KIRSI PELTONEN

Children and Violence

Nature, consequences and interventions

ACADEMIC DISSERTATION
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Tampere, June 2011 Kirsi Peltonen

Abstract

This study focuses on mental health and social relations of children exposed to violence. Two distinct forms of violence, namely collective and interpersonal are studied. The participants in this study are Palestinian children exposed to military violence and Finnish and Danish children with and without exposure to parental violence. The main question is how experiences of violence are related to children's mental health and social relations (Articles II and III). The effectiveness of interventions in conditions of military violence is reviewed. (ArticleI).

The main results show that both forms of violence impair a child's psychological wellbeing in multiple ways. The findings suggest that the dose response effect is evident between both military and parental violence and mental health problems. Social relations, however, are somehow differently affected, experiences of military violence being more clearly harmful to social relations than experiences of parental violence. Positive social relations turned out to be a protective factor for mental health in situations involving military violence.

It is also shown that effective interventions among children exposed to collective violence exist. Knowing about protective and risk factors and efficacy intervention techniques derived from this knowledge is extremely important. The evidence of most effective interventions among children and adolescents exposed to violence will be achieved with methodologically and theoretically strong intervention research designs.

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List of original publications

This dissertation consists of the following three publications, which will be referred to in the text by their roman numerals I-III.

I Peltonen, K., & Punamäki, R.-L. (2010). Preventive interventions for children exposed to military and community violence and natural disasters: A literature view. *Aggressive Behaviour, 36*(2), 195-116.

II 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 Behavioural Development*, *34*(6), 554-563.

III Peltonen, K., Ellonen, N., Larsen, H. & Helweg-Larsen, K. (2010). Parental violence and adolescent mental health. *European Child & Adolescent Psychiatry*, *19*(11), 813-822.

Denying childhood for any child is developmental violence

-Kydd, 1999-

1. Introduction

1.1 The nature of violence

Violence is a pervasive public health problem. It is common and its consequences including those to mental health are huge with more than 1.6 million deceased and many more disabled and suffering in different ways every year. Violence can be broadly categorized as interpersonal and collective violence. In the former, individuals inflict violence on others in familiar settings, for instance in families and schools. Collective violence takes place in political and military contexts and is targeted at larger groups, with terrorism, wars and military violence serving as examples. (Krug et al. 2002). The participants of the present study are children exposed to collective military violence in a war zone and children who have experienced interpersonal violence in the form of parental violence in peaceful societies.

Violence can be physical or psychological. The UN report on violence against children acknowledges that any act that results in or is very likely to result in injury, death, psychological harm, maldevelopment or deprivation can be regarded as violence. This includes the intentional use of physical force, either threatened or actual, against another person, or against a group or community as well as the use of psychological power such as humiliation and subjugating. (Pinheiro, 2006). This study focuses on the mental health and social consequences of physical and psychological violence as well as the interventions that focus on alleviating the negative effects of violence.

The more emblematic description of the violence towards children is presented by a metaphor by Kydd (1999). "If violence were a single substance, it would be a hard substance capable of harming any surface. It would have to be durable, as the impact of violence creates scars that can endure for generations. If it were a gem it would be the diamond of our disapproval. History reminds us that revenge, like diamonds can be forever".

Military and parental violence enters children's lives in diverse traumatic events. Frequency of adverse life events refers to the number, duration and chronicity of traumatic experiences (Coie et al., 1993; Vogel & Vernberg, 1993). Both parental and military violence can most often be regarded as Type II trauma, which means continuous or repeated exposure to traumatizing events such as humiliation, threatening or beating (Terr 1991). This is different from type I trauma, which refers to single incident trauma such as a car accident. Children's experiences in this study can be regarded as proximal risk factors that represent an immediate vulnerability to social and mental health problems. Although not within the scope of this study, exposure to violent events may also serve as distal risk factors, meaning that they are background characteristics that may put children at risk for disturbances later in life. (Yehuda, 1998).

In both military and parental violence children can be personally the target of violence or indirectly exposed to violence through witnessing the violence targeted at others. In family violence children can witness one of the parents or siblings being the victim of violent acts. In war conditions the victims of violence include family members,

friends or other significant persons. Somehow different consequences ensure when children witness violence by seeing or hearing war atrocities or when they are beaten, hit or otherwise hurt themselves. Earlier research shows that being a victim of parental violence is more harmful for a child's mental health than witnessing violence between family members (for example, Edleson, 1999). In a military violence setting, the difference is not so marked. Allwood, Bell-Dolan & Husain (2002), for example, showed that children with and without personal exposure to violence are almost equally vulnerable to externalizing and internalizing adjustment difficulties and symptoms of PTSD.

In this study, the children exposed to war have both witnessed and been targets of violent acts. Concerning parental violence, only direct exposure is under scrutiny. However, the phenomena of direct and indirect exposure to violence are discussed.

1.2 The meaning of violent experiences for children

Not only the nature of a traumatic event, but also the child's subjective experience, affects the consequences of violence. The objective severity of violence may be different from the child's own experience of the level of perceived threat or loss. The content of a traumatic event is composed of the frightening sensations and horror but in the best case accompanied with feelings of hope and bereavement together with significant others.

In a collective military violence situation a child's senses are bombarded with frightening sights, sounds and smells. These sensations are continuous and unpredictable and evoke a wide variety of responses. We may better understand the drama of war experiences by listening to children themselves, as has been done in qualitative research among Bosnian (Goldstein & Wampler, 1997), Iraqi (Dyregrov & Raundalen, 2003) and Rwandan (Dyregrov, Gupta, Gjestad, & Mukanoheli, 2000) children. Children are highly

apprehensive: What could happen? Will we live to become adults? Will we all die in the end? They are also afraid of the next war and express a need for family support: What is meant on the news? Will there be a new war or does it continue? Are the adults scared? Optimistic, children also think that time passing or making new friends helped them feel better and that things would improve for them.

The concrete changes in social relations, loss of family members and friends as well as the loss of their emotional accessibility, result in diverse feelings such as lack of understanding and anger towards those who are lost. Also, leisure time activities might change, leaving children without opportunities to have a break form distressing thoughts. Attachment behaviour is activated in mortal danger, and older children also cling to their parents because of the constant fear that something could happen to their family members. Preoccupation with family safety can disturb the developmental task of peer involvement, friendship and school activities. Witnessing horrible scenes of war atrocities can result in intrusive memories that interfere with children's and adolescents' intimate sharing. Being a victim of military trauma signifies a deep distrust in the benevolence of fellow-humans, which is often generalized to close relations (Janoff-Bulman, 1992). In addition to worry about the safety of family members, children are often concerned about their friends. Witnessing the injury or death of a close friend or other peer evokes acute and continuing stress reactions and feelings of insecurity, which can severely obstruct and complicate children's social development (Pynoos, Steinberg & Goenjian, 1996).

In an interpersonal parental violence situation a child's senses are likewise bombarded with frightening sights and sounds. The unpredictability of these sensations varies from rare initiated punitive acts to arbitary use of violence towards a child. At a best, child knows that outside home there are safe places where his/her mind and body can rest. Being repeatedly afraid of the person from whom the child is even evolutionarily programmed to seek safety and comfort is always an overwhelming experience. Physical abuse sensitizes children to anger. They are ‘‘on the alert’’ perhaps waiting for indications that the angry altercation might escalate. In an experimental research situation physically abused children showed less of an arousal response during a

realistic interpersonal situation with active anger than did the controls. Rather than reflecting the good adjustment, the researchers presumed that the intensity of the stimuli presented in experiment situation stimuli is milder than what these children were exposed to in their home environments. In addition, abused children showed a greater arousal response during the period of silent, unresolved anger that was not observed in controls. These results show that children learn to anticipate parents' outbursts which when could be quite severe. (Pollak, 2005).

1.2.1 Developmental approach

The whole context of life sets a framework for dealing with violence related situations in the community as well as in the family (Barenbaum, Ruchkin & Schwab-Stone, 2004) but the questions concerning age specificity in trauma reactions and treatment have not fully been answered (Foa, Keane & Friedman, 2000). Children and adolescents of all ages are vulnerable, but reactions vary according to their age. Additionally, children of different ages demand different types of help in order to survive frightening experiences.

Throughout the childhood and adolescence, humans fight to accomplish for age salient developmental tasks. Tasks to accomplish serve as valuable landmarks of how well development has been proceeding but also as warning signs of possible troubles ahead. Masten & Coatsworth (1998) propose that competence in both childhood and adolescence should be defined in terms of a pattern of effective performance of major age-developmental tasks. Violent experiences can disturb the accomplishment of the salient developmental tasks in infancy, preschool, middle childhood and adolescence in two ways. First, they have potential to prevent or delay the developmental transition and a child may even regress to the former developmental stage. The more tasks remain to be fully conquered the more difficulties these experiences portend in the long run. Second, children exposed to violence are forced to tackle new and unique developmental tasks such as excessive self-control or premature independence in order to survive with the high demands of a complex childhood environment (Onyango, 1998).

The participants of the studies in this dissertation are in their middle childhood and early adolescence, when making and sustaining friendships are among the main developmental tasks, and significant changes occur in both family and peer relations (Collins & Laursen, 2004). In that age peer and friendship interactions start to serve many of the same functions that were earlier exclusive to familial relationships, such as companionship, stimulation, and support (O'Brien & Bierman, 1988). They also serve, however, independent and unique developmental functions such as the emotional sharing of secrets and the excitement of breaking boundaries (Schneider, 2000). Having this transition in mind, the developmental aspect is worth noting when interpreting the results. In conditions of collective violence all the members of a community are affected and their energy focuses on surviving and dealing with their own distressing thoughts and emotions. Children are easily ignored and their distress and concern left unattended to. The interaction with friends and family may thus be problematic. In conditions of parental violence things could be quite the same. Children are left without appropriate support from secure adults and with fears of anyone being able to understand them in the peer group.

Children's and adolescents unique way of meaning making and handling a violent situation affects its consequences. Each developmental stage offers both protective self-healing processes and vulnerabilities. For example, in early childhood the lack of full metacognitive capacity, needed for logical and scientific thinking and notions of sociability, prevents coherent memories (Schneider, 2008). Utilizing the detailed knowledge of upsetting events for survival requires reflective thinking about the process of memory itself as well as the exploration of how to implement its methods in advance. When these processes, also called metamemory, are not fully developed, the narratives of the events may remain fragmented. On the other hand the lack of a full understanding of frightening events may protect a child. The degree to which a child actually feels frightened or threatened by the traumatic experiences is important factor for later adjustment (Brock, 2002). For example, Papageorgiou et al. (2000) found that older children in military violence situations were at greater risk of developing depressive

symptoms compared to younger ones. This could be due to different stages of cognitive development, e.g. the strategies that children use to understand horrible events (Barenbaum, Ruchkin, & Schwab-Stone, 2004). Taking these issues into account, new diagnoses, Developmental Trauma Disorder, have been proposed. It emphasizes the significance of timing and nature of traumatic experiences such as violence. It captures the unique qualities of children's age-specific reactions to trauma and different vulnerabilities in early and middle childhood and adolescence. (DeAngelis 2007, van der Kolk, 2005).

What is efficacious for children at one stage may not be so at another. Some risk factors are strong predictors of dysfunction only at critical periods of development. On the other hand, skills acquired at younger ages may not be well suited to the challenges children face at later ages (Bierman & Montimy 1993), and younger children may not have the competence to profit from certain types of intervention procedures (Weisz 1997). Hypothesizing moderators and mediators relating to the behaviour of interest before the execution of a research trial, also enables the consideration of intervention timing. For example, it is not known whether efficacious treatments such as CBT for anxiety apply across all age groups or to children with concurrent disorders. Practitioners must constantly extrapolate from the existing research evidence of developmental processes and trauma interventions (Waddell & Godderis, 2005).

1.3 Consequences of violent experiences: mental health, social relations and cognitive processes

The psychological research reveals extensive discussion of whether a child "bursts outwards" or "huddle up inside" when experiencing violence, in other words does a child react merely by being aggressive, hyperactive and having conduct problems or by being upset and having depressive and anxiety problems (see for example, Margolin, 2005).

There is a wide variation in the severity of these reactions, some children having few symptoms that do not reach clinical levels of concern and others suffering from multiple psychiatric symptoms meeting all the criteria for psychiatric illnesses. Although many of the same signs and symptoms may be apparent among individuals exposed to trauma in general, their occurrence and meaning vary across different contexts (Berman, 2001). Research on collective and interpersonal violence has focused on somehow different dimensions of children's reactions.

The research tradition in military trauma has a strong focus on post traumatic stress disorder (PTSD). Posttraumatic stress symptoms are specific responses to stressful situations and persist long after the end of the negative events (Horowitz, 1983,1986). PTSD symptoms in children include re-experiencing of traumatic events, avoidance of stimuli associated with the trauma and increased arousal such as sleeping disturbances (Goldstein & Wampler, 1997; Smith, Perrin, Yule, Hacam, & Stuvland, 2002; Punamäki, 2008; Scheeringa, Zeanah, Myers, & Putnam, 2003)). Although important, the effects of military violence on mental health through PTSD only are too narrow (Vogel & Vernberg, 1993). The research of parental physical and emotional abuse for its part started from the exploration of child's problem behaviour such as fighting with others and aggression. (Shields & Cicchetti, 1998). The follow-up study by Viemerö (1996), for example, showed that parental aggression, punitivity, and attitudes of rejection were among the best predictors of delinquent behaviour in young adulthood, especially for girls.

In recent years the mental health symptoms among children experiencing military violence have been studied more extensively. A review of children exposed to war-related stressors concluded that a spectrum of psychological morbidities including posttraumatic stress, mood disorders, externalizing and disruptive behaviours, and somatic symptoms were experienced. The problems were determined by dose response effect, meaning that the more children in war scenes had experiences of destruction, death and losses the more they had these symptoms. (Shaw, 2003). In more detaile, Amone-P'Olak, Garnefski & Kraaij (2007), for example, found that the more the

Ugandan children had experiences of war atrocities and other negative life events the more they had internalizing symptoms such as withdrawal, somatic complaints and anxiousness. In the longitudinal study by Dyregrov, Gjestad, & Raundalen (2002) the mental health of Iraqi children was followed up. The results revealed that children continued to experience sadness and remained afraid of losing their family two years after the Gulf War.

In recent years maltreatment research has likewise broadened its spectrum from problem behaviour to internalizing symptoms as well as to social relations. For example, Toth, Cicchetti, & Jungmeen (2002) as well as Flores, Cicchetti, & Rogosch (2005) have shown that compared to non-maltreated children, children with experiences of parental violence and neglect had higher levels of internalizing and externalizing behaviour. As in military violence, in parental violence too, these problems are determined by dose response effect; children who experience more serious physical abuse show more internalizing and externalizing behavioural problems than those who experience less serious abuse (Stockhammer, Salzinger, Feldman, Mojica, & Primavera, 2001). Finzi et al. (2001) substantiated the specific role of parental violence as a source of internalizing problems, reporting that children exposed to parental violence had more depressive symptoms and suicidality not only than non-maltreated children but also than neglected children.

Few published studies among children exposed to military (Paardekooper et al.1999; Howard & Hodes, 2000, Adjukovic & Biruski, 2008) or parental violence (Gershoff, 2002; Lepistö, 2010) support the idea of maladaptive consequences of violence for social relations. Severe and accumulative traumatic events impair friendship quality by increasing withdrawing, rejecting and negatively-toned peer relations (Paardekooper et al., 1999). Traumatic war experiences also tend to increase children's aggressive behaviour (Kerestes, 2006; Qouta, Punamäki, Miller, & El Sarraj, 2008), and aggressive children in turn enjoy low peer popularity (Brendgen, Vitaro, Turgeon, & Poulin, 2002). Likewise, maltreated children have lower levels of social competence and social acceptance (Futa, Nash, Hansen, & Garbin, 2003). More specifically, they have

difficulties empathizing with others and developing friendships and later in life also problems with dating partners (Westby, 2007; Wolfe, Wekerle, Reitzel-Jaffe & Lefebvre,1998). In the developmental perspective, the deterioration of social relations can be a "vicious circle", because good social support has been found to have a very positive impact on the adjustment of children exposed to violence (Kovacev & Shute, 2004; Simich, Beiser, & Mawani, 2003).

1.3.1 The underlying mechanisms

In addition to mental health and social consequences, violence also has an extensive effect on a child's cognitive processes, such as memory, meaning making and attributions (for example, van der Kolk, 1996). New methods enable the search for possible moderators and mediators explaining the association between violent experiences and mental health disturbances. The constant stress that children exposed to violence experience finds its way to developmental and mental health problems through cognitive processes. This means dramatic changes in thinking, remembering, problem solving, as well as feelings and emotional expressions (Punamäki, Qouta, El Sarraj, 1997; Punamäki, Muhammed, Abdul-Rahman & Ahmed, 2004).

