**	-.11*	.09	1												
T2 Peer relations																		
7. Loneliness	.30**	-.16**	-.04	.15**	.16**	-.09	1											
8. Friendship	-.19**	.37**	.20**	-.13*	-.04	.23**	-.38**	1										
T2 Sibling relations																		
9. Warmth	.05	.17	.51**	-.12*	.05	.36**	-.09	.33**	1									
10. Conflict	.25**	-.14*	-.10	.50**	.19**	-.07	.37**	-.23**	-.09	1								
11. Rivalry	.11*	-.06	.01	.24**	.39**	.03	.33**	-.17**	.05	.40**	1							
12. Intimacy	.02	.16**	.33*	-.11*	.02	.51**	-.07	.35**	.56**	-.07	.04	1						
T3 Peer relations																		
13. Loneliness	.24**	-.25**	-.13*	.08	.11	-.12*	.43**	-.35**	-.14*	.15**	.14*	-.13*	1					
14. Friendship	-.29**	.29**	.13*	-.07	-.04	.09	-.24**	.39**	.16**	-.17**	-.04	.13*	-.43**	1				
T3 Sibling relations																		
15. Warmth	-.06	.16**	.41**	-.16**	-.01	.28**	-.06	.27**	.45**	-.17**	.02	.31**	-.08	.20	1			
16. Conflict	.08	-.02	.00	.23**	.15*	-.06	.12*	-.06	.01	.32**	.20**	-.05	.22**	-.13*	-.12*	1		
17. Rivalry	.21**	-.12*	.00	.20**	.30**	.02	.23**	-.11	.01	.30**	.40**	-.39	.25**	-.17**	.03	.39**	1	
18. Intimacy	-.02	.12*	.24**	-.12*	-.04	.41**	.07	.24**	.30**	-.10	.05	.46**	-.06	.22**	.54**	-.05	-.09	1

* Correlation is significant at .05 level and ** correlation is significant at .01 level (two-tailed) N = 442 (T1 and T2) and N = 312 (T3).

across T1, T2, and T3. Concerning sibling relations, there were significant positive correlations between warmth and intimacy, and between conflict and rivalry within and across T1, T2, and T3. Loneliness in peer relations correlated significantly with conflict and rivalry in siblingship within and across assessment points.

Intervention Improving Social Relations

To analyze whether peer and sibling relations would improve during the TRT intervention, a 2 (group: intervention vs. control) \times 2 (gender) repeated-measures multiple analysis of covariance (MANCOVA) with main and interaction effects was applied. Time (T1, T2, and T3) was the within-group factor and age and school class the covariates. Separate MANCOVAs were run on two sets of dependent variables of peer relations (friendship and loneliness) and sibling relations (warmth, intimacy, conflict, and rivalry).

The means and standard errors of peer and sibling relations at baseline (T1), postintervention (T2), and follow-up (T3) are reported in Table 2. The only intervention impact was found for sibling conflict [group \times change – interaction effect, $F(1, 482) = 4.42, p < .001, \eta^2 = .06$]. Figure 1 illustrates that, in the control group, sibling conflicts significantly increased from T2 to T3. However, our hypothesis of sibling conflicts decreasing in the intervention group was not substantiated, although conflicts did not increase as they did among controls. The significant group \times gender \times change – interaction effect, $F(2, 480) = 3.95, p < .05, \eta^2 = .02$, further specified that the siblingship conflicts increased especially among boys in the control group.

Intervention effects on other social relations were gender specific, indicated by significant group \times gender \times change interaction effects for loneliness, $F(2, 485) = 8.50, p < .0001, \eta^2 = .05$, and sibling rivalry, $F(485, 2) = 5.86, p < .01, \eta^2 = .03$. The hypothesis that loneliness would decrease in the intervention group was substantiated among boys, but not among girls (Figure 2). The hypothesized decrease in sibling rivalry in intervention group occurred, in turn, only among girls. Results further revealed a general deterioration in positive sibling relations, shown in decreased warmth and intimacy from baseline T1–T3 in both groups. Counter to our hypotheses, the intervention was not able to prevent that deterioration.