Among war traumatized children and adolescents in Uganda and Iraq, the use of denial and rumination as the cognitive strategies significantly explained the extent of PTSD symptoms, internalizing and externalizing problems (Amone-P'Olak, Garnefski & Kraaij, 2007). Furthermore, the Palestinian adolescents with low cognitive capacity, meaning poor concentration, attention and ability to organize memory, were especially vulnerable to mental heath problems in acute military violence situation (Qouta, Punamäki, Montgomery, & Sarraj, 2007).

The study by Wright, Crawford & Del Castillo (2009) showed that individuals with childhood experiences of emotional violence and maltreatment had negative self-associations (automatic and explicit). They had also unconditional schemas of shame and defectiveness later in life. Lepistö et al. (2010) recently reported that adolescents with

experiences of parental violence are more prone to give in during a conflict situation. They also used “seeking to belong” and “self-blame” as coping strategies more often than their nonabused peers. One could argue that exposure to interpersonal violence generates maladaptive beliefs about oneself that impair mental health and children’s functioning in peer relations.

Further it was demonstrated that among maltreated children the harmful cognitive processes, like under-regulated emotion pattern, especially affected the development of anxious and depressed symptoms (Maughan & Cicchetti, 2002). The study by Wright, Crawford & Del Castillo (2009) showed that emotional abuse and neglect were associated with subsequent symptoms of anxiety and depression and were mediated by maladaptive self related schemas like defectiveness, shame and self-sacrifice.

In this study the mental health and social consequences of violence are studied in Articles II and III. In the review (Article I) we explore how the knowledge of cognitive, emotional and social aspects of violence and their interactions are translated into tools for helping children exposed to violence.

1.4 Intervention- Enhancing adjustment

To alleviate the suffering of children in violent conditions, treatment and prevention procedures are developed. Figure 1 shows the two main approaches to treatment and prevention. The symptom based methods approach aims at decreasing psychological symptoms. These methods rely on the idea, that only when free of maladaptive processes that perpetuate symptoms of PTSD and depression are children able to prosper and accomplish their healthy development. The assumption underlying the resilience based approach is that by enhancing and helping to maintain children’s very basic cognitive, emotional and social developmental processes during hardships mental health problems could be avoided or existing maladaptive processes prevented from exacerbating.

While both approaches are important when helping children suffering from violence, the developmental aspects discussed above indicate the extreme importance of preventive methods which allow differentially symptomatic children to participate. Prevention science focuses on reducing the incidence of maladaptive behaviour and on promoting healthy behaviour. With the help of prevention science the conceptualizing, designing and evaluating interventions as well as disseminating knowledge about them is possible. (Reynolds 2004). The main focus in violence research has been on group based preventive interventions emphasizing normalization, recovery and guarding against psychopathology. Thus, preventive intervention can be viewed as a cost-effective way to help a large number of vulnerable children.

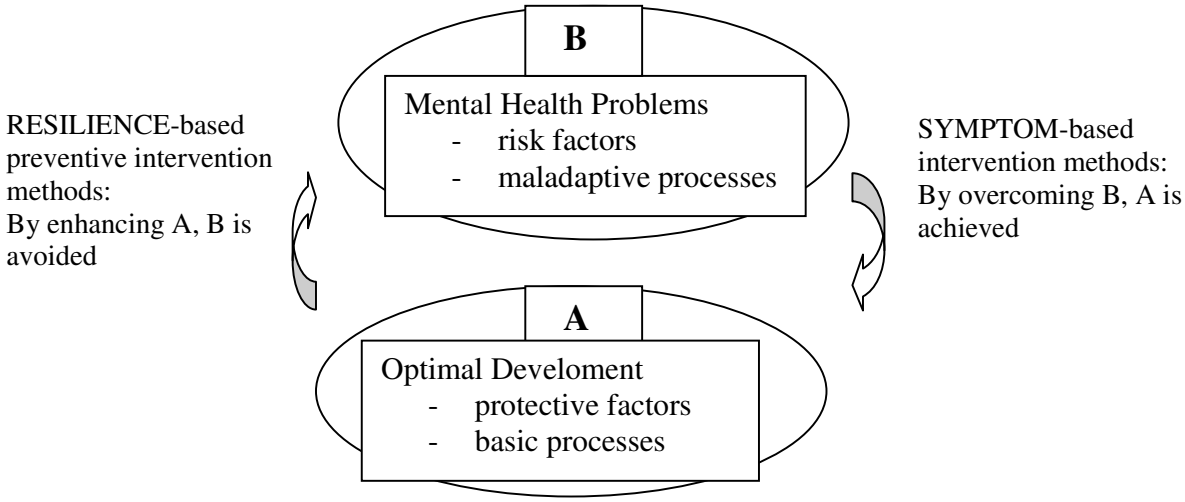

Figure 1. Resilience and symptom based methods in mental health interventions

When using the classical broad definition of prevention formulated by the Commission of Chronic Illness (1957) most of the interventions with children affected by violence could be seen as preventive interventions. Primary prevention seeks to reduce the number of new cases of a medical disorder, while secondary prevention aims at reducing the rate of diagnosed cases of the medical disorder in the population. The

function of tertiary prevention is to alleviate suffering and reduce the harm among people already diagnosed with a medical disorder.

Modern prevention research can be viewed as starting with the work of the American Psychology Association (APA) Task Force on Prevention, Promotion and Intervention Alternatives in Psychology in the 1980's and continuing in the work of the APA Presidential Task Force on Prevention: Promoting Strength, Resilience and Health in Young People. The Task Force concluded that prevention research had developed enough in order to draw together the existing knowledge and offer key findings to guide prevention practice and policy. The task force members considered that the major issue is the degree to which different types of preventive interventions should be implemented; should the programmes be targeted to specific at-risk groups using *selective* or *indicated prevention approaches* or spread across all groups with no differentiation using *universal prevention approaches*. (Weissberg, Kumpfer, & Seligman, 2003)

Recently, so-called comprehensive prevention programmes combining universal, selective and indicated approaches and involving community, school and family components have been developed, with highly positive effects. In a military violence situation one such example is the multi-layered psychosocial care system for children on a four-country programme (Burundi, Sri Lanka, Indonesia and Sudan) (Jordans et al., 2010). The programme aimed to translate common principles and guidelines into a comprehensive support package and included different overlapping levels of interventions to address varying needs for social-pedagogic, psychosocial, psychological and psychiatric support.

1.4.1 Theoretical and evidence base

O'Donnel, Tharp & Wilson (1992) suggest that there should be a cyclical process between theory and practice, meaning that psychological research and interventions should constantly benefit and revise each other. Developmental and other theories can be used to identify potential underlying mechanisms and targets of intervention (Greenberg,

Domirovich & Bumbarger, 2001): Where to direct the sharp point of the "intervention arrow"? What works? Why does it work? How does it work? In which circumstances it works? What are the costs? When translating theoretical methods into practical strategies, planners have to consider the theoretical parameters – the antecedents of effectiveness- very carefully. However the gap between theory and practice is rather difficult to bridge. Instead of theories, recommendation for the development of intervention strategies are often drawn from related practice domains e.g. the effective interventions of related practices (Nicholson & Henry 2003). Theory provides methods for the accomplishment of programme objectives; the parameters of the methods guide the translation of the methods into strategy. Theory-driven health promotion programs require an understanding of the components of theories and their practical forms. (Kok et al. 2004).

The dissemination of interventions with empirical support for their efficacy has nevertheless increased within the field of clinical psychology in the past decade (Forchuk, 2001; Schaeffer et al., 2005). During the dissemination controversies have emerged about defining the concepts of 'evidence' (Waddell & Godderis, 2005) and 'evidence-based' (Biglan, Mrazek, Carnine, & Flay, 2003). At least APA (Chambless et al., 1998), Evidence-Based Practices Project (EBP) (Mueser, Torrey, Lynde, Singer, & Drake, 2003) and Office of Mental Health and Addiction Services (OMHAS, 2005) have provided definitions of evidence based interventions.

To demonstrate efficacy the APA requires between group design experiments. The experiment should demonstrate that the intervention is statistically significantly superior to the control condition. It also demands that experiments must be conducted with treatment manuals. The characteristics of the client samples must be clearly specified and experiment effects must have been demonstrated by at least two different investigating teams. The EBP presents a less rigid definition of evidence-based practice and research and sees an evidence-based practice as an intervention for which there is strong research demonstrating effectiveness in assisting consumers to achieve outcomes. The highest standard of research design is the randomized clinical trial. If multiple randomized (and in some cases also quasiexperimental) trials exist, the intervention that

consistently outperforms others could be said to be "supported by the evidence". Finally, the OMHAS suggests that clinical and prevention practices and their relation to research can be placed on as evidence continuum ranging from multiple studies using randomized assignment of patients in clinical settings to no evidence supporting the efficacy or efficiency of the practice.

In an ideal situation for a mental health intervention planner is to search for the available reports and find the most effective method. Unfortunately, this is not so far the case in the field of children and violence. Forchuk (2001) suggests that in order to select the best possible methods for the problem, practitioners should begin by looking at evidence based journal articles, reviews or even computerised decision support systems, which are the highest level of resource. The results of well designed studies will provide the most reliable knowledge in order to provide the best possible services. Concerning military violence interventions synthesis and reviews of clinical trials exist. Interventions among children suffering from parental violence only original published articles serve as the source of clinical evidence.

The reviews on the effectiveness of interventions for children with collective trauma emphasize the need for sophisticated intervention research and remind researchers of the feasibility of this activity despite difficulties in war or disaster conditions. While CBT-based methods are supported, there is little evidence available on war trauma interventions among children and adolescents. Also, finding out the processes behind psychopathology and ways to support development are called for. In methodological language this means the search for moderating and mediating variables in intervention effectiveness studies. (Barenbaum et al., 2004; Lloyd et al., 2005; National Child Trauamtic Stress Network, 2005; Stallard & Salter, 2003; Vernberg & Vogel, 1993; Vostanis, 2004; Yule, 2000).

Unfortunately large scale reviews, and even single effectiveness studies comprising interventions focusing purely on children affected by parental violence are almost non-existent. Although the prevention of violence towards children is regarded as an important sociopolitical issue, the evidence of preventive programmes is very slight. A

general review of childhood maltreatment concludes that the quality and quantity of available data vary according to the type of abuse. Moreover, the results of the interventions reviewed were too fragmentary to enable the formulation of definitive judgments even on maltreatment in general. (Dufour & Chamberland, 2004). One of the few reports concerning the treatment of physically maltreated children revealed that most popular intervention was "therapeutic daycare", in which the cognitive and other developmental skills of the child are supported accompanied with parent education and therapies (Oates & Bross, 1995). Later, Fantuzzo, Manz, Marc & Meyers's (2005) study have substantiated this conclusion by showing that the peer mediated treatment of physically maltreated and socially withdrawn children was effective in increasing the collaborative peer play interactions.

1.5 Research questions and hypotheses

Article I

The first aim of the literature review is to evaluate the effectiveness of preventive interventions to improve children's mental health and enhance their emotional, cognitive and social development in conditions of war, military trauma, terrorism and being refugees. The second task is to analyse the nature of the underlying mechanisms for the success of preventive interventions and the theoretical premises of the choice of intervention techniques, procedures and tools.

Article II

The focus of the second study is on developmentally salient social relations among war affected children. The aims are first, to examine how children's personal exposure to military trauma is associated with peer relations (loneliness and friendship quality) and sibling relations (warmth, conflict, rivalry and intimacy), and whether the associations are

gender and age specific. Second, we test whether peer and sibling relations mediate the association between military trauma and the symptoms of PTSD, depression and psychological distress. Third, we examine the moderating role of good peer and sibling relations in protecting child mental health against negative trauma impacts. If good social relations protect children's mental health, exposure to military trauma is not associated with high levels of psychological symptoms (PTSD, depression and psychological distress) if children enjoy good peer relations (friendship quality and low loneliness) and/or good sibling relations (high warmth and intimacy, and low conflict and rivalry).

Article III

This study first examines whether different levels of parental violence are differently associated with child reported mental health, indicated by internalizing and externalizing symptoms and prosocial behaviour among the positive resources. We hypothesized a dose-response effect between parental violent behaviour and the adolescent's problems. This means that we expect adolescents exposed to parental violence to have higher levels of mental health problems and lower levels of prosocial behaviour than with adolescents with no experience of parental violence. Further, we hypothesized that adolescents exposed to more severe forms of parental violence have more of these problems than with adolescents with exposure to milder levels of parental violence. Second, we examine whether the association between different severity levels of parental violence and mental health is gender specific and whether there are differences in the prevalence of parental violence and in the association between parental violence and child mental health between two Nordic countries.

2. Methods

2.1 Participants and data collection

In the literature review (Article I) the eligible studies for the review were searched manually from journal articles and other publications published between 1980 and 2008. The keywords for the manual search were: prevention, intervention, treatment, children, trauma, PTSD, mental health, child development, refugees, violence, military conflict, war and terrorism. To be included in the review, a study had to meet the following criteria: (a) the intervention or programme should include systematic action for children with or without trauma symptoms for a limited time period, (b) primary foci were child and adolescent mental health, and psychological, social or behavioural development and functioning, (c) mean age of subjects less than 18, (d) participants were considered at risk for developing potentially serious mental health or developmental problems or be currently suffering from these problems, and (e) intervention description and possible results of effectiveness had been published in international scientific journals and book chapters.

In Article II the participants were 227 Palestinian school children in the Gaza Strip, of whom 36 % were girls and 64% boys. Their ages ranged between 10 and 14 years ($M = 11.37 \pm 1.10$). Four school classes (2 of girls and 2 of boys) in two schools in Northern Gaza were recruited to participate in the study in 2006. One school was located in an area with a high level of military violence indicated by house destruction and bombardment, while the other school was in a less exposed area. An information meeting was held at each school and separately in each participating class. The purpose of the study was explained and the children were asked to take an information sheet home to their parents. However, only verbal consent was required from parents. The research

protocol was approved by the Ethical Committee of the Gaza Community Mental Health Programme (GCMHP) and permissions to enter the schools were obtained from the school respective headmasters. The research procedure in the schools was conducted by two Palestinian researchers. They held information meetings at each school separately in each of the participating classes, explaining the purpose of the study to the pupils and teachers. Written information about the study procedure was sent to parents through their children.

Pupils completed the questionnaires during school hours in two sessions each lasting about one hour. The researchers gave the instructions to the classes and were present during the sessions and gave advice and information when requested.

In Article III the analysis is based on the Finnish Child Victim Survey (2008) and the Danish Youth (2008) Study. In Finland the data were collected among 12-13 (6^{th} graders) and 15-16 (9^{th} graders) year old pupils and the research was conducted by the Police College of Finland. In this study only the data for 9^{th} graders is analysed. In Denmark the data was collected among 9^{th} graders and was conducted by the National Institute of Public Health, University of Southern Denmark. The final Finnish sample consisted of 2,856 girls and 2,906 boys and the final Danish data 1,999 girls and 1,944 boys.

When reporting the results we refer to participants of this study with the term "children" even though the actual age is early adolescence. This is done because of the more fluent reading of discussion. In both countries the surveys were based on multimedia computer-based self-administered questionnaires, which the children answered during school hours. The Finnish children accessed the questionnaire via a website which included information about the project as well as about violence in general. The survey was administered by teachers in the schools who were all properly instructed by the research team. The Danish survey was conducted in the school classroom where trained interviewers introduced the survey method and remained in the classroom while the students completed the questionnaire. The data is a representative

sample of mainland Finland and its Finnish and Swedish speaking 9th graders and also a representative sample of Danish 9th grade pupils in the mandatory school system.

2.2 Measures

Article II

Military trauma was measured by a 25-item list capturing typical violent and traumatic events during the Al-Aqsa Intifada (Qouta, Punamäki, & El Sarraj, 2005). Twelve events refer to own losses and experiences of military violence (e.g., shelling of home, being detained, wounded and beaten, losing a family member) and 13 events to witnessing killing, injury, home demolition and destruction. The children reported whether they had been exposed to the event (1 = *yes*; 0 = *no*) during the last year. A linear sum variable was constructed by counting the "yes" answers.

Peer relations were measured by 15 items of the Children's Loneliness (Asher, Hymel, & Renshaw, 1984) and the Friendship Qualities questionnaires (Bukowski, 2004). The participants evaluated on a 5-point scale how well the descriptions fitted their experiences with peers and schoolmates ranging from 1 = *not at* all to 5 = *very well*. Two averaged sum variables were calculated. Loneliness in peer relations included seven items (e.g., "Other students don't like to be with me") α=.72 and Friendship quality eight items (e.g., "I have friends with whom I can share my secrets" α=.79.

Sibling relations were measured on the Dunn Sibling Relation Scale involving 22 items covering positive and negative aspects of relations (Dunn 1994). The participants evaluated separately how well the descriptions matched their relations with one of their older and one of their younger siblings (11 items per sibling) on a 5-point scale ranging from 1 = *not at all* to 5 = *very well*. Four averaged sum variables were calculated. The

items describing relations with older and younger siblings were combined. If children reported relations with only one sibling (n= 94), that averaged sum was applied. Siblingship warmth, intimacy and conflict scales each consisted of six items. The siblingship rivalry scale had four items. The scales had satisfactory internal consistencies: Siblinship warmth α=.79, conflict α=.81, rivalry α=.74 and intimacy α=.72

Post Traumatic Stress Disorder (PTSD) symptoms were measured by the Child Post Traumatic Symptoms (CPTS-R) by Nader, Pynoos, Fairbanks, al-Ajeer & al-Asfour (1993). This is a 20-item scale covering the constructs of intrusion (9 items), avoidance (7 items), and arousal (7 items) symptoms. The participants indicated on a 5-point scale how often they had experienced each symptom during the last two weeks ranging from 0 = *never* to 4 = *most of the time*. The CPTS-R has been found to be reliable and valid among Palestinian children (Punamäki, Qouta, & El-Sarraj, 2001; Qouta, Punamäki & El Sarraj, 2005). In this study the total sum scale was used and α=.80.

Depressive symptoms were measured on the Child Depression Inventory (CDI) by Kovacs (1981). This is a 27-item self-report instrument to assess the cognitive, affective and behavioural dimensions of depression in children. The items consist of three sentences of which participants were instructed to select the one best describing how they had been feeling in the past two weeks. Each sentence is given a rating of 0, 1 or 2 indicating the increased severity of depression. A total sum variable was constructed and α=.83.

Psychological distress was measured on the Strengths and Difficulties Scale (SDQ) by Goodman (1997). This consists of 25 items or psychological attributes describing emotional problems of depression and anxiety, behavioural problems such as aggression and hyperactivity, relational problems and prosocial behaviour. Each dimension consists of five items and participants evaluated how well the description fitted them on a 3-point scale ranging from 0 = *not at all* to 2 = *yes, fits well*. In the analysis of Article II emotional, behavioral and hyperactivity scales were summed up to a

total score of psychological distress. The SDQ peer problems scale was omitted due to its potential overlap with peer relations. The test-retest reliabilities, internal consistency and criterion validity of the SDQ scale have been established among Palestinian children (Thabet, Stretch, & Vostanis, 2000). In this study the reliability of the total score variable was moderate, $\alpha = .68$.

Translations The research instruments assessing peer and sibling relations were not available in Arabic. A bilingual psychologist first translated them from English into Arabic, and a researcher then made the backtranslation.

Article III

Parental violence was measured using Finnish and Danish versions of the Conflict Tactics Scale created by Straus (1979). This scale consists of 14 items beginning with parental aggressive verbalization towards the child and moving to severe violent acts towards the child. Participants responded by indicating whether they had experienced such acts (1 = yes) or not (0= no) during the previous 12 months. Four groups indicating different severity levels of parental violence were formed based on these answers. The "No violence" group included children reporting no experiences of verbal aggression or mild or severe physical violence. The "Verbal aggression" group included children reporting having experienced verbal aggression but no mild or severe physical violence. Acts of verbal aggression included items such as "sulking or refusing to talk, insulting or taunting or swearing, and threatening with violence". The "Mild physical violence" group included children who had experienced mild parental violence accompanied or not accompanied by verbal aggression. Acts of mild physical violence included "pushing or shoving or shaking, hair pulling, smacking and whipping". The "Severe physical violence" group included children who had experienced severe parental aggression accompanied or not accompanied by acts of mild physical violence and/or verbal aggression. Acts of severe physical violence included "battering, hitting with a fist, hitting with an object, kicking, threatening with a knife or gun and using a knife or gun".

Total difficulties score, internalizing and externalizing symptoms and prosocial behaviour were measured on the Strengths and Difficulties Scale (SDQ) by Goodman (1997). The scale consists of 25 items on psychological attributes describing internalizing problems of depression and anxiety, and externalizing problems such as aggression and hyperactivity, plus prosocial behaviour. Participants evaluated how well the description fitted them on a 3-point scale (0 = not true, 1 = somewhat true, 2 = certainly true). Factor analysis (Varimax) was applied to check the validity of dimensionality. The results revealed a somewhat different factor structure than the traditional five-scale solution in SDQ and the reliability of the original dimensions of SDQ was low in the data. The best fitting factor solution in these analyses was a 3-factor model. Based on these factors averaged sum variables of externalizing (7 items), internalizing (8 items) and pro-social behaviour (9 items) were formed. The SDQ total difficulties score was calculated the same way as the Psychological Distress score in Article II. The reliability of the SDQ for children's self reports was. α= .67 SDQ total score, α= .71 for internalizing symptoms, α= .71 for externalizing symptoms and α=.65 for pro-social behaviour.

2.3 Statistical Analysis

In order to evaluate the effectiveness of preventive interventions in the literature review (Article I), we applied meta-analysis by calculating and combining the effect sizes (ES) for the most commonly used outcome measure, namely PTSD. For experimental and quasi-experimental studies including treatment and control groups ES is defined as the difference between the mean scores of the treatment and control group following intervention divided by the pooled standard deviation of the outcome scores of the two groups. We used the standardized mean difference procedure described by Lipsey and

Wilson (2001), which is commonly applied in meta-analyses. Data were analysed for summary effects using Review Manager 4.2 software.

To examine how military trauma is associated with peer and sibling relations, and whether good peer and sibling relations can protect children's mental health from military trauma (moderation effects) (Article II) hierarchical multiple regression analyses with main and interaction effects were used. The analysis of social relations mediating between military trauma and mental health was based on regression models as recommended by Baron & Kenny (1986) and Holmbeck (2002). The Bonferroni method was applied to control the type I error rate in multiple testing. A Bonferroni adjusted p-value is the normal p-value multiplied by the number of outcomes being tested.

Further, the formal tests of mediation were conducted for six possible mediators (Friendship quality and Loneliness and Siblingship warmth, intimacy, rivalry and conflict) on three outcome variables (PTSD and CDI Depressive symptoms and SDQ Psychological distress). The genuine protective interaction effect indicate that exposure to high level of military trauma was not associated with increased level of PTSD symptoms among children enjoying good peer or sibling relations. The interaction terms were based on the centred sum scores, which controls for multicollinearity between the main effects and the corresponding interaction effects did not distort the analyses (Aiken & West, 1991)

To examine the associations between parental violence and child mental health and their gender and nationality specificity the four (violence: no violence, verbal, mild and severe) X 2 (gender) X 2 (nationality) between subjects factorial multivariate analysis of variance (MANOVA) with their two-way interactions was applied to the dependent variables of the SDQ total difficulties score, internalizing symptoms, externalizing symptoms and prosocial behaviour (Article III). A Bonferroni correction was used to obtain a more conservative alpha level. The post hoc tests using the Tukey's HSD post hoc criterion for significance were conducted to examine the differences between four severity levels of parental violence.

3. Results

3.1 Article I

Effectiveness of preventive interventions to improve children's mental health and enhance their emotional, cognitive and social development.

The literature review revealed that ten out of 16 studies which quantitatively measured the intervention effectiveness reported a decrease in PTSD symptom or diagnostic scores as an outcome of the intervention. However, only four of them were eligible for the formal meta-analytic calculation of the overall effect size of PTSD decrease. The results showed that two interventions showed a large power of positive changes in PTSD in the experimental group compared to the control group, whereas two interventions showed a small power. It can be concluded that the conclusion of effectiveness differed between the results of the original studies and results of the meta-analysis. The original studiers argued that preventive interventions decrease children's PTSD in conditions of armed conflict. These conclusions can, however, be compromised by inappropriate research settings according to the strict meta-analytic criteria, exacting pre and post tests with randomized experiment and control groups. The results further suggest that nine (out of 16) interventions were effective in reducing other mental health problems such as depression, anxiety and behavioural problems among children in armed conflict.

Only three of the studies reviewed examined the effectiveness of the intervention on cognitive, emotional or social processes. The study by Dybdahl, (2001a; 2001b) showed that a family-focused intervention among Bosnian war-traumatized families was marginally effective in improving children's cognitive performance. Another study demonstrated intervention effectiveness in increasing girls' self- esteem and positive

attitudes towards the enemy among war-traumatized Croatian children (Woodside, Santa Barbara & Benner, 1999). Third, Vickers (2005) reported in her single-case study that the CBT intervention applied resulted in profound positive changes in the participating boys' social development and their family's interactional quality.

The nature and theoretical premises of the underlying mechanisms for success of interventions and related techniques.

Psychosocial preventive interventions among children exposed to war, military violence, terrorism and refugees differed considerably in the techniques and tools applied. Group therapies based on Cognitive Behavioral Therapy (CBT) were the most common modes. Fourty-fou per cent of studies reported the effectiveness of standard CBT or trauma- and grief-focused CBT group therapies. Different forms of creative therapies such as storytelling, playing and fantasizing were applied to treat war-traumatized children in two studies. Psychoeducative modules were common and they were typically applied as a part of the CBT or creative intervention methods.

All the interventions evaluated were based on theories and studies of protective factors and cognitive, emotional and behavioural mechanisms that contribute to children's symptom formulation in traumatic conditions. First, the majority of the interventions (16 out of 19) focused either wholly or partly on promoting children's cognitive skills and effective trauma processing. The techniques included correcting of biased interpretations and enhancing constructive reasoning and problem solving. Further, cognitive exercises involved new ways of making sense of trauma, adequate framing of traumatic memories and causal attributions, empowering coping skills and integrating of fragmented and intrusive thoughts and feelings into a more coherent experience.

Second, many of the interventions reviewed (12 out of 19) focused either wholly or partly on negative emotions such as grief, anger, guilt and fear. Various methods were applied to enhance adaptive recognition, expression, regulation and re-processing of painful, shameful and unrecognized feelings. Seven interventions involved behavioural

aspects in alleviating negative trauma impacts. For instance, children were familiarized with relaxation techniques and good sleeping habits and primed for their daily functioning by mapping fear-evoking events and building safe havens or setting and attaining positive goals.

Third, less than half (7 out of 19) of the interventions focused on improving of social relations in terms of promoting social support and problem solving as well as open communication. This was done, for example, by re-enacting conflicting social situations with introducing new aspects and identifying both positive and negative consequences.

Fourth, four out of 19 interventions aimed at encouraging rich, structurally coherent and healing symbolic processes by using, for instance, guided imagery, play and dream work. Finally, five out of 19 interventions applied techniques that aimed at positively affecting the societal level of protectors, for example, by promoting a sense of justice and community cohesion and providing information on children's trauma reactions to teachers and other adults.

3.2 Article II

How is children's personal exposure to military trauma associated with peer relations and sibling relations?

The results reveal that children exposed to a high level of military trauma reported poor friendship quality. The association between military trauma and friendship quality was both gender and age-specific. A high level of military trauma was associated with poor friendship quality especially among girls, while military trauma had no negative affect on boys' friendships. Exposure to a high level of military trauma was associated with poor friendships, especially among younger children, whereas trauma did not affect friendship quality among older children.

Concerning sibling relations, the results show that children exposed to a high level of military trauma reported more Siblingship rivalry than children exposed to a low level.

The association did not differ according to gender or age, as indicated by the non-significant interaction effects.

Does peer and sibling relations mediate the association between military trauma and the symptoms of PTSD, depression and psychological distress?

The results show that both peer and sibling relations mediated the association between military trauma and child mental health. In other words, trauma increased the probability of poor social relations, which in turn were associated with poor mental health. We found that children who were exposed to a high level of military trauma also had poor friendship relations, and subsequently suffered from depressive symptoms. In the same vein, children with high trauma exposure had high sibling rivalry, which was then associated with high PTSD symptoms.

Can good peer and sibling relations protect a child's mental health against the negative impacts of military violence?

Good sibling relations were able to protect a child's mental health from trauma impacts. As hypothesized, exposure to a high level of military trauma was not associated with depressive symptoms among children with low siblingship rivalry and was not associated with SDQ psychological distress among siblings who enjoyed high intimacy. Further, exposure to high level of military trauma was not associated with PTSD symptoms among siblings who enjoyed high warmth in their siblingships. Posititve sibliships had also direct associations with good mental health: children with high warmth and low conflict in their siblinships reported low levels of depressive and psychological distress symptoms. The interactions effects between military trauma and siblingship rivalry and siblingship intimacy, however, became marginal when adjusted with Bonferroni corrections. The results also revealed that high siblingship intimacy and low siblishship conflict were associated with low levels of CDI depressive symptoms and SDQ psychological distress.

Contrary to our hypothesis, good peer relations were not able to protect children's mental health from the negative impacts of military trauma, as indicated by the non-significant interaction effects. However, high friendship quality was associated with low levels of CDI depressive symptoms and SDQ psychological distress and high Loneliness with high levels of CDI Depressive symptoms and SDQ psychological distress.

3.3. *Article III*

Prevalence of parental violence

Experiences of parental verbal aggression or physical violence during the previous 12 months revealed clear differences between the sexes. This was true of all severity levels of parental violence, with girls reporting higher exposure. Being the target of parental verbal aggression (girls 39%, boys 20%), mild physical violence (girls 10%, boys 4%) or severe physical violence (girls 2%, boys 1%) was twice as common among girls than boys.

In the Danish sample about two thirds of girls (66%) and little more than half of boys (56%) reported no experiences of parental verbal aggression or physical violence during the previous 12 months. Being the target of parental verbal aggression (girls 43%, boys 33%) and mild physical violence (girls 9%, boys 4%) was more common among girls than boys, whereas the same number of girls and boys reported exposure to severe physical violence (girls 2%, boys 2%).

How is parental violence associated with child mental health?

As hypothesized, the results show a significant association between exposure to parental violence and SDQ total score , internalizing symptoms, externalizing symptoms, and prosocial behaviour indicating that children experiencing the more severe forms of parental violence reported poorer mental health and prosocial behaviour.

The comparisons between differentially exposed groups indicated a clear dose-response effect. Concerning all symptom measures the mean scores for exposure to parental verbal aggression were significantly higher than for non-violent condition. Further, the mean scores for exposure to mild violence were significantly higher than for verbal aggression. The mean scores for exposure to severe violence were significantly higher than for exposure to mild violence concerning externalizing symptoms but not SDQ total difficulties score or internalizing symptoms. Concerning prosocial behaviour, however, only the mean scores for exposure to mild parental violence was significantly higher than in no violence condition, indicating that the dose response effect is not so obvious. It is noteworthy that the mean score of total SDQ psychological distress exceeded the cut-off score for the borderline/abnormal range among Finnish but not Danish adolescents experiencing severe parental violence.

The association between parental violence and internalizing symptoms was gender specific. A high level of parental violence was associated with internalizing symptoms especially among girls. Also, the association between parental violence and mental health was nationality specific. Exposure to parental violence was associated with mental health symptoms especially among Danish adolescents. In general, the symptom scores, however, were lower for every class of parental violence exposure than for Finnish adolescents. In other words, there were clearer differences between the classes of exposure to parental violence in symptom scores among Danish than Finnish young people.

Boys had higher levels of both internalizing symptoms and externalizing symptoms symptoms than girls. Finnish adolescents had higher levels of internalizing symptoms and total SDQ psychological distress and lower level of prosocial behaviour than Danish adolescents.

4. Discussion

The aim of the present study was to examine how military and parental violence affects children's and adolescent's mental health and social relations (Articles II and III) and how these effects could be alleviated (Article I). The findings show that both forms of violence damage a child's psychological wellbeing in multiple ways. The results supported earlier findings of both internalizing (such as depressive and anxiety related problems) and externalizing problems (such as hyperactivity and problem behaviour) as the consequences of violence against children.

The two data sets in this study enabled the exploration of children's experiences of violence over one year. Although the context of violence was remarkably different, collective violence in war and interpersonal violence perpetrated by parents, revealed the sad reality of children's everyday life with violence related stressors. Two recent studies similar to ours confirm the high rates of direct and indirect exposure to violent experiences. The recent findings of Massad et al. (2009) among children in Gaza reported even higher rates of violence exposure than in our study. For example 13% had witnessed the destruction of their homes (compared to 5-8% in our study) and 13% were beaten during the incursion (compared to 4% in our study). When children were used as active participants in military violence the rates of harsh experiences were even higher (Amone-P'Olak, Garnefski, & Kraaij, 2007). Concerning parental violence in Finnish society Lepistö et al. (2010) explored adolescents experiences of coping with domestic violence among 1,393 participating adolescents in one municipality in Finland using the same measure (the Conflict Tactic Scale) as in our study. The rates of experiencing parental violence were even higher than in our representative study, with 67% experiencing verbal aggression, 55% mild and 9% serious violence (compared to 20-39% of verbal aggression, 4-10% mild violence and 1-2% severe violence in our study).