Mediating Role of Social Relations

Structural equation modeling (maximum-likelihood estimation; AMOS/SPSS 5, IBM, Somers, NY) was used to test the mediating role of improved peer and sibling relations between the intervention participation (dummy variable 0 = control; 1 = intervention) and changes in mental health indicators (PTSS, depressive and psychological distress symptoms, and psychosocial well-being change scores). The change variables of peer and sibling relations and mental health were the simple subtractions of T1 scores from T3 scores. Mediation was tested according to MacKinnon, Lockwood, Hoffman, West, and Sheets (2002): (1) the path from intervention participation to mental health latent construct should be statistically significant; (2) adding the two latent constructs of change in peer and sibling relations as mediators should improve significantly the model, and the paths (a) from intervention to both these mediators and (b) from the mediators to the mental health latent construct should be statistically significant whereas (c) the original significance of the path from intervention to mental health

Table 2. Means and Standard Errors of Peer and Sibling Relations in Intervention and Control Groups at Baseline (T1), Postintervention (T2), and Follow-up (T3), and GLM Statistics for Intervention Effects

	Baseline T1			Postintervention T2			Follow-up T3			F-values ^{a,b}	Group × change	Group × gender × change			
	Intervention		Control		Intervention		Control		Change ^c						
	M	SE	M	SE	M	SE	M	SE							
Peer relations															
Loneliness	2.21	.09	2.09	.09	2.33	.09	2.07	.10	1.93	.09	2.01	.10	.06	1.86	8.50****
Friendship	3.85	.07	3.85	.08	3.71	.09	3.94	.09	3.70	.09	3.96	.09	2.24	1.37	1.11
Sibling relations															
Warmth	2.54	.08	2.50	.08	2.34	.08	2.37	.09	2.32	.08	2.39	.10	5.51**	.44	.42
Conflict	1.37	.07	1.29	.08	1.39	.08	1.25	.09	1.08	.08	1.34	.09	1.61	4.42**	3.95*
Rivalry	1.12	.08	1.26	.09	1.14	.09	1.31	.10	.91	.10	1.12	.10	5.04**	.10	5.86**
Intimacy	2.26	.07	2.21	.08	2.05	.08	2.14	.09	2.02	.07	2.01	.08	7.50****	.88	1.19

Note: GLM = general linear model; M = mean; SE = standard error.

^a Intervention group n = 207 and Control group n = 197. ^b F-values are Wilk's lambda in a repeated measure setting from T1 through T2 to T3. ^c Change refers to general change from baseline through postintervention to follow-up.

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

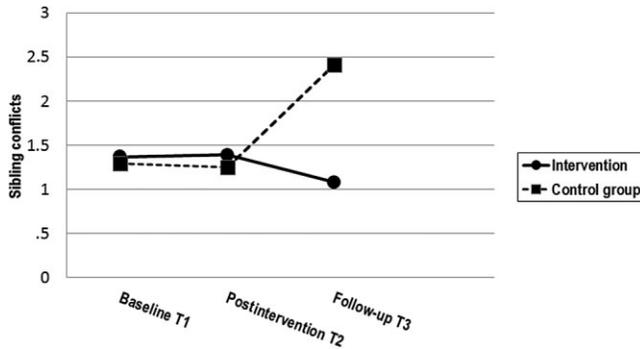


Figure 1. Intervention Effect on Conflict in Siblingship.

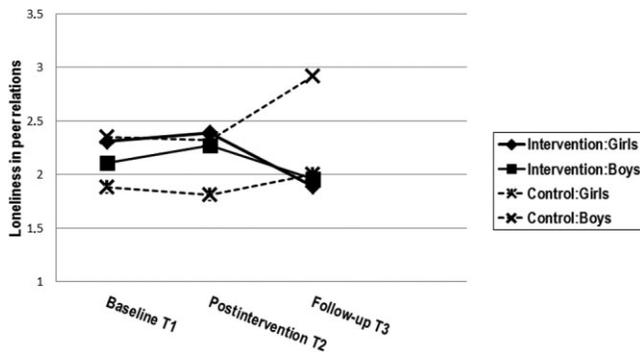


Figure 2. Gender-specific Intervention Effect on Loneliness in Peer Relations.

should significantly attenuate. As a criterion of acceptable fit, we used values of $>.90$ for Comparative Fit Index (CFI) and Normed Fit Index (NFI), and $<.08$ for Root Mean Square Error of Approximation (RMSEA) (Browne & Cudeck, 1992).

Latent constructs were formed for changes in child mental health, peer relations, and sibling relations from T1 to T3, and their measurement models were tested prior the modeling of mediation. A combined measurement model fit the data adequately as the results of fit criteria were CFI = .96, NFI = .94, RMSEA = .05. However, the chi-squared fit was significant, $\chi^2(43, N = 483) = 90.89, p < .001$, as is often the case in large samples. Manifest variables ($n = 10$) had significant variances, except sibling rivalry and SDQ psychological distress. They were kept, however, in the model for their conceptual significance.

The results of the mediating model of social relations are presented in Figure 3. The model of direct association between intervention and mental health change fit the data well, $\chi^2(3, N = 483) = 4.49, p = .21$, CFI = .97, NFI = .93, RMSEA = .03, confirming that TRT-psychosocial intervention significantly decreased children's mental health symptoms [$\beta = -.25, t = -6.93$, standard error (SE) = 1.24, $p = .0001$], thus fulfilling the first requirement for the mediation. Adding the two latent variables of changes in peer and sibling relations as potential mediators did not, however, improve the model, although it showed a good fit, $\chi^2(29, N = 483) = 43.39, p < .04$, CFI = .95, NFI = .95, RMSEA = .03. The significant β -coefficients in Figure 3 confirmed that improved peer

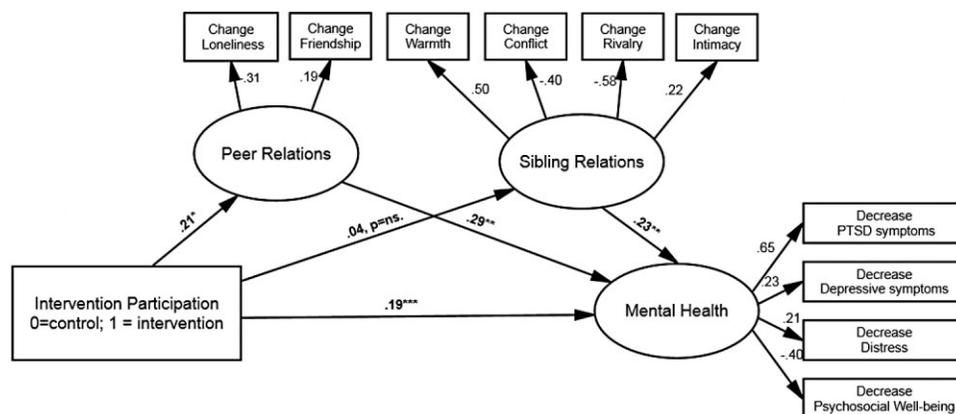


Figure 3. SEM Testing the Model of Peer and Sibling Relations Mediating Between the Intervention Participation and Mental Health.

Note: * < .05, ** < .01, *** < .001.

relations partially mediated the TRT intervention impact on children's mental health: the path was significant between the intervention and beneficial change in peer relations ($\beta = .21$, $t = 1.96$, $SE = .07$, $p = .05$) and that improvement in peer relations was further significantly associated with good mental health ($\beta = .29$, $t = 2.58$, $SE = 4.85$, $p = .01$). However, the path of the intervention on mental health was still significant despite the significant mediator ($\beta = -.19$, $t = 3.64$, $SE = 1.37$, $p = .0001$), indicating a partial mediation of peer relations. Improvement in sibling relations was associated significantly with children's good mental health ($\beta = .23$, $t = 3.22$, $SE = 1.97$, $p = .001$), but did not function as a hypothesized mediator.