4.1 Violence and psychosocial wellbeing

With the help of the results in Articles II and III it is possible to examine whether the nature of violence contributes to social and mental health consequences. In other words, do collective military violence and interpersonal parental violence have different effects on children's social relations and mental health?

Both similarities and differences between the consequences of military and parental violence were established. In peaceful Nordic societies, the more adolescents had experiences of parental violence the more they suffered from anxiety and other internalizing symptoms as well as attention problems and other externalizing symptoms. Thus our study corroborated the earlier findings of parental violence being associated with both internalizing and externalizing problems (Toth, Chichetti, Jungmeen, 2002; Flores, Cicchetti, & Rogosch, 2005).

Similarly, in a war-zone, the more Palestinian children had been exposed to military violence (e.g. destruction of home, witnessing killing of family members and humiliation of enemy soldiers), the more they had depressive symptoms and psychological distress. Thus, the earlier results of multiple mental health problems were substantiated (for a review, see Shaw, 2003). The finding that there was no such a clear association between quantity of traumatic experiences and PTSD during military violence compared to other mental health problems could indicate the complex nature of military trauma meaning that different experiences result in different reactions in children. For example, it may well be that mental health consequences are different when the child witnesses violence and cruelty inflected on others than being personally the target of military violence.

Children's social relations were severely impacted during experiences of military violence, while the prosocial behaviour of children exposed to parental violence was less affected. It seems that when the whole population is not affected by violence children are

able to maintain their age salient human relations and perhaps gain important support from these. Adolescents who experienced parental violence succeeded in retaining their capacity to function fairly well in peer- and other relations outside home. At the critical age of 15-16 it seems that supportive relationships with friends and adult figures are extremely important. However, when everyone in the society is scared and having trauma reactions it is not easy to support each other. Likewise, the conquering the developmental tasks of friendship formation and maintenance is challenged.

4.1.1 Multiple meanings of social relations

The results revealed that children exposed to a high level of military trauma reported poor friendship quality, especially girls and younger children. At the time when the data of study II was collected insecurity was high among Palestinians. The increased military activity resulted in higher level of exposure to traumatic events. Concerning the development and maintenance of peer relations, these atrocities seem especially to disconcert children aged 9-11 and perhaps just learning the skills for intimate sharing and mutual trust. Further, intimacy and trust could be thought to be especially important aspects of girl's friendships, and horrible scenes of war seem to shatter them.

Quality of friendships mediated the association between traumatic experience and mental health symptoms. In other words, frightening experiences find their way to trauma symptoms partly through shattering peer relations and lack of opportunities to share the confusing reality. It is possible that due to the nature of Israeli military policy involving blockades, curfews and shutting down schools the peer relations have lost their natural beneficial function, which exacerbates the distress and the restlessness of children.

The twofold nature of social relations was evidenced in the quality of sibling relations. Siblingship rivalry both mediated and moderated the association between exposure to military violence and mental health problems. This means that the lack of rivalry in siblingship protected children exposed to violence against mental health problems, but the presence of rivalry was also the underlying mechanism between

traumatizing experiences and mental health problems. Maladaptive family structure thus made children vulnerable to psychopathology.

As Brock (2002), for example, states, the likelihood of developing mental health problems after traumatic experiences is explained by the nature and personal meaning of traumatic events as well as by the complex combination of protective and risk factors. Siblingship seems to be one of those factors with potential to serve either as a risk or protective factor depending on its quality. It could very well be that other family relations, also, have this twofold nature, and this should be further studied.

4.2 Supporting adjustment among children and adolescents exposed to violence

The Sphere Project by international non governmental organizations states that in catastrophic situations arising from conflict people have to have access to social and mental health services to reduce mental health morbidity, disability and social problems (Sphere handbook, 2004, p.291). However, what kind of help should be offered, in other words, the search for most "cost-effective" help for children in communal and interpersonal violence is still in its infancy. Our results on the efficiency of interventions revealed that the theory base was not fully utilized in the formulation of underlying mechanisms and related intervention techniques. Other efforts to review psychosocial and mental health care of children in war and disaster have come to the same conclusions emphasizing the complete lack of treatment mechanism research. (Jordans et al. 2009; Morris, van Ommeren, Belfer, Saxena & Saraceno, 2007).

Because of the urgent need for guidance, most recommendations concerning help for violence exposed children are based on expert opinions rather than on research. Consequently, interventions are being implemented without a complete understanding of their potential benefit or harm. Also, the research among adult population is not sufficient

to draw up guidelines for children (Summerfield 2000; Morris et al., 2007). Some main criteria for the definition of evidence-based research could be set: The tudy should contain between group design with randomized clinical trial or comparison groups that are not assigned by randomization (quasiexperimental). The results of the study should demonstrate effectiveness in achieving positive outcomes defined accurately in the research report. The results should be statistically significant. The study should be published in appropriate peer reviewed journals and available for review. And finally, the characteristics of the participants and target population must be clearly described.

As Kazdin & Nock (2003) note, not even evidence-based treatments are effective for all children with a particular problem. The work should be continued even after founding evidence for most effective techniques to alleviate the suffering of children and adolescents affected by violence. Studying intervention mediators and mechanisms helps to understand the complexities of interventions and to provide more effective ways to help children. However, we must remember that two children in the same treatment could conceivably respond for different reasons. The classification of the general evidence base, however, enables more creativity being used and more rapid decisions to be made in situations where there is an urgent need for planning and setting up interventions exists.

Intervention descriptions in scientific article often include the presentation of underlying mechanisms. They are not, however, descriptions of the background or method used in planning or mapping of the intervention. Rather, the underlying mechanisms are discussed afterwards. This discussion of the underlying mechanisms attends only partly to the process between theory and intervention practice. Frazier (2004) tells intervention researchers that decisions about potential moderators and mediators should be based on earlier research and serve as a basis for intervention methods. Likewise, a specific theory regarding why the intervention may be more effective for some people than for others is best made a priori in the design stage rather than post hoc. Thus, the prior knowledge of underlying mechanisms should be presented as a basis for intervention methods. In that way it is possible that developmental

psychological research and interventions form a cyclical process which is mutually beneficial and informative (O'Donnel 1992). In the review (Article I) it was shown that the most common tools for children exposed to violence were related to cognitive processes and were therefore seen as underlying or mediating mechanisms between exposure to violence and problems in mental health or social relations, which were measured as outcomes.

We are still on the way to exploiting the full potential of prevention and the role of social relations has been especially stressed (Betancourt & Khan, 2008; Olds, Hill, O'Brien, Racine & Moritz, 2003). Our study setting could not answer the question as to which age-salient social, emotional or cognitive processes should be promoted. However, one may speculate that in adolescence it would be important to include resources provided by the peer relations in preventive interventions.

Our results showed that violence forms a vicious circle for child development. Exposure to military violence deprives children of optimal peer relations that would be crucial in buffering children's mental health from negative trauma impacts. Also, children suffering from parental violence showed impaired prosocial behaviour. Although some intervention programmes already include tools to promote optimal social support and interactional problem solving skills (Dybdahl, 2001a; Thabet, Vostanis, & Karim, 2005), the protective and healing power of companionship, sharing and intimacy between peers exposed to similar hardships has not yet been fully mobilized as an intervention technique.

However, after the publishing of the review (Article I) two important intervention studies have been conducted among children exposed to military violence. In both of them, peer support and discussions with other children are central to the practice. The study by Peltonen, Punamäki, Qouta & ElSarraj (submitted) reported promising results of a school-based intervention among Palestinian children. The School Mediation Intervention focused on children's conflict resolution and problem solving skills and was successful in improving children's peer relations and prosocial behaviour. The Jordans et al. (2010) study on a multi-layered psychosocial care system described specific

intervention methodologies and their rationale in an effort to develop a replicable care package for children in complex emergencies. The results on intervention effectiveness have not yet been published.

4.3 Suggestions and future directions

This study suggests that traumatic experience may have its strongest impacts on the abilities which the child is currently practising or competencies he/she is about to acquire. With the current knowledge of child development and mental health there should be an ambition in designs to build bridges between developmental theories and practice. This is possible if: *First,* the maladaptive trajectory from childhood to adulthood is established (for example violent experiences in childhood and mental health problems in adolescence), *Second*, the effectiveness of the intervention in cutting this trajectory is demonstrated, and *third* the sophisticated elaboration of moderators and mediators reveals that interventions have worked by enhancing or buffering the critical developmental tasks.

The acts related to corporal punishment and in this study conceptualized as mild violence such as pulling children's hair, slapping and pushing are legally punishable in both Finaland and Denmark. Yet these acts are traditionally concerned as needful acts of discipline and still advocated by some. Disciplinary strategies and subsequent use of violence are strongly associated with cultural beliefs regarding how parents should socialize children into the family and society (Westby, 2007). In this study (Article III) most of the adolescents who had experienced parental corporal punishment during the last year had, however, also experienced psychological aggression such as subjugating and swearing. Thus, in most cases acts of mild violence do not serve the function of controlled and systematic sanction of unacceptable behaviour in an educational

atmosphere but were accompanied by subjugating and swearing at the child. Further, in the study by Lau, Liu, Cheung, Yu, & Wong (1999) corporal punishment was strongly associated with being beaten by parents for no apparent reason and being beaten to the point of injury by family members. Thus, slapping and whipping a child is not an innocent or incontrovertibly acceptable way to discipline a child. Quite the contrary, preventing corporal punishment might help prevent the occurrence of more serious forms of physical abuse.

Sadly, adolescents experiencing family violence do not seek help, even though their self-related health and life-satisfaction have been found to be below average (Lepistö et al. 2010). The results of this study confirm that children are vulnerable and suffer from a violent family environment. Therefore, it is easy to support the opinion of Lepistö et al. that resources should be developed to identify these vulnerable adolescents and care providers should take action to protect children. One such step is the forth coming Finnish law which necessitating legal proceedings for parental violence against under-aged children and adolescents, even though the victim him/herself is not willing or able to prefer criminal charges. This is an important societal prevention of the accumulation of violent experiences.

The reassuring finding of a recent review by Ozturk, Leventhal & Dobbs (2010) is that children who suffer from parental violent acts are not willing to continue abuse in their own children. Also, the study by Woodside et al. (1999) showed that in war zones children's attitudes towards violent conflict resolution could be affected. Maybe mankind can be optimistic and believe that the generations that come after us will be wiser and more tolerant of each other.

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AGGRESSIVE BEHAVIOR
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Preventive Interventions Among Children Exposed to Trauma of Armed Conflict: A Literature Review

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Increasing research is available on the preconditions for child mental health and optimal development in traumatic conditions, whereas less is known how to translate the findings into effective interventions to help traumatized children. This literature review analyses the effectiveness of psychosocial preventive interventions and treatments and their theoretical bases among children traumatized in the context of armed conflicts (war, military violence, terrorism and refugee). The first aim is to evaluate the effectiveness of preventive interventions in preventing emotional distress and impairment and promoting optimal emotional-cognitive and social development. The second task is to analyze the nature of the underlying mechanisms for the success of preventive interventions, and the theoretical premises of the choice of intervention techniques, procedures and tools. We found 16 relevant published studies, but an examination of them revealed that only four of them had experimental designs strong enough that they could be included in the meta-analysis. While the subjective reports of the researchers suggested that systematic preventive interventions were effective in decreasing PTSD and depressive symptoms among children traumatized due to armed conflict, the more objective results of the meta-analysis and the weaknesses in designs uncovered during the meta-analysis undermine such a conclusion. Additionally, a majority of the reported preventive interventions focused only on children's biased cognitive processes and negative emotions, while only a few aimed at influencing multiple domains of child development and improving developmental functioning on emotional, social and psychophysiological levels. It is concluded that substantial additional work needs to be done in developing effective preventive interventions and treatments for children traumatized by exposure to war and violence. Aggr. Behav. 36:95–116, 2010. © 2009 Wiley-Liss, Inc.

Keywords: interventions; children; trauma; review

Safety, love, health, family support and schooling form the basis of children's human rights. Childhood should be dedicated to enjoyment, experimenting and learning human tasks and virtues without excessive burdens and responsibilities. Yet, worldwide a substantial number of children lack basic resources that can guarantee their healthy psychosocial development and are deprived of safety due to armed conflicts. According to UN statistics, about two million children have been killed and six million seriously injured or permanently disabled in armed conflicts in the past decade [Marcal, 2003]. The negative consequences of wars, terrorism, military violence and poverty on children's psychosocial development and mental health are of great concern. Effective interventions to reduce their emotional suffering and promote their mental health are considered one of the major global mental health challenges [UNICEFF, 2004].

On the other hand, research on developmental vulnerabilities and strengths has gained momentum; we know increasingly which factors related to children, family and community can either protect or impair children's mental health and optimal development. Also, theoretical and empirical modeling of preventive interventions has made great progress, providing guidelines for planning and implementing evidence-based and effective interventions for traumatized children and their families [Bisson and Cohen, 2006; Cohen et al., 2006; Ehntholt and Yule, 2006]. A crucial question is whether and how these scientific and professional achievements have been applied to help traumatized children in armed conflicts. Accordingly, we analyze

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the effectiveness and theoretical underpinnings of preventive interventions among children exposed to traumatic events of wars, terrorism and military violence. Some of the children studied continue to live in conflict areas and others live as refugees in safer societies.

Traumatic Experiences and Child Mental Health

Researchers agree that traumatic events involving life-threat, helplessness and horrifying scenes contribute a risk to mental health and developmental problems among children [Ehntholt and Yule, 2006]. Commonly trauma-related mental health consequences are conceptualized as posttraumatic stress disorder (PTSD). The symptoms include re-experiencing of traumatic events as flashbacks and repetitious thoughts, avoidance of trauma-related memories and numbing of feelings and increased arousal evident in concentration problems and sleeping disturbances [Pynoos et al., 1996]. Among toddlers and preschoolers, PTSD symptoms may involve night terrors and ritualistic play [Scheeringa et al., 2003]. Research shows that although a majority of children experience severe distress after traumatic events, only a minority develops diagnostized or full-blown PTSD [Taylor and Chemtob, 2004].

The nature of trauma is important for the emergence of PTSD. As with adults, human made intentional abuse seems to be more traumatic than natural disasters. About a quarter (17–25%) of children exposed to severe collective trauma, such as natural and technical disasters, suffer from PTSD, whereas among victims of interpersonal trauma such as sexual abuse the rate is considerably higher, ranging from 40 to 58% [Punamäki, 2008; Taylor and Chemtob, 2004]. In the chronic conditions of war and military violence in the Middle East, the PTSD prevalence has been documented to be 20–25% among children [Laor et al., 1997; Thabet et al., 2002a], but personal exposure to severe violence and losses can result in prevalence as high as 58–69% [Palestinian children: Elbedour et al., 2007; Thabet et al., 2002b] or 80% [Iraqi children: Dyregrov et al., 2002]. Similarly, research has revealed very high levels of PTSD among African children in Sudan [Morgos et al., 2008] and Rwanda [Schaal and Elbert, 2006]. This review concentrates on the consequences of traumatic events caused by armed conflicts. Children thus experience human-made trauma but in a less intimate context than family traumas. However, the consequences of military traumas are highly devastating including loss of close persons, demolition of home and witnessing of killing.

Furthermore, excessive fears and internalizing and externalizing symptoms are common consequences of traumatic events [Yule, 2000]. Among refugee children anxiety manifested itself by increasingly dependent behavior, e.g. clinging to parents and expressing fear of being left alone or fear of sleeping in the dark [Montgomery and Foldspang, 2005]. Traumatic events have especially negative impacts on regulative processes on cognitive (e.g. attention, memory and interpretation), emotional (soothing, recognition and expression) and functional (sleeping and eating) domains, which places traumatized children at increased risk for subsequent psychopathology [Maughan and Cicchetti, 2002]. As with adults, high co-morbidity between PTSD and depressive symptoms have been found among children [Thabet et al., 2004] and adolescents [Elbedour et al., 2007] exposed to war and military violence. Some research is available on war and military violence increasing children's aggressive behavior [Kerestes, 2006; Qouta et al., 2008b]. A follow-up study among Bosnian children showed that severe war trauma in preschool age predicted aggression in adolescents, evidently due to difficulties in emotional regulation and impulse control [Kerestes, 2006].

Concentration on psychiatric disorders such as PTSD among children facing war trauma and military violence has been criticized from two somewhat opposite aspects, the one minimizing and the other maximizing the possible trauma impacts. The first critics note that the focusing solely on diagnoses, pathologies and distress ignores children's capacity to endure and reconstitute their lives with a positive meaning. Victimizing, individualizing and medicalization of exposed children distracts the focus from their sense of empowerment, resilience and natural potential for recovery. Subsequently, the real source of adversity, such as political injustice and human right abuse, is forgotten and individuals are considered responsible for their suffering [Summerfield, 2002]. The other critics consider a symptom-focused approach too narrow and emphasize the comprehensive developmental impacts of trauma, which can be both negative and positive. Informed analyses should rather delineate the underlying mechanisms through which trauma may find its way into children's cognitive and emotional development, coping strategies and social activity, e.g. world view, memory, emotion regulation and family and peer relations. Knowledge

about interactions between trauma and multilevel developmental processes is more crucial than the levels of PTSD in contributing to the tailoring and timing of effective preventive interventions [for review, Punamäki, 2006].

Traumatic Experiences and Cognitive, Emotional and Social Development

Researchers agree that exposure to trauma alone is seldom sufficient to explain mental health problems, but various protective and risk factors mediate and moderate the trauma impact [Yule, 2000, 2002]. Traumatic experiences have negative effects on the cognitive, emotional and social development of a child and through these changes children's mental health is at risk. On the other hand, some domains may remain intact and serve as protective factors for mental health. Risks vs. protective factors in conditions of armed conflict have traditionally been conceptualized as related to children themselves, family relations and societal support [Durakovic-Belko et al., 2003; Punamäki, 2006]. Concerning children themselves, cognitive characteristics have mostly been studied, whereas emotional processes such as regulation, expression and recognition of emotions are ignored. Research is still scarce about societal and ideological protective factors, although social cohesion and ideological commitment are routinely expected to protect children's mental health [Baker and Shalhoub-Kevorkian, 1999].

Theoretically, the biased and narrowed memory and attention processes and impaired problem-solving skills are considered the core issues in negative consequences of trauma [Feeny et al., 2004]. Trauma has been found to impact especially negatively verbal functioning and prefrontal executive skills in adults [Brewin and Andrews, 2000; Dickie et al., 2008]. Findings among Lebanes children revealed that also traumatized adolescents showed cognitive deficiencies in verbal tasks, but not in performance tasks in IQ tests [Saigh et al., 2006]. Some evidence is available of traumatized children having narrowed autobiographic memory expressed in less integrated and accurate personal episodic memories [Howe et al., 2004]. Dybdahl [2001a] found that 5- to 6-year-old war-traumatized Bosnian children showed lower level of cognitive competence than normative data, the majority falling under the lowest performance quartiles. Among Palestinian children exposure to severe losses, wounding and home destruction was associated with impaired cognitive capacity for attention and concentration [Qouta et al., 1995], which then predicted increased PTSD and depressiveness in adolescence [Punamäki et al., 2007]. Maltreated children in peaceful societies have been found to show biased and poor recollection, especially of narrative episodes [Howe et al., 2004], to have disturbances in attention, and generalized vigilance and hyperawareness of danger [Shields and Cicchetti, 1998].

It is important to note that the cognitive functions that trauma tends to impair are exactly those that are extremely important in protecting children's mental health. Narrative, episodic and verbal memory is essential in integrating traumatic experiences as a part of normal life history, but the impairment of the verbal memory interferes with successful integrative processing of trauma. Flexible, comprehensive and rich cognitive performance is known to enhance recovery from trauma, but severe trauma has been found to be associated with inflexible and narrowed attention and problem-solving strategies [Qouta et al., 2001]. Furthermore, planning, using multiple strategies, and inhibiting maladaptive and biased thoughts and emotions enhance recovery in life-endangering conditions, and again precisely these processes are disrupted by traumatic experiences, thus forming a vicious circle in child development [Qouta et al., 2008a].

The association between trauma and family relations is twofold. First, exposure to trauma affects family functioning, and both negative and positive impacts have been proposed. At the negative end, research has revealed conflicting and withdrawn relations in traumatized veteran families [Byrne and Riggs, 1996; Orcutt et al., 2003] due to overburdening and inability of the members to share their experiences. In Palestinian families exposed to severe military violence, children perceived their parents as highly punitive, rejecting and controlling [Punamäki et al., 1997]. However, the idea of positive trauma impact on social relations is based on the expectations that in traumatic conditions, people are drawn together in order to survive, which serves as a social buffer [Baker and Shalhoub-Kevorkian, 1999; Smith et al., 2002]. Empirical evidence is not, however, available to support the positive impacts of war trauma on social relations. Second, the quality of the family functioning moderates the child's vulnerability to trauma. Researchers agree that safety, caring and support within families are important protectors of children's mental health. Supportive and guiding parenting styles were found to predict low levels of PTSD and emotional distress among children despite severe military trauma [Thabet et al., 2007].

The impact of war and violence on peer and sibling relations has scarcely been studied. Paardekooper et al. [1999] found that Sudanese children exposed to the atrocities of civil war were less satisfied with their social network than children who were spared such exposure, and Howard and Hodes [2000] showed that refugee children in Europe enjoyed less support from friends than native and non-refugee immigrant children. A study among Palestinian children revealed that severe military trauma was associated with low quality of friendship, especially among girls and younger children, and with high level of sibling rivalry. Importantly, optimal friendships and siblinghips could protect children's mental health from negative trauma consequences [Peltonen, Qouta, El Sarraj, and Punamäki, submitted].

Classifications of Preventive Interventions

Traumatic events related to armed conflicts typically cause suffering for a large number of children, who, however, vary greatly in their vulnerability to mental health and developmental problems. Therefore, sophisticated analyses of aims, targets and philosophy of preventive interventions and treatments are of importance. The conceptual phases of preventive interventions can provide insights for theoretical approaches, criteria for target groups and effectiveness of outcomes in analyzing interventions among children in armed conflicts.

Classic prevention models identified three kinds of disease prevention: primary, secondary and tertiary [Commission of Chronic Illness, 1957]. Primary prevention seeks to decrease the number of new cases of a medical disorder, while secondary prevention aims at reducing the rate of established cases of the medical disorder in the population. The function of tertiary prevention is to alleviate suffering and reduce the amount of disability among people already diagnosed with medical disorder. The next generation of prevention models, proposed by Gordon [1983], involved a three-stage system of preventive interventions with medical disorders, conceptualized as universal, selective and indicated. These two classification systems for chronic illnesses served as the basis for the conceptualization of preventing mental health problems and other human suffering. A classification system of preventive interventions that is particularly designed for mental disorders was presented by the Institution of Medicine [IOM, 2001] in 1994.

Primary and universal preventions are targeted at all members within normal population who show no disorders but may be eligible for or prone to their onset. Applied to children and families in armed conflict, examples of the universal prevention are support and psychoeducation provided parents through public health care services. The information can include e.g. leaflets about normal and alarming trauma responses among children and adolescents. All school children in turn can participate in psychoeducation providing tools how to deal with painful and frightening trauma memories. They learn to recognize their own bodily and mental fear responses, regulate arousal and calm down.

Secondary and selective preventions focus on subgroups of populations whose risk of becoming ill is above average, i.e. in our case, children with high risks for PTSD, depression and developmental problems in war conditions. They can involve children exposed to especially harsh trauma such as witnessing family members being killed and home demolition. Orphans and children with parallel stressors such as family members' somatic or mental illness and financial losses also belong to the vulnerable subgroup. Their preventive interventions would include more trauma-focused cognitive-behavioral processing and a variety of recovery techniques and tools such as guided inner speech, narration and relaxation.

The third and indicated preventive interventions emerge when there are minimal but detectable signs or symptoms foreshadowing mental disorder or biological markers indicating predisposition to mental disorder. Concerning our trauma victims, intensive research is ongoing concerning early signs and biological risk markers such as changed stress hormones of HPA-axis [Yehuda, 2002], startle response [Shalev and Peri, 2000] and heart rate [Halligan et al., 2006]. There is evidence that among children, the initial levels of stress hormones may help to distinguish those who are at heightened risk of PTSD [Delahanty et al., 2005].

Klingman [2001] developed an extension of the IOM classification focusing specifically on the prevention of PTSD among children exposed to community violence. The model is tailored to school settings and includes various levels of intervention strategies such as anticipatory guidance with disaster planning, simulation techniques for symptom management and treatment for children with PTSD and prevention techniques for those at risk of relapses. Klingman's model is remarkable because it also includes routinely scheduled screenings in schools located in violent areas. The model aims at identifying children with both

generalized stress reactions and sub-threshold PTSD and to work intensively with children with full-blown PTSD.

The Workgroup for Mental Disorders Prevention Research [NIMH, 1998] suggested that the domain of prevention research should be expanded beyond "primary prevention." The preventions should also be focused on disorder relapse, recurrence and co-morbidity of symptoms. Preventive intervention trials could thus involve individuals with psychiatric diagnose in risk for relapse but without any current disorder symptoms and those with subclinical symptoms. When applying the NIMH model into children traumatized by war and military violence, the focus of care and interventions should be segmented involving, first, children already suffering from PTSD and other anxiety or depressive disorders, and, second, those with psychological and behavioral risk indications such as fragmented memories of traumatic events [van der Kolk, 1996] heightened psychophysiological arousal [Delahanty et al., 2005], peritraumatic symptoms and absence of social support [Ozer et al., 2004].

Finally, the "new generation" of preventive interventions emphasizes the specific and unique strengths and vulnerabilities of the target groups, and concentrates in enhancing protective underlying mechanisms and crucial healing elements. These interventions are typically based on manualized and empirically supported psychosocial treatments that are theoretically sound best practices. Interventions among children at risk are theory-based and tailored to enhance specific developmental achievements and family processes that are salient and at stake in developmental transitions [Brown and Liao, 1999; Durlak and Wells, 1997]. This is a fruitful approach when analyzing interventions among children traumatized by war and military violence. For instance, age-appropriate learning to regulate aggressive behavior is an important developmental task in toddlerhood, and exposure to violence may severely interfere with that development. At the peak of theoretical sophistications are evidence based and empirically validated best practices that help to maintain children's optimal development. Three premises are important concerning the evidence-based preventive interventions. First, they address the importance of theoretical foundations, treatment portability and goodness of fit between services and clients. Second, they necessitate sophisticated experimental design demonstrating the efficacy. And third, the superiority to any other treatment should be demonstrated by different investigating teams [Chambless et al., 1998].

Aims of the Study

The literature review analyses the effectiveness of psychosocial preventive interventions and treatments and their theoretical base, techniques and tools among children exposed to trauma caused by armed conflicts. The literature reviewed focuses on preventing psychopathology and promoting optimal development among children living in conditions of war, military violence, terrorism and living as refugees. The first aim is to evaluate the effectiveness of preventive interventions to improve children's mental health and enhance their emotional, cognitive and social development. The second task is to analyze the nature of the underlying mechanisms for success of preventive interventions and the theoretical premises of the choice of intervention techniques, procedures and tools.

METHOD

Eligible studies for the review reported interventions among children in conditions of war, military violence, terrorism and living as refugees published between 1980 and 2008. The keywords for the manual search for journal articles and other publications were: prevention, intervention, treatment, children, trauma, PTSD, mental health, child development, refugees, violence, military conflict, war and terrorism. To be included in the review, a study had to meet the following criteria: (a) the intervention or program should include systematic action for children with or without trauma symptoms for a limited time period, (b) primary foci are child and adolescent mental health, and psychological, social or behavioral development and functioning, (c) mean age of subjects less than 18, (d) participants are considered at risk for developing potentially serious mental health or developmental problems or currently have these problems, and (e) intervention description and possible results of effectiveness have been published in international scientific journals and book chapters.

To evaluate the effectiveness of preventive interventions, we applied meta-analysis and calculated and combined the effect sizes (ES) for the most commonly used outcome measure, namely PTSD. For experimental and quasi-experimental studies which include treatment and control groups, ES is defined as the difference between the mean scores of the treatment and control group mean scores following intervention, divided by the pooled harmonic standard deviation of the outcome scores of the two groups. We used the standardized mean

difference procedure described by Lipsey and Wilson [2001], which is commonly applied in meta-analyses. Data were analyzed for summary effects using Review Manager 4.2 software.

RESULTS

Intervention Features

According to the criteria and keywords 19 studies were identified that examined the effectiveness or described the content of psychosocial preventive interventions among children exposed to traumatic events caused by armed conflict. Ten studies were conducted among children exposed to war and military violence, six among refugee and traumatized immigrant children and three among children exposed to terrorist attacks. Three of the studies were descriptive in their nature (one conducted in conditions of war and military violence and two in terrorist attacks), while other 16 studies tested the effectiveness of preventive intervention. Majority of the studies on intervention and prevention effectiveness were published in this millennium.

Table I presents the details of the studies including participation, treatment type and intervention characteristics, theoretical basis and effectiveness findings. The majority of the studies among children in war and military violence were conducted during or after the wars in the former Yugoslavia, involving Croatian [Woodside et al., 1999] and Bosnian children [Barath, 2000; Dybdahl, 2001a,b; Layne et al., 2001, 2008]. Three studies were conducted in Africa [Bolton et al., 2007; Onyut et al., 2005; Schauer et al., 2004], two in the Middle East [Berger et al., 2007; Thabet et al., 2005] and one in Asia [Chase et al., 1999]. The refugee children participating in preventive interventions in their new home countries were from these main conflict areas. Two studies are available on the preventive interventions and treatments of victims of the 9/11 terrorist attack [Brown et al., 2006; Silva et al., 2003] and one of the victims on the Oklahoma City bombing [Call and Pfefferbaum, 1999].

The sample sizes in the studies reviewed ranged between a single case study [Vickers, 2005] to a community sample of 450 war-affected families [Barath, 2000]. The duration of the reported interventions was typically 2–6 months, involving 1–2 weekly sessions. The number of sessions varied between 4 and 20. Five of the studies reported 16 sessions [Bolton et al., 2007; Brown et al., 2006; Silva et al., 2003; Vickers, 2005; Woodside et al., 1999].

In most of the studies (14 of 19) children themselves were the only participants in preventions and interventions. In two interventions, parents were provided psychoeducation about normal and risk-indicating trauma response and encouraged to apply optimal ways of coping with children's problems and symptoms [Berger et al., 2007; Call and Pfefferbaum, 1999]. In the intervention program by O'Shea et al. [2000], parents participated in sessions where they shared experiences and information, how to enhance children's adjustment. In interventions by O'Shea et al. [2000] as well as Möhlen et al. [2005], parents could also participate in family therapy sessions together with their children. One of the interventions focused only on parents and aimed at improving their mental health and increasing their resources, empowerment and understanding of developmental consequences of war trauma, which was expected to be reflected in optimal child well-being and development [Dybdahl, 2001a,b].

Effectiveness of Interventions

The research aim of the 16 studies was to examine the effectiveness of interventions. Ten studies reported decrease in PTSD symptom or diagnostic scores as an outcome of intervention. However, only four of them [Berger et al., 2007; Ehntholt et al., 2005; Layne et al., 2008; Thabet et al., 2005] were eligible for the formal meta-analytic calculation of the overall effect size of PTSD decrease. The reasons for exclusion of seven studies were as follows: Woodside et al. [1999] offer no numeric data concerning PTSD. Schauer et al. [2004] and Vickers [2005] were case studies, the study by Onyut et al. [2005] had only four subjects in pos-intervention setting, and Layne et al. [2001] compared the effectiveness between full vs. partial treatment. Two studies [Barath, 2000; Möhlen et al., 2005] used a pre–post intervention setting without a control group. Out of four eligible studies, two had randomized and two nonrandomized control groups. The total number of participants in the four studies included in the meta-analysis was 198 in experimental group and 186 in control group.