Discussion

War trauma can comprehensively impact child development including social relations. Subsequently, traumatized children need all possible help and support when struggling toward adaptation. We examined effectiveness of the TRT psychosocial intervention to increase beneficial social resources among war-affected Palestinian children in a controlled and cluster randomized three-wave longitudinal study. We conceptualized social resources as the quality of peer and sibling relationships that are developmentally salient for 10–13-year-old children. We further analyzed the role of improved social relations in mediating the intervention impact on children's mental health. Limitations of the study include single-source and subjective reporting of peer and sibling relations as, that is, sociogram tools would have given a more dynamic look. Similarly, children reported mental health indicators instead of more valid clinical interviews. Generalization of the results should be limited to psychosocial interventions in the aftermath of major war and military violence.

Although it has been suggested that people unite in the face of war and life threat, empirical research reveals deteriorated human relations, especially in prolonged military conflicts (Hodes et al., 2008; Paardekooper, 2002). Such a situation causes a threat to children's well-being because it is social support that could protect their mental health (Ozer, Best, Lipsey, & Weiss, 2003). Given this background, the result that TRT

psychosocial intervention was effective in reducing some negative peer and sibling relations is important. Also, the result that improved peer relations partly mediated the intervention impact on mental health emphasizes the fundamental nature of social resources in trauma.

The beneficial intervention effect was gender specific as boys' loneliness in peer relations and girls' rivalry in sibling relations decreased in the intervention group, but not among controls. Dynamics reflect general gender differences in upbringing in Palestinian society and Middle-Eastern Islamic culture (Diab, 2011). Boys tend to be more expressive with peers than girls because they are encouraged to talk and take a lead whereas quietness and politeness is a sign of good virtue among girls. Boys also communicate and analyze their problems among peers whereas girls show more reservation. Girls apparently trust more in family relations, and share intimacy and disclose their feelings with siblings. Boys, in turn, have very tight relations and affiliation with peers especially in adolescence and often consider them their second family. Psychosocial interventions are thus effective in improving salient developmental and identity-related issues, for example, peer relations among boys and sibling relations among girls. Similarly, the psychosocial intervention in Nepal improved prosocial behavior among girls and lowered aggression among boys (Jordans et al., 2010).

Earlier studies revealed deteriorated peer and sibling relations in traumatic and violent conditions among Palestinian children (Diab, 2011; Peltonen et al., 2010). Similarly, in our study, sibling conflicts escalated in the aftermath of major war among control children whereas the conflict level stayed stable in the intervention group in the follow-up. There is evidence that war trauma can intrude and interfere with family relations as burdened parents may not have the energy to soothe and support their children, and subsequently sibling conflicts and rivalry appear (Barber, 2001; Peltonen et al., 2010). However, the TRT had also beneficial impacts on negative siblingship as sibling rivalry reduced among girls.

The TRT was not effective enough to increase positive sibling relations characterized by warmth and intimacy. On the contrary, there was a general decline in these positive and supportive sibling relations in both intervention and control groups. This is a reason for concern because positive domain of child development, including joyful, intimate, and warm peer and sibling relations are vital for health and resilience (Stichick Betancourt & Khan, 2008). Positive experiences do not only indicate lack of negative processing, but constitute unique protective resources. Pleasant, secure, and happy experiences serve the possibility to look on the bright side of experiences, which is especially important in life danger and insecurity. Accordingly, psychosocial interventions for war-affected children should be more explicitly designed to invite, maintain, and enhance positive relations because they can modulate excessive fears, loneliness, and insecurity.