Given the statistical heterogeneity between the four studies included, we used the Random effects model, which assumes that the true treatment effects in the individual studies may be different from each other. The results of the effect sizes (ES) are presented in Table II. ES estimates are interpreted by their positive or negative value. Negative ES values reflect the change in dependent variable

TABLE I. Characteristics of Preventive Interventions Among Children Exposed to Traumatic Events in the Context of War, Military Violence, Terrorism and Living as Refugees: Participants, Intervention Setting, Quality of Evidence, Theoretical Basis and Effectiveness

Author and intervention	Sample: Participants Symptom severity Site Mean age (SD)	Intervention: Frequency, Duration and Method	Intervention type and quality of evidence[a]	Aims and criteria of effectiveness	Techniques and tools	Theoretical basis[b]	Effectiveness: decreased symptoms and increased resources[c]
[Woodside et al., 1999] Health to Peace Initiatives	251 war-affected children (*n* for intervention and control groups not reported) Symptom severity not known Schools in Croatia 11.9 (0.6) years	During 4 months, weekly, 2 hr training sessions as a part of curriculum	Universal Non-randomized assignment to intervention and control groups Pre-, post-, and one year follow up assessments Manual (5)	Promoting trauma-healing and non-violent conflict resolution Reducing ethnic bias Informing on human rights	Psychoeducation of reactions and symptoms Exploring ethnic biases and prejudices: discussion of "creative conflict resolution" Trauma processing: recognizing traumatic experiences Communication skills	Trauma healing conceptualized as "health initiative" and non violence and ethnic bias reduction as "peace initiative" (3)	Decrease in PTSD Increase in self-esteem in girls Protective role of good classroom psychosocial climate More positive attitudes toward enemy Acceptance of non-violent resolution (1)
[Chase et al., 1999] Health-Peace Initiative	150 war-affected children Symptom severity not known Schools and orphanages in Sri Lanka Age not known	Weekly sessions for 6–9 month including play and creative arts; one-on one-sessions with personal storytelling and healing meditation rituals	Universal No research setting	Trauma healing at the child level and peace-building at the community level	Promoting sense of fearlessness, dignity and hope and re-inspire creativity via open communication and engagement in creative activities	Trauma healing conceptualized as "health initiative" and non violence and ethnic bias reduction as "peace initiative" (3)	None
[Dybdahl, 2001a,b] Psychosocial intervention	(a) 42/(b) 45 war-affected internally displaced mother-child dyads High vs. low maternal depression Community center and homes in Bosnia 5.5 (0.7) years	During 5 months, weekly, 2 hr sessions of group meetings & semistructured discussions with mothers, home visits	Universal Random assignment to intervention- and control groups Pre- and post-tests Manual (4)	Promoting emotional, social and intellectual development and well-being of young children	Psychoeducation for mothers, including recognition of trauma symptoms in children Promoting mother's understanding of her own and children's well-being Enhancement of self-confidence & ability to care children. Enhancement of communication	Contemporary developmental theories: sensitizing caregivers by creating a warm human environment (1)	Increase in children's cognitive performance Decrease in children's psychological problems Decrease in mothers trauma symptoms Increase in mothers life satisfaction Increase in mothers perceived social support (2)

TABLE I. Continued

Author and intervention	Sample: Participants Symptom severity Site Mean age (SD)	Intervention: Frequency, Duration and Method	Intervention type and quality of evidence[a]	Aims and criteria of effectiveness	Techniques and tools	Theoretical basis[b]	Effectiveness: decreased symptoms and increased resources[c]
[Schauer et al., 2004] Child-friendly version of Narrative Exposure Therapy KIDNET	1 war-affected Somali boy Diagnostic level of PTSD Refugee camp in Uganda 13 year old	During 3 week period, 4, 1–1.5 hr sessions of brief psycho-education and individual sessions of Narrative Exposure Therapy	Indicated Pre- and post-tests (6)	Reducing PTSD symptoms	Trauma processing: Constructing the narrative of the event and its consequences, re-experiencing emotions, reconstruction of traumatic memory and habituation to the emotional response of traumatic memory	Principles of cognitive behavioural exposure (3)	Decrease in PTSD symptoms to a degree below diagnostic level (3)
[Onyut et al., 2005] Child-friendly version of Narrative Exposure Therapy KIDNET	6 war-affected children Moderate to severe PTSD and four of the six clinically significant depression Refugee camp in Uganda 13–17 years	4–6, 1–2 hr sessions of brief psycho-education and individual sessions of Narrative Exposure Therapy	Indicated Pre- and post-tests, and 9-month follow-up without control group (6)	Reducing PTSD symptoms	Trauma processing: Constructing the narrative of the event and its consequences, re-experiencing emotions, reconstruction of traumatic memory and habituation to the emotional response of traumatic memory	Principles of cognitive behavioural exposure (3)	Decrease in PTSD symptoms. At 9-month follow-up four of the six patients no longer met the criteria of PTSD Decrease in depression symptoms. At the post-test or 9-month follow-up none met the criteria of depression (1)
[Thabet et al., 2005] Group Crisis Intervention	(a) 47/(b) 22/(c) 42 war affected Palestinian children Mild, moderate and severe PTSD Refugee camps in Gaza 11–12 years	(a) 7 weekly sessions of group crisis intervention, (b) four teacher education training sessions, (c) no intervention	Indicated Non-randomized assignment to intervention-, education- or no intervention groups Pre-and post-test (5)	Reducing PTSD and depressive symptoms	Trauma processing: Reframing trauma Processing thoughts & emotions Psychoeducation of symptoms & risks	Critical Incident Stress Management (CISM) (3)	No effect on PTSD or depression symptoms
[Berger et al., 2007] Overshadowing the Threat of Terrorism (OTT)	(a) 70/(b) 72 children with various levels of terrorism related distress 7,8% clinical PTSD	(a) 8, 90-minute sessions of Classroom based OTT and two psychoeducation	Universal Random assignment of classes to intervention	Helping symptomatic children Enhancing students'	Psychoeducation for children and parents Enhancement of coping skills, body- and emotional awareness	Cognitive behavioural components Techniques from art therapy, body oriented strategies	Decrease in PTSD, somatic complaints, generalized anxiety and separation anxiety (1)

	School in Israel 2nd–6th graders	sessions for parents (b) no intervention	and control groups. Pre- and post-tests. Manual (4)	resiliency to face ongoing threat	and support system Trauma processing: reframing experiences Future planning	and narrative approach (4)	
[Bolton et al., 2007] Interpersonal Psychotherapy vs. Creative Play	(a) 105/(b) 105/(c) 104 war-affected children High level of depression Refugee camps in Uganda 14–17 years	(a) 16, 1,5–2 hr, weekly Interpersonal psychotherapy sessions, (b) weekly, 1,5–2 hr sessions of Creative play, (c) no intervention	Indicated Random assignment to psycho-therapy-, creative play- or no intervention groups. Pre-and post-test Manuals (4)	Reducing depression and improving functioning (Psychotherapy)	(a) Identifying interpersonal problems, and assisting individual in building skills to manage these problems (b) Strengthening resilience by verbal and non verbal expression of thoughts and feelings through age appropriate creative activities + postactivity group discussions focusing on building skills	(a) Original model developed in USA for ambulatory depression and later adapted for use of adolescents depression (b) Format developed by War Child Holland (3)	Decrease in depression among girls, greater decrease in intervention group than two other groups No statistically different improvements in anxiety or conduct problems (1)
[Layne et al., 2001] School-based trauma- & grief-focused programme	55 war-affected adolescents Moderate to severe PTS-symptoms & grief or depression Schools in Bosnia 17.05 (1.17) years	Every two weeks, 20, 80–100 min. sessions of Trauma-/Grief-focused group psychotherapy (additional weekly individual meetings if needed)	Indicated Pre- and post-tests without control group, but including full vs. partial treatment Manual (6)	Reducing PTSD, depression and grief Facilitating positive psychological adjustment Promoting healthy developmental progression Psychoeducation of symptoms and risks	Stress reduction and relaxation Trauma processing: Reprocessing trauma experience, meaning making, framing and sequencing Grief processing Constructive problem-solving Thought and emotion regulation	Positive goals Ecologically & developmentally based formulations of post-traumatic adjustment (2)	Decrease in PTS, grief & depression symptoms Increase in psychosocial adaptation No significant effects of full vs. partial treatment (1)
[Layne et al., 2008] Classroom-based Psychoeducation and Skills Intervention and School-based trauma & grief-focused programme	(a) 66/(b) 61 war-affected adolescents Severe symptoms of PTSD, depression or traumatic grief and significant functional impairment Schools in Bosnia (a) 15.9 (1.11)/(b) 16.0 (1.13) years	(a) Classroom-based Psychoeducation and Skills Intervention throughout the school-year (b) Classroom-based Psychoeducation and Skills Intervention and School-based trauma & grief-focused	Indicated Random assignment to intervention- and control groups Pre- and post- and 4-month follow-up -assessments Manual (4)	Reducing PTSD, depression and grief Facilitating positive psychological adjustment Promoting healthy developmental progression Psychoeducation of symptoms and risks	Stress reduction and relaxation Trauma processing: Reprocessing trauma experience, meaning making, framing and sequencing Grief processing Constructive problem-solving Thought and emotion regulation	Positive goals Ecologically & developmentally based formulations of post-traumatic adjustment (2)	Decrease in PTSD and depression in post- and 4 month follow-up assessments in both groups (stronger improvement in intervention group) Decrease in maladaptive grief reactions in intervention group (1)

TABLE I. Continued

Author and intervention	Sample: Participants Symptom severity Site Mean age (SD)	Intervention: Frequency, Duration and Method	Intervention type and quality of evidence[a]	Aims and criteria of effectiveness	Techniques and tools	Theoretical basis[b]	Effectiveness: decreased symptoms and increased resources[c]
[Call and Pfefferbaum, 1999; Pfefferbaum et al., 1999; Pfefferbaum et al., 2003] Project Heartland, community mental health program		Crisis counselling and support Psychoeducation for teachers and parents Education for victims of terrorism	Universal No systematic evaluation of effectiveness	Intervening in the short to medium term with victims of Oklahoma City bombing showing social and mental health			None
[Silva et al., 2003] The Skills Training in Affect and Interpersonal Regulation with Narrative Story Telling program (STAIR/NST)		16 individual or group therapy sessions (STAIR/NST) based on Cognitive Behavioral therapy	Universal	Helping persons exposed to 9/11 terrorist attacks	Trauma processing: Making meaning of trauma history Labelling & mastery of emotions Evaluating the impact on sense of self and the world Self-esteem and efficacy building Sense of competence Coping resources Training emotion regulation and interpersonal skills	The Skills Training in affect and interpersonal regulation Narrative Story Telling (3)	None
[Brown et al., 2006] Two-step, school-based trauma intervention	63 children exposed to World Trade Center Attack Diagnostic level of PTSD ($n = 22$), no PTSD ($n = 40$) School in New York 10.3 (1.5) years	During 10 weeks, ten sessions of classroom intervention with skill-training Cognitive Behavioral Therapy. Six individual therapy sessions for those were still with PTSD	Selective AND Indicated (step-wise intervention) Classroom intervention was open trial with no group assignment Non-randomized assignment to Individual therapy and	Reducing PTSD, anxiety, depression and aggression	Classroom intervention: Psychoeducation Affect regulation Coping strategies Muscle relaxation Positive imagery Safety plan Individual treatment: Coping skills Trauma processing: re-experiencing and habituation of traumatic event Reflection, cognitive restructuring	Informed by research on childhood trauma and treatments of anxiety disorders (4)	Classroom intervention: Decrease in PTSD among children who met criteria for PTSD No reduction among those without PTSD Decrease in depression and anger Individual treatment: Decrease in PTSD, depression and anxiety Trend decrease in anger (1)

			control groups Pre- & post- tests Manual (6)		Relaxation Safety plan		
[Barath, 2000] Refugee health program	Total of 450 participants: refugees from Croatia, Bosnia and Herzegovina, also local residents, children and their parents and teachers Symptom severity not known 7–18 years In Sloveniax	7–12, 2 hr sessions of group-based psychosocial aid modules with creative activities workshops	Universal Research of only one of the modules (63 partici-pants, not all children) Pre-and post tests (6)	Facilitating Cultural and psychosocial adaptation Promoting psychosocial adaptation, ethnic tolerance and cross-cultural communication	Promoting children's rights, social competence and moral sensibilities Improving societal atmosphere and attitudes Enhancing intergenerational understanding and attachment in family Promoting children's emotional and social well-being and symbolic processes	Sample of paradigms and principles: Multiethnic community development Interpersonal social work 12-step approach to emotional and moral injuries Creative Problem Solving (1)	One of the modules: (12-Step self assessment scales) Decrease in PTSD by 38% Increase in mental health test scores by an average of 15% (13–18 year olds) (1)
[O'Shea et al., 2000] School-based mental health service	14 refugee children from different countries Psychological difficulties and psychiatric disorders School in London, United Kingdom 9.6 (1.15) years	Parent appointment with professional Screening of adversity & trauma Various treatments: family therapy and cognitive counselling	Selective Pre- and post-tests without control group (6)	Helping psychologically distresses refugee pupils	Cognitive work (case example) Social skills promoting (case example)	Literature review (4)	Decrease in psychological distress indicated by SDQ total scores (only 7 pupils in post-test) (2)
[Lustig et al., 2004] Individual Testimonial psychotherapy	3 Somalian adolescent refugees Symptom severity not known Clinical setting in Boston 17–18 years	3–9 sessions of Testimonial psychotherapy based on social and political aspects of trauma	Indicated Post reports from participants and Social services and satisfaction survey as post-test Manual (7)	Not explicitly mentioned	Improving cohesion in community. Relaxation training Trauma processing: cognitive restructuring, meaning making & distancing by narratives Identifying courage and intelligence that led to survival Enhancing a sense of agency & counteracting feelings of powerlessness and inferiority Exploring feelings of sadness, fear and loss	Constructivist approach: Improvement of cognitive processing of experiences in social context Integrating trauma by assimilating own schemas or accommodating trauma Ecological & transactional models of childhood trauma (1)	High levels of satisfaction with the intervention (3)

TABLE I. Continued

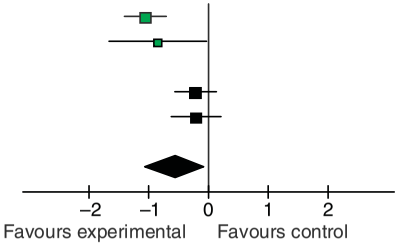
Author and intervention	Sample: Participants Symptom severity Site Mean age (SD)	Intervention: Frequency, Duration and Method	Intervention type and quality of evidence[a]	Aims and criteria of effectiveness	Techniques and tools	Theoretical basis[b]	Effectiveness: decreased symptoms and increased resources[c]
[Möhlen et al., 2005] Psychosocial treatment program	10 war-affected Kosovan refugee childreny None to moderate PTSD, clinical levels of PTSD, minor to moderate levels of depression and anxiet 13.3 (3.2) years Refugee center in Germany	During 12 weeks, various 2–3 hr sessions of information, diagnosing, trauma- and grief focusing therapy, group-, individual- and family sessions	Universal Pre-and post test assessments without control group (6)	Alleviating emotional distress and improving psychosocial functioning	Trauma processing: verbalization of traumatic experience Creative methods of guided imagery, group discussions Relaxation Psychoeducation for parents	Literature review (4)	Decrease in PTSD and symptoms of depression and anxiety Increase in children's psychosocial functioning (1)
[Vickers, 2005] Individual treatment	1 war-affected African refugee girl Severe PTSD and mild depression Child and adolescent mental health service in London, United Kingdom 14 year	weekly, 16 one-hour sessions of Cognitive Behavioral Therapy with specific cognitive component	Indicated A case-study (7)	Treating PTSD	Trauma processing: Cognitive restructuring Differences between thought and feeling Identifying automatic thoughts Enhancing positive self-talk Sleep hygiene Information to parents	Cognitive model of the persistence and treatment of PTSD, Expansion of Ehlers and Clark [2000] model Age-solid cognitions & personal meaning of events (1)	Decrease in PTSD (PDS score from 42 to 9) Psychosocial functioning improved: more friends, less socially isolated, less prone to angry outbursts, more trust and confidence on key-worker and sisters, improves sleep, no nightmares (3)
[Ehntholt et al., 2005] Teaching Recovery Techniques	(a) 15/(b) 11 war-affected refugee and asylum-seeking children from different countries 92% diagnostic level of PTSD and 20% diagnostic level of depression Two schools in London, United Kingdom Ages 12.47 (0.74)/13.46 (1.13) years	During six-weeks, weekly one-hour sessions of Cognitive Behavioral group therapy	Selective Non-randomized assignment to intervention- and control groups Pre- and post test and 2-month follow up Manual (5)	Treating PTSD	Psychoeducation Effective coping Relaxation Trauma processing: Multisensory control of intrusive trauma memories Emotion recognition & regulation Fear management Sleep hygiene Activity scheduling	Cognitive-behavioral, approach & symbolic processing of traumatic experiences (3)	Decrease in PTSD, behavioural difficulties and emotional symptoms Increase in anxiety and PTSD in control group Results not maintained at 2-month follow-up (data from only 8 children) No effect on depression (1)

[a]Quality of Evidence for Evaluating Preventive Interventions, grading based on Biglan et al. [2003]: Grade 1. Evidence from multiple well-designed, randomized, controlled trials or multiple well-designed, interrupted time-series experiments that are conducted by two or more independent research teams. And, in addition, evidence of effectiveness when the preventive intervention is implemented in its intended setting with adequate training of personnel and monitoring of implementation and outcomes. Grade 2. Evidence from multiple well-designed, randomized, controlled trials or multiple well-designed, interrupted time-series experiments that are conducted by two or more independent research teams. Grade 3. Evidence from multiple well-designed, randomized, controlled trials or multiple well-designed, interrupted time-series experiments that are conducted by a single research team. Grade 4. Evidence from at least one well-designed, randomized, controlled trial or an interrupted time-series design that is replicated across three cases. Grade 5. Evidence from comparisons between groups that are not effectively randomized to conditions. Grade 6. Evidence only from pre–post evaluation with no comparison group or repeated assessment on a single case for which an intervention is introduced at some point in the time series. Grade 7. Endorsement based on clinical experience by respected authorities, descriptions of programs and case reports.
[b]Theoretical basis of choosing intervention methods and tools, according to Kok et al. [2004]: 1. General theories approach involves considering of general theories that may be applicable to the problem under consideration by using theories that the one is already familiar with; 2. Concept approach indicated by linking the list of answers i.e. concepts of provisional list of answers that were identified from the literature on theoretical constructs and theories that seem to be useful; 3. Issue approach, referring to searching literature for theoretical perspectives/approach on the issue or problem; 4. Literature search, referring to searching literature and resulting provisional list of answers.
[c]Levels of statistical significances: 1, Statistically significant; 2, Tendencies, statistically nonsignificant; 3, The impact not measured statistically.