Similar to other cognitive-behavioral interventions, the TRT aims at inviting children to share, rely, and seek support in their natural social networks. Our findings confirmed the putative role of improved peer relations in mediating the intervention impact on children's mental health. In other words, intervention participation decreased mental health problems by improving peer relations, although also the direct link between TRT and outcomes was valid. Peer relations are especially important in late childhood and early adolescence (i.e., Bukowski, 2004), which can explain their power. War-affected children seek safety, closeness, and assurance in life threat, and this natural healing element should thus be incorporated in psychosocial interventions.

References

- Ali, N., & Snell, T. (2007). *Women's commission for refugee women & children: Iraqi refugee women and youth in Jordan*. Bergen: Children and War Foundation.
- Asher, S. R., Hymel, S., & Renshaw, P. D. (1984). Loneliness in children. *Child Development*, 55, 1456–1464.
- Barber, B. K. (2001). Political violence, social integration, and youth functioning: Palestinian youth from the Intifada. *Journal of Community Psychology*, 29, 259–280.
- Barron, I., Abdullah, G., & Smith, P. (2012). Randomized control trial of a CBT Trauma Recovery program in Palestinian schools. *Journal of Loss and Trauma, International Perspectives on Stress & Coping*, 18, 306–321. doi: 10.1080/15325024.2012.688712
- Berger, R., Pat-Horenczyk, R., & Gelkopf, M. (2007). School-based intervention for prevention and treatment of elementary-students' terror-related distress in Israel: A quasi-randomized controlled trial. *Journal of Trauma Stress*, 20, 541–551. doi: 10.1002/jts.20225
- Birleson, P., Hudson, I., Grey-Buchanan, D., & Wolff, S. (1987). Clinical evaluation of a self-rating scale for depressive disorder in childhood (depression self-rating scale). *Journal of Child Psychology and Psychiatry*, 28, 43–60.
- Bolton, P., Bass, J., Betancourt, T., Spielman, L., Onyango, G., Clougherty, K. F., et al. (2007). Interventions for depression symptoms among adolescent survivors of war and displacement in northern Uganda: A randomized controlled trial. *JAMA: the journal of the American Medical Association*, 298, 519–527. doi: 10.1001/jama.298.5.519
- Browne, M. W., & Cudeck, R. (1992). Alternative ways of assessing model fit. *Sociological Methods & Research*, 21, 230–258.
- Bukowski, W. (2004). Research on children's and adolescents' friendships: Four old and new questions that deserve our attention. *International Journal of Behavioral Development. Sublement. Serial* 46, 28, 7–10.
- Caplan, G. (1974). *Support systems and community mental health; lectures on concept development*. New York: Behavioral Publications.
- Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine*, 38, 300–314.
- Diab, S. J. (2011). *The psychosocial factors that undermine children's academic potentials*. Berlin: LAP Lambert Academic Publishing.
- Dunn, J., Slomkowski, C., & Beardsall, L. (1994). Sibling relationships from the preschool period through middle childhood and early adolescence. *Developmental Psychology*, 30, 315–324.
- Ehnholt, K. A., Smith, P. A., & Yule, W. (2005). School-based cognitive-behavioural therapy group intervention for refugee children who have experienced warrelated trauma. *Clinical Child Psychology and Psychiatry*, 10, 235–250. doi: 10.1177/1359104505051214
- Ehnholt, K. A., & Yule, W. (2006). Practitioner review: Assessment and treatment of refugee children and adolescents who have experienced war-related trauma. *Journal of Child Psychology and Psychiatry*, 47, 1197–1210. doi: 10.1111/j.14697610.2006.01638.x
- Fox, T. L., Barrett, P. M., & Shortt, A. L. (2002). Sibling relationships of anxious children: A preliminary investigation. *Journal of Clinical Child Adolescence Psychology*, 31, 375–383. doi: 10.1207/S15374424JCCP3103_09
- Freud, A., & Burlingham, D. (1943). *War and children*. New York: Medical War Books.
- Gass, K., Jenkins, J., & Dunn, J. (2007). Are sibling relationships protective? A longitudinal study. *Journal of Child Psychol Psychiatry*, 48, 167–175. doi: 10.1111/j.1469-7610.2006.01699.x
- Gelkopf, M., & Berger, R. (2009). A school-based, teacher-mediated prevention program (ERASE-Stress) for reducing terror-related traumatic reactions in Israeli youth: A quasi-randomized controlled trial. *Journal of Child Psychology and Psychiatry*, 50, 962–971. doi: 10.1111/j.1469-7610.2008.02021.x
- Goodman, R. (1997). The Strengths and Difficulties Questionnaire: A research note. *Journal of Child Psychology and Psychiatry*, 38, 581–586.
- Hodes, M., Jagdev, D., Chandra, N., & Cunniff, A. (2008). Risk and resilience for psychological distress amongst unaccompanied asylum seeking adolescents. *Journal of Child Psychology and Psychiatry*, 49, 723–732.

- Howe, N., Aquan-Assee, J., Bukowski, W. M., Lehoux, P. M., & Rinaldi, C. M. (2001). Siblings as confidants: Emotional understanding, relationship warmth, and sibling self-disclosure. *Social Development, 10*, 439–448. doi: 10.1111/1467-9507.00174
- Humphries, T. (1999). Improving peer mediation programs: Student experiences and suggestions. *Professional School Counselling, 3*, 13–18.
- Jordans, M. J. D., Komproe, I. H., Tol, W. A., Kohrt, B., Luitel, N., Macy, R., et al. (2010). Evaluation of a school based psychosocial intervention in Nepal: A randomized controlled trial. *Journal of Child Psychology and Psychiatry, 51*, 818–826. doi: 10.1111/j.1469-7610.2010.02209.x
- Jordans, M. J. D., Tol, W. A., Komproe, I. H., & de Jong, J. T. V. M. (2009). Systematic review of evidence and treatment approaches: Psychosocial and mental health care for children in war. *Child & Adolescent Mental Health, 14*, 2–14. doi: 10.1111/j.1475-3588.2008.00515.x
- Keyes, C. L. M., Wissing, M., Potgieter, J. P., Temane, M., Kruger, A., & van Rooy, S. (2008). Evaluation of the mental health continuum-short form (MHC-SF) in Setswana-speaking South Africans. *Clinical Psychology & Psychotherapy, 15*, 181–192. doi: 10.1002/Cpp.572
- Layne, C. M., Saltzman, W. R., Poppleton, L., Burlingame, G. M., Pašalić, A., Duraković, E., et al. (2008). Effectiveness of a school-based group psychotherapy program for war-exposed adolescents: A randomized controlled trial. *Journal of the American Academy of Child & Adolescent Psychiatry, 47*, 1048–1062. doi: 10.1097/CHI.0b013e31817eecae
- Loughry, M., Ager, A., Flouri, E., Khamis, V., Afana, A. H., & Qouta, S. (2006). The impact of structured activities among Palestinian children in a time of conflict. *Journal of Child Psychology and Psychiatry, 47*, 1211–1218. doi: 10.1111/j.1469-7610.2006.01656.x
- MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods, 7*, 83–104. doi: 10.1037//1082-989x.7.1.83
- Macy, R. D., Johnson-Macy, D., Gross, S. I., & Brighton, P. (2003). Healing in familiar settings: Support for children in the classroom and community. *New Directions in Youth Development, 98*, 51–79.
- Möhlen, H., Parzer, P., Resch, F., & Brunner, R. (2005). Psychosocial support for war-traumatized child and adolescent refugees: Evaluation of a short-term treatment program. *Australian & New Zealand Journal of Psychiatry, 39*, 81–91. doi: 10.1111/j.14401614.2005.01513.x
- Mueller, J., Orth, U., Wang, J., & Maercker, A. (2009). Disclosure attitudes and social acknowledgement as predictors of posttraumatic stress disorder symptom severity in Chinese and German crime victims. *Canadian Journal of Psychiatry, 54*, 547–556.
- Onyut, L., Neuner, F., Schauer, E., Ertl, V., Odenwald, M., Schauer, M., et al. (2005). Narrative exposure therapy as a treatment for child war survivors with posttraumatic stress disorder: Two case reports and a pilot study in an African refugee settlement. *BMC Psychiatry, 5*, 7. doi: 10.1186/1471-244X-5-7
- Ozer, E. J., Best, S. R., Lipsey, T. L., & Weiss, D. S. (2003). Predictors of posttraumatic stress disorder and symptoms in adults: A meta-analysis. *Psychological Bulletin, 129*, 52–73. doi: 10.1037//0033-2909.129.1.52
- Paardekooper, B. (2002). *Children of the forgotten war: A comparison of two intervention programmes for the promotion of well-being of Sudanese refugee children*. Amsterdam: Vrije Universiteit, Academic Proefschrift.
- Peltonen, K., & Punamäki, R. L. (2010). Preventive interventions among children exposed to trauma of armed conflict: A literature review. *Aggressive Behavior, 36*, 95–116. doi: 10.1002/Ab.20334
- Peltonen, K., Qouta, S., El Sarraj, E., & Punamäki, R. L. (2010). Military trauma and social development: The moderating and mediating roles of peer and sibling relations in mental health. *International Journal of Behavioral Development, 34*, 554–563. doi: 10.1177/0165025410368943
- Peltonen, K., Qouta, S., El Sarraj, E., & Punamäki, R.-L. (2012). Effectiveness of school-based intervention in enhancing mental health and social functioning among war-affected children. *Traumatology Online March, 2012*, 1–10. doi: 10.1177/1534765612437380
- Pennebaker, J. W. (1995). *Emotion, disclosure & health*. Washington, DC: American Psychological Association.