TABLE II. Standardized Mean Difference Effects Sizes and 95% Confidence Intervals for Intervention and Its Effect on PTSD

	Experiment			Control				Std.mean difference	Std.mean difference
Study or subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI	IV, Random, 95% CI
Berger et al., 2007	13.9	7.8	70	23.9	10.8	72	28.2%	−1.05 [−1.41, −0.70]	
Ehntholt et al., 2005	33.8	9.71	15	42.18	9.38	11	17.0%	−0.85 [−1.66, −0.03]	
Layne et al., 2008	24.52	13.61	66	27.35	12.31	61	28.3%	−0.22 [−0.57, 0.13]	
Thabet et al., 2005	28.3	13.4	47	31	12.6	42	26.6%	−0.21 [−0.62, 0.21]	
Total (95% CI)			198			186	100%	−0.56 [−1.04, −0.07]	

Heterogeneity $\tau^2 = 0.18$; $\chi^2 = 14.50$, df = 3 ($P = .002$); $I^2 = 79\%$
Test for overall effect: $Z = 0.26$ ($P = .02$)



(PTSD), which favors experimental group, whereas positive ES values reflect a change in the dependent variable, which favours control group. The average effect size for PTSD change was evaluated using Cohen's [1988] widely used criteria of .20 being the smallest effect size that has any significant practical or clinical meaning, with three specific categories or levels of power: small (.20 to .49), medium (.50 to .79) and large (.80 and higher).

Results in Table II demonstrate that interventions of Berger et al. [2007] (Cohen's $d = -1.05$) and Ehntholt et al. [2005] (Cohen's $d = -0.85$) showed a large power of positive changes in PTSD among experimental group compared to control group, whereas interventions of Layne et al. [2001] and Thabet et al. [2005] showed a small power. The confidence intervals for effect sizes of the two studies with small power included zero, indicating that the associated effectiveness cannot be warranted. Although the weighed mean effect size (Cohen's $d = -0.56$, $Z = 2.26$, $P = .02$) implies a significant result favouring experimental group, the strong contentual and statistical heterogeneity ($\chi^2 = 14.50$, $P < .01$) hinders us to reliably summarize the effects of the four studies. Taken together, we can observe that the conclusion of effectiveness was somehow different according to researcher-reported results and meta-analysis. There is evidence for arguing that preventive interventions decrease children's PTSD in conditions of armed conflict. The conclusions can, however, be undermined due to inappropriate research settings according to the meta-analytic criteria.

Table I further suggests that a number of interventions were effective in reducing other mental health problems among children in armed conflict. Results were positive for outcomes of depression [Bolton et al., 2007; Brown et al., 2006; Kataoka et al., 2003; Layne et al., 2001; Möhlen et al., 2005; Onyut et al., 2005], anxiety and behavioral problems [Berger et al., 2007; Ehnholt et al., 2005; Möhlen et al., 2005; O'Shea et al., 2000]. Bolton et al. [2007] for example showed that interpersonal group psychotherapy for war-exposed children was effective for depression symptoms. Depression scores among adolescent girls in group psychotherapy showed significant decrease compared to scores in control- and creative play-groups.

The choice of techniques and tools that were used across the interventions implicitly refer to a wide variety of cognitive, emotional and social processes explaining successful recovery from trauma, and thus mediating between the interaction and mental health outcomes. Very few, however, examined the effectiveness of the intervention to impact these processes, and none of them formally tested the mediation mechanisms. Results show that a family-focused intervention among Bosnian war-traumatized families was marginally effective in improving children's cognitive performance [Dybdahl, 2001a,b]. Another study evidenced intervention effectiveness in increasing girls' self-esteem and positive attitudes toward the enemy among war-traumatized Croatian children [Woodside et al., 1999]. Vickers [2005] reported that in her single case study the applied CBT intervention resulted in thorough positive changes in the participating boys' social development and his family's interactional quality. These results concur with the argument that in addition to reducing mental health problems, it is also important to enhance resources, resilience and positive attitudes among traumatized children [Barenbaum et al., 2004; Punamäki et al., 2007].

Quality of Effectiveness Evidence

To assess the quality of evidence for the effectiveness of the preventive intervention, we applied a 7-grade classification by Biglan et al. [2003] that depicts "the golden rules" of evaluating the validity of conclusions on therapy effectiveness. The criteria include issues such as the degrees of random assignment, use of a control group, sustainability of positive results and fidelity of implementations of the effective treatments, thus extending the meta-analytical requirements. The requirements for each quality grade are presented in the footnote of Table I. For instance, at best Grade 1 conclusions about effectiveness are based on evidence from multiple well-designed, randomized and controlled trials or multiple well-designed, interrupted time-series experiments conducted by two or more independent research teams. In addition, there must be adequate documentation that the preventive intervention has been implemented in its intended setting with adequate training of personnel and monitoring of implementation and outcomes.

The results of our review suggest that none of the studies reviewed could provide evidence for Grades 1, 2 or 3. Without replication of their studies Berger et al. [2007], Bolton et al. [2007], Dybdahl [2001a,b], and Layne et al. [2008] achieved the Grade 4, for which evidence is required from at least one well-designed randomized and controlled trial. Studies by Ehntholt et al. [2005], Thabet et al. [2005] and Woodside et al. [1999] provided evidence at Grade 5, indicating that they draw evidence from comparisons between groups that were not, however,

effectively randomized to treatment and non-treatment conditions.

Table I shows that the available evidence on preventive interventions among children in armed conflicts is typically based on Grade 6, indicating pre- and post-evaluations of changes in symptoms or other relevant outcomes in only one intervention group [Barath, 2000; Brown et al., 2006; Layne et al., 2001; Möhlen et al., 2005; Onyut et al., 2005; O'Shea et al., 2000; Ovaert et al., 2003]. The study by Lustig et al. [2004] based on clinical experience, and Vickers [2005] reported a case study, and their provided evidence of the treatment efficiency is at Grade 7.

Four out of 16 studies had follow-up in addition to the pre–post-intervention assessments. Children's symptoms were measured after one year [Woodside et al., 1999], nine months [Onyut et al., 2005], four months [Layne et al., 2008] and two months [Ehntholt et al., 2005] after the intervention.

Techniques, Tools and Underlying Mechanisms

There was a considerable variation in the techniques and tools applied in the psychosocial preventive interventions among children exposed to war, military violence, terrorism and refugees. Group therapies based on cognitive behavioral therapy (CBT) were the most common modes. Seven studies reported the effectiveness of standard CBT or trauma- and grief-focused CBT group therapies. Different forms of creative therapies such as storytelling, playing and fantasizing were applied to treat war-traumatized children in two studies [Barath, 2000; Chase et al., 1999]. Psychoeducative modules were common and they were typically applied as a part of the CBT or creative intervention methods. For instance, the interventions studied by Call and Pfefferbaum [1999], Thabet et al. [2005], and Vickers [2005] included information about children's common trauma responses, psychiatric symptoms and age-salient ways of understanding trauma. Narrative approach was either applied as the main technique of intervention [Onyut et al., 2005] or combined with other methods [Chase et al., 1999; Lustig et al., 2004]. The narrative techniques typically involved ways of restructuring fragmented memories into coherent trauma stories and multisensory integrative training methods.

All the interventions were based on knowledge of protective factors and cognitive-emotional and behavioral mechanisms that are found to contribute to children's symptom formulation in traumatic conditions. First, majority of the interventions (16 out of 19) focused either wholly or partly on promoting children's cognitive skills and effective trauma processing. The techniques included correcting of biased interpretations and enhancing constructive reasoning and problem solving. Further, cognitive-emotional exercises involved new ways of making sense of trauma, adequate framing of traumatic memories and causal attributions, empowering coping skills and integrating of fragmented and intrusive thoughts and feelings into a more coherent experience.

Second, many of the interventions (12 out of 19) focused either wholly or partly on negative emotions such as grief, anger, guilt and fear. Various methods were applied to enhance adaptive recognition, expression, regulation and re-processing of painful, shameful and unrecognized feelings. Seven interventions involved behavioral aspects in alleviating negative trauma impacts. For instance, children were familiarized with relaxation techniques and good sleep habits and primed for their daily functioning by mapping fear-evoking events and building safe havens or setting and attaining positive goals [Layne et al., 2001].

Third, less than half (7 out of 19) interventions focused on improvement of social relations in terms of promoting social support and problem solving as well as open communication. This was done, for example, by re-enacting conflicting social situations with introducing new aspects and clarifying both positive and negative consequence.

Fourth, 4 out of 19 interventions aimed at encouraging rich, structurally coherent and healing symbolic processes by using, for instance, guided imagery, play and dream work. And finally, 5 out of 19 interventions applied techniques that aimed at positively affecting the societal level of protectors, for example, by promoting a sense of justice and community cohesion and providing information on children's trauma reactions for teachers and other adults.

Explicit Nature of Theoretical Basis

To assess the theoretical basis of interventions, we applied a classification by Kok et al. [2004] that depicts how successfully the intervention methods and tools are linked in theoretical background.

The use of general developmental theories as a source of intervention techniques and tools was explicitly expressed in four of the reviewed studies [Barath, 2000; Dybdahl, 2001a; Lustig et al., 2004;

Vickers, 2005]. The intervention by Dybdahl [2001b] focused on systematically encouraging and teaching parents to apply new and healing interactive skills with their traumatized children. The step-by-step guidance and intensive emotional support helped the mothers to create a warm family environment and was based on determinants of healthy child development. Barath [2000] used the principles of multiethnic community development and the interpersonal social work paradigm as theoretical criteria for choosing various intervention techniques, such as promoting children's rights, social competence and moral sensibilities. Vickers's [2005] single case study on PTSD treatment was well-designed and insightfully conducted, and provides an example of clear theoretical articulation of underlying theory, applied tools and methods. She expanded the cognitive-behavioral model [Ehlers and Clark, 2000] by emphasizing age- and experience-salient cognitions and based the therapy on the trauma survivor's (8-year-old refugee boy) personal meanings and beliefs. Lustig et al. [2004] employed the constructivist approach and ecological and transactional models of childhood trauma [Cicchetti and Lynch, 1993]. The constructivist approach to improve children's cognitive processing of trauma included techniques focused on integrating painful memories by assimilating victims' own schemas to fit into the new shattering experience or/and accommodating traumatic memories by giving them new meanings and emotional color. Application of ecological and transactional model indicates that the different spheres of youngster's world and the interaction between them were acknowledged and the testimonial narratives as a product of the intervention can exert effects at the community level.

Layne et al. [2001] based their interventions on the developmental psychopathology framework applied to trauma victims and their posttraumatic adjustment by Pynoos et al. [1995]. It outlines various therapeutic foci such as trauma reminders, specific postwar adversities and developmental progression. The participants were Bosnian children and their specific war and refugee experiences and their meaning formed the context of psychological processing. Children were guided and encouraged to work through the reminders of their traumatic experiences and losses by mapping the frightening reminding cues in their everyday lives and training their skills to recognize their own reactions and helping them to attenuate arousals.

Most interventions employed manualized modules developed in the trauma field. For instance, Ehntholt et al. [2005] used Teaching Recovery Techniques and the intervention by Thabet et al. [2005] was broadly based on Critical Incident Stress Management [CISM; Everly and Mitchell, 1999] and adjusted to the trauma caused by military violence. Silva et al. [2003] based the development of their intervention tools on the Skills Training in Affect and Interpersonal Regulation and Narrative Story Telling (STAIR/NST). Cognitive intervention techniques were applied by Onyut et al. [2005], whose focus was on cognitive behavioural exposure. Two interventions [Chase et al., 1999; Woodside et al., 1999] were based on a paradigm called "Health to Peace Initiatives." According to MacQueen et al. [1997] it implies initiatives to improve children's health and simultaneously enhance group interactions and affiliation, processes of understanding, reconciliation and conflict resolution. Bolton et al. [2007] in turn introduced African refugee children to an interpersonal group psychotherapy that had been developed and applied to depressive adults and adolescents in the USA.

It is noteworthy that there is a general lack of comprehensive theory and framework for the rationale for which certain tools such as drawing and other group activities were chosen. Yet, there is an impression that the majority of intervention techniques among traumatized children are based on CBT and its derivatives, which are considered powerful enough to entitle the theoretical basis as such. Therefore, no further elaboration of underlying or developmental mechanism in trauma recovery is available.

DISCUSSION

Interventions among children traumatized in conditions of armed conflict aim at preventing psychopathology and promoting healthy development, as well as supporting shattered families and communities. In this review we aimed at ascertaining how these ambitions were achieved.

We could identify 16 eligible and three descriptive studies on intervention effectiveness among children experiencing war, military violence, terrorism and living as refugees. The numbers are relatively small considering the large number of children who are affected by armed conflict. The World Health Organization [WHO, 2007] estimated that almost a half (48%) of Iraqi children living in Baghdad has experienced suicide bombing, explosion, shelling and loss of family members. A retrospective study by Schaal and Elbert [2006] in Rwanda showed that 84% of children had been exposed to attacks or

looting, and almost all to scenes of death and mutilation during the genocide in which about a million people were killed in three months.

The number of effectiveness studies is also small with respect to the accumulation of psychosocial interventions, empowerment and relief programmes provided to the communities affected by war and military violence as well as to child refugees. The UN (UNICEF and UNESCO) and other international organizations (e.g. Save the Children, Red Cross and Red Crescent, Care International) provide well-informed preventive interventions to children in major military conflicts and disasters. In addition, local and international NGOs (nongovernmental organizations) dedicate their human and professional concern to protecting, helping and treating traumatized children. Reports are available on their contents and philosophies, but research is lacking about their effectiveness, efficacy and possible underlying mechanism for success or failure. Carrying out prevention programs and sophisticated research in war-torn communities is not, however, an easy task. Dissemination of information, lack of trained mental health workers, ongoing insecurity and lack of room and equipments for interventions are real challenges in war-affected areas.

As a conclusion of the overall effectiveness of reviewed studies we argue that there are promising, although scarce, results of healing and alleviating PTSD, depression, anxiety and pathological grief as well as enhancing cognitive, emotional and social resource of exposed children. However, only a quarter (4 out of 16) of eligible studies fulfilled the criteria for meta-analysis, indicating effectiveness in its strictest sense. The meta-analysis showed that interventions which were CBT-based and included resilience enhancing together with symptom-based techniques and systematically also applied bodily rehearsals came up as the most effective interventions in alleviating PTSD. Concerning the other effectiveness outcome criteria (e.g. depression and anxiety), meta-analytic procedure was not possible. However, the similar elements were present in effective interventions. We have to be aware that when using the strictest criteria of effectiveness, the conclusion is that there is not enough evidence for arguing that available techniques and programs are powerful enough to prevent and treat the mental health problems among children in extremely traumatizing conditions.

Generally taken, the evidence in the field of childhood trauma interventions is still scarce. The National Child Traumatic Stress Network [2005], for example, emphasizes the relative importance of "practice-based evidence" for the absence of evidence-based interventions for refugee children. There are, however, some guidelines on how to treat traumatized children exposed to abuse [Cohen et al., 2006], natural disasters and terrorism [LaGreca, 2008] and military violence [Barenbaum et al., 2004]. They recommend as the first-line approach to treat the active ingredients of trauma-focused CBT (TF-CBT) for decreasing PTSD, anxiety and depressive symptoms in children and adolescents. They involve in vivo re-experience in safe human interaction, multisensory emotion regulation and experimental reconstruction of biased cognitions, beliefs and emotions as well as the adaptation of one's own behaviour into challenging circumstances.