- Persson, T. J., & Rousseau, C. (2009). School-based interventions for minors in war-exposed countries: A review of targeted and general programmes. *Torture, 19*, 88–101.
- Pfefferbaum, B. (1997). Posttraumatic stress disorder in children: A review of the past 10 years. *Journal of the American Academy of Child and Adolescent Psychiatry, 36*, 1503–1511.
- Pine, D. S. (2003). Developmental psychobiology and response to threats: Relevance to trauma in children and adolescents. *Biological Psychiatry, 53*, 796–808.
- Qouta, S. R., Palosaari, E., Diab, M., & Punamäki, R. L. (2012). Intervention effectiveness among war affected children: A cluster randomized controlled trial on improving mental health. *Journal of Traumatic Stress, 25*, 288–298. doi: 10.1002/jts.21707
- Saarni, C. (1999). *The development of emotional competence*. New York: Guilford Press.
- Smith, P., Dyregrov, A., & Yule, W. (2000). *Children and war: Teaching recovery techniques*. Bergen: Foundation for Children and War.
- Smith, P., Perrin, S., Dyregrov, A., & Yule, W. (2003). Principal components analysis of the impact of event scale with children in war. *Personality and Individual Differences, 34*, 315–322. doi: 10.1016/S0191-8869(02)00047-8
- Stichick Betancourt, T., & Khan, K. T. (2008). The mental health of children affected by armed conflict: Protective processes and pathways to resilience. *International Review of Psychiatry, 20*, 317–328. doi: 10.1080/09540260802090363
- Thabet, A. A., Ibraheem, A. N., Shivram, R., Winter, E. A., & Vostanis, P. (2009). Parenting support and PTSD in children of a war zone. *International Journal of Social Psychiatry, 55*, 226–237. doi: 10.1177/0020764008096100
- Tol, W. A., Komproe, I. H., Susanty, D., Jordans, M. J. D., Macy, R. D., & De Jong, J. T. V. M. (2008). School-Based Mental Health Intervention for children affected by political violence in Indonesia. *JAMA: The Journal of the American Medical Association, 300*, 655–662.
- UN:OCHA (2009). Human rights in Palestine and other occupied Arab territories: Report of the United Nations Fact Finding Mission on the Gaza Conflict. Human Rights Council, A/HRC/12/48. 662. doi: 10.1001/jama.300.6.655

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