The interventions among war-traumatized children followed the recommended lines, as the group-based CBT interventions and therapies were the most commonly applied modes. Seven out of 16 eligible studies reported the effectiveness of standard CBT or trauma- and grief-focused CBT group therapies. Typically, however, the CBT principles and techniques were supplemented by other developmentally and contextually salient elements such as creative techniques, family-focused psychoeducative tools and attitude change toward war, peace and the enemy. One of the future challenges will be to filter out the relative impact of different components of CBT, find out whether same results would be achieved with only the most effective of these components and tailor developmentally informed modifications of these techniques.

Half of the studies reviewed based on research settings involving pre- and post assessments only in the intervention group, and was missing the control group. These studies cannot tell whether the symptoms can also change for the better without the intervention and whether the improvements achieved are sustainable. The choice of control group for preventive intervention in armed conflicts is not simple. Children often experience both Type I trauma (single life threatening events) and Type II trauma (long standing and repeated exposure to extreme events) [Terr, 1991] possible resulting in complex PTSD steaming from prolonged traumatization [Herman, 1992]. Consequently, the passage of time since main traumatic exposures may not be equal for intervention and control groups. Further, in the midst of armed conflict in addition to studied intervention also other forms of help and supports are often available. The usage of those resources among experimental and control groups should be carefully mapped out. In reviewed studies the

variation of the choice of control-group selection varied substantially. In some interventions there were purely convenience and availability-based, not randomly assigned, control groups [e.g. Ehntholt et al., 2005]. In other program the whole classes were used and randomly assigned in experimental and control groups [Berger et al., 2007], and in some interventions children were carefully tested and interviewed and after that they were randomly assigned to intervention and control groups [Layne et al., 2008].

The long-term follow-up studies are practically missing in interventions among children exposed to armed conflict. Only 4 out of 16 studies assessed children in three time points. These four present promising results of long-term effects of improving sustainability of psychosocial interventions. However, in order to obtain accurate recommendations or guidelines for practitioners, we still need more information of how children adjust to their safe or still traumatizing environments with or without intervention as they grow up.

Most contemporary wars and armed conflicts occur in poor countries with no well-developed mental health systems [de Jong and Komproe, 2002]. However, our review showed that most published effectiveness studies on psychosocial interventions were from former Yugoslavian countries, while only single studies are available from areas of continuous armed conflicts. Critics note that applying universal or western models of CBT or interpersonal interventions among war-traumatized children is neglecting the alternative culturally salient, religiously appreciated and traditional ways of healing mental distress. The treatments locate the pathology inside the victims who are expected to be cured as if recovering from an illness, while alternative views conceptualize the suffering as a result of collective political injustice that should be erased [Summerfield, 2002]. There is concern that individual-focused CBT methods are not applicable to diverse cultural and social settings that appreciate spiritual and communal bereavement and healing practices [Hays and Iwamasa, 2006]. Sophisticated theoretical analyses are required to clarify the extent to which recovery from trauma is culturally unique and to what extent sharing emotional experiences is a universal process. Also dismantling analyses of the power of traditional healing elements such as meditation or magic and CBT and other treatments in decreasing suffering of traumatized children would be welcome.

It was delightful to see that in addition to extensive knowledge of PTSD, the other mental health outcomes concurrently have an established position in theoretical as well as intervention literature. Among reviewed studies at least depression, pathological grief, anxiety and behavioral problems were at the scope of intervention. The future development of the intervention research in this field offers possibilities to assess how much these symptoms overlap and whether there are unique or universal techniques that should administer in order to prevent or treat each of the symptom categories.

Multidisciplinary developmental science is seeking answers to questions of timing of prevention, salience of developmental tasks and intervention-induced cognitive, socio-emotional, familial and physiological underlying mechanisms. There is no clear consensus about when it is best to intervene in children's lives [Weisz, 1997], and therefore, general statements such as "the earlier the better" are often repeated. Yet, some risk factors are strong predictors of dysfunction at specific periods of development, and this dynamic nature of development indicates that interventions that are efficacious for children at one stage may not be so at another stage [Waddell and Godderis, 2005]. For instance, vulnerability of young children is often explained by their dependence on a caregiver as they realize that traumatized parents are not able to protect them or provide safe bases to express distress or curiosity [Scheeringa and Zeanah, 1995]. There are arguments that preventive and early interventions are most effective when timed at the sensitive periods in the development of the central nervous system [Fonagy, 1998]. We could add that sensitive periods of emotional, social and cognitive developments are as important for timing the interventions. Further, prevention may be most effective during developmental transition periods, because mental processes are then intensively reorganizing, more porous and flexible, and are therefore, more receptive to compensating experiences and new challenges [Punamäki, 2006].

Prevention scientists agree upon the importance of understanding the processes behind psychopathology and ways to support healthy development [Barenbaum et al., 2004; Ehntholt and Yule, 2006; Lloyd et al., 2005]. Further, there is an urge to understand causal mechanisms and pathways between interventions in childhood and successful long-term development and mental health outcomes, and to specify program features associated with these crucial impacts. Related challenge is to genuinely appreciate children's own activity and advocacy. Enhancing active child involvement, parental participation and integrated multidisciplinary service models are emphasized, but our results

show that a majority of preventive interventions still focus solely on children, and on single domain.

The intervention by Layne et al. [2001] provides an example of a focus on developmental issues, the meaning of timing and age appropriate content tailoring in complex trauma in war conditions. The aim of their group psychotherapy sessions was to alleviate the adverse developmental impacts of war experiences by identifying missed developmental opportunities, replacing maladaptive beliefs and functioning in age-salient ways, as well as promoting prosocial behavior.

Based on the reviewed research, we suggest that the practice of psychosocial interventions for children in war zones can be forwarded by tailoring interventions according to the findings of contemporary prevention science and developmental research. The interventions that are CBT-based, combine symptom- and resilience-based techniques and take advantage of children's social network can be recommended. The first challenge is to match the mental health services to the needs of traumatized children and families, and tailor age- and context-specific services. Too often a number of international NGO's all have their own psychosocial help, sometimes consisting of single modules such as creative summer camp programmes and lasting for short periods of time. Psychosocial interventions and psychological first aid for traumatized children, also in war time, should thus be embedded as programmes in primary health and child care and as tools for school health personnel.

Limitations of the Review

Important areas of childhood traumatic stress were excluded from this review: extreme poverty, sexual and physical abuse and natural and technical disasters. Actions aiming to alleviate the suffering and malevolent consequences of poverty in child development, however, are informative when planning preventive interventions with children living amid chronic war trauma and military violence. Programmes focusing on children in poverty and other societal adversities are typically large-scale community-based interventions. In contrast to the interventions analyzed in this review, they are targeted at wide, often undefined populations and are not limited to a certain period of time, for example, Head Start [Knitzer, 2000; Yoshikawa and Knitzer, 1997], Homevisiting Program [Olds et al., 2004] and the Perry Pre-School Program [Schweinhart et al., 2005]. Comprehensive reviews and treatment guidance are available for children exposed to sexual and physical abuse [Cohen et al., 2000] and for children in natural disasters [LaGreca, 2008].

Our review is descriptive in nature, and was able to employ a meta-analytical method on only a small number of studies. The review can be considered a pilot systematic study on preventive interventions among children traumatized in armed conflicts.

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Military trauma and social development: The moderating and mediating roles of peer and sibling relations in mental health

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Abstract

We first examined how war-related traumatic events impact on peer and sibling relations, and how the quality of these relations in turn are associated with children's mental health, indicating a mediation model. Second, we tested the moderating (protective) effects of good peer and sibling relations in attenuating the link between trauma and mental health. The participants were 227 Palestinian boys and girls aged 10–14 years living in the Gaza Strip. They reported\ their exposure to military trauma, evaluated the qualities of peer relationships (loneliness and friendship) and siblingship (warmth, intimacy, conflict and rivalry), and reported symptoms of PTSD, CDI depression and SDQ psychological distress. The results show that exposure to military trauma was associated with intense rivalry in sibling relations and with low friendship quality especially among girls and younger children. The association between military trauma and symptoms was mediated by poor friendship and rivaling sibling relations. Only sibling relations but not peer relations had a moderating effect, as military trauma was not associated with severe symptoms among children who enjoyed considerable intimacy and warmth and lacked rivalry in their siblingships. We discuss theoretical and practical implications of the roles of peer and sibling relations in helping children in traumatic war conditions.

Keywords

mediation, moderation, Palestinians, peer relations, sibling relations, trauma

Trauma as a life-threatening event affects children's mental health and development extensively. Research has largely focused on psychological symptoms such as posttraumatic stress disorder (PTSD), while the impact of trauma on social relations and other developmental aspects, as important as they are, is ignored. Optimal family and peer relations are crucial for children's mental health and development in general, and, we may suggest, especially in war conditions where children's sense of security is under threat. In this article we examine how experiences of military violence such as loss of close persons and witnessing killing are associated with children's social development, indicated by the quality of peer- and sibling relationships. We test a mediation model of trauma being associated with psychological symptoms via deteriorated social relations, and a moderating model of good social relations being able to protect children's mental health from negative trauma impacts.

Military violence and children's mental health

War and military violence easily correspond to the criterion of trauma as they expose children to dangers and injuries, and threaten their own and their beloved ones' physical and psychological integrity (Stallard, 2006). If diagnosed with posttraumatic stress disorder (PTSD), children have reacted to trauma with intense fear and helplessness and suffer from symptoms characterized by re-experiencing the horrors in dreams and flashbacks, avoidance of trauma reminders and numbing of feelings, and finally, constant arousal and vigilance against threats and dangers. The prevalence of PTSD has been found to vary between 35–75% in war-zones in Africa (Morgos, Worden, & Gupta, 2007), Asia (Catani, Jacob, Schauer, Kohila, & Neuner, 2008) and Middle East (Abdeen, Qasrawi, & Nabil, 2008; Thabet, Ibraheem, Shivram, Winter, & Vostanis, 2009).

In addition to PTSD, dysfunctional mood regulation, depression and other psychological problems are common among children exposed to war trauma. They suffer generalized anxiety, intensive fears and phobia, somatic complaints and sleeping difficulties (Montgomery & Foldspang, 2005; Pine, Costello, & Masten, 2005; Yule, 2000). War trauma is further associated with heightened levels of concentration, reading and comprehension problems, often resulting in poor school achievement (Saigh, Yasik, Oberfield, Halamandaris, & Bremner, 2006).

The research on PTSD is sometimes misunderstood to indicate that war atrocities and military threats are automatically associated with mental health problems. Although extreme dangers result in distress in most children, clinically significant problems in war are

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not universal (Pupavac, 2001). It is therefore important to learn about the processes through which trauma potentially impacts the mental health and makes children more vulnerable (mediating models) and about the factors that can protect their mental health in traumatic conditions (moderating models).

Traumatic stress and peer and sibling relations

Living in war zones has specific impacts on peer relations, and both negative and positive impacts have been suggested. In a representative sample of war-exposed Bosnian adolescents more than a third (38%) had had a close friend killed (Layne et al., 2001). Witnessing the injury or death of a close friend and peer evokes severe stress (Pynoos, Steinberg, & Goenjian, 1996) and feelings of insecurity, which can complicate age appropriate social development. Children and adolescents may also constantly be afraid that something bad is happening to their parents and siblings, and this preoccupation with family safety can disturb their maintaining of peer and friendship relations. Witnessing scenes of violence and atrocities can result in intrusive memories that interfere with intimate sharing and trust among peers. On the positive side, it has been suggested that in exposure to war trauma people are pulled together to survive and show altruism and willingness to share. Severe trauma is expected to lead to positive peer relationships which create feelings of safety and togetherness (Baker & Shalhoub-Kevorkian, 1999; Smith, Perrin, Yule, Hacam, & Stuvland, 2002).

Yet, all available studies suggest negative impacts of war-related traumatic events on children's perceived support and quality of peer relations. Paardekooper and co-workers (1999) studied Sudanese children exposed to civil war atrocities and found that traumatized children were less satisfied with their social networks than spared children. They felt that the received support from their family and friends was insufficient and did not meet their needs. Similarly, Howard and Hodes (2000) found that refugee children from war zones settling in England enjoyed less support from friends compared to children born in England and non-refugee immigrant children. Finally, a study in post-war Croatia found an actual deterioration in peer relations expressed in high levels of out-group biases, negative attitudes and discriminative behaviors towards peers from the other ethnic groups (Ajdukovic & Biruski, 2008)

There is some evidence of congruency between peer and sibling relations, as children learn social interaction and behavior first in sibling relationships and then subsequently apply them in peer relations (Stauffacher & DeHart, 2006). We could not find studies on the impact of war-related trauma on sibling relations. However, a qualitative study by Leavitt, Gardner, Gallagher and Schamess (1998) reported both negative and positive sibling relations in traumatized children in a clinical context. The negative patterns involved distant and almost meaningless relations and tendencies to re-enact the difficulties faced in parent relations on siblings. The more positive patterns involved tightly bonded sibling relations serving as a substitute for problematic parent relations and siblings protecting each other against negative trauma impacts. In a normative sample, Dunn, Slomkowski and Beardsall (1994) in turn found that stressful life events improve sibling relations. Children exposed to negative events such as parental divorce or unemployment reported greater intimacy and less rivalry between siblings.

Social relations and mental health

Traumatic and threatening experiences often crystallize the need for protective and supportive social relations that can enhance effective coping, emotion venting and construction of new meaning of life. However, we could not locate earlier studies on the mental health function of peer and sibling relations among traumatized children in war conditions. There is general evidence of the beneficial role of peer acceptance, the ability to make and maintain friendships, and participation in social networks in contributing to children's optimal development and well-being (Bliese & Halverson, 1998; Gifford-Smith & Brownell, 2003). Longitudinal findings confirm that positive peer relations promote good social-behavioral adjustment (Brendgen, Vitaro, Bukowski, Doyle, & Markiewicz, 2001), sense of emotional safety (Seginer, 1998) and high self-esteem (Sherman, Lansford, & Volling, 2006) across life span.

Good peer relations have been found also to protect psychological adjustment among bereaved children (Ringler & Hayden, 2000) and those exposed to community violence (Hill, Levermore, Twaite, & Jones, 1996). Similarly, support from friends also contributes to good psychosocial adjustment during parental divorce (Greeff & van der Merwe, 2004) and in conflicting family environments (Caya & Liem, 1998) by guaranteeing urgently needed self-esteem, consolation and feeling of competence.

There is increasing evidence on the developmental and mental health functions of sibling relations. Siblingship provides an opportunity for learning intimacy, sharing and trust on the one hand, and for argumentation, fighting and conflict resolution on the other. Research confirms that children with close sibling interactions show more emotional compassion and empathetic perspective-taking than those with distant interactions (Joann Wu Shortt & Gottman, 1997). Warmth and intimacy in siblingship were found to be associated with emotional understanding and self-disclosure in middle childhood (Howe, Aquan-Assee, Bukowski, Lehoux, & Rinaldi, 2001) and to serve as a source of emotional support in early adolescence (Goetting, 1986). On the contrary, negative sibling relations are found to be associated with adjustment problems (Brody, 1998; Deater-Deckard, Dunn, & Lussier, 2002), anxiety (Fox, Barrett, & Shortt, 2002; Stocker, Burwell, & Briggs, 2002) and depression (Kaslow & Deering, 1994; Kim & Cicchetti, 2003; Stocker et al., 2002) both in childhood and adolescence. A longitudinal study showed that conflictual and rejecting sibling relations in childhood predicted psychiatric disorders in adulthood (Waldinger, Vaillant, & Orav, 2007).

Some research is available on the protective effects of affective siblingship in providing a sense of security, assurance and comfort in the face of hardships and stress (Branje, van Lieshout, van Aken, & Haselager, 2004; Gass, Jenkins, & Dunn, 2007). Gass et al. (2007) showed that stressful life events such as accidents, separation and death were not associated with internalizing symptoms among children who had affectionate relationships with their siblings. It is noteworthy that the protective effect was independent of the quality of the mother-child relationship.

Research questions

The aims of the study are, first, to examine how children's personal exposure to military trauma is associated with peer relations (loneliness and friendship quality) and sibling relations (warmth, conflict, rivalry and intimacy), and whether the associations are

gender and age specific. Second, we test whether peer and sibling relations mediate the association between military trauma and the symptoms of PTSD, depression and psychological distress. Third, we examine the moderating role of good peer and sibling relations in protecting child mental health against negative trauma impacts. We hypothesize that high exposure to military trauma is not associated with high levels of psychological symptoms (PTSD, depression and psychological distress) if children enjoy good peer relations (friendship quality and low loneliness) and/or good sibling relations (high warmth and intimacy, and low conflict and rivalry).

Method

Participants and procedure

The participants were 227 Palestinian school children in the Gaza Strip, of whom 36 % were girls and 64% boys. Their ages ranged between 10 and 14 years ($M = 11.37 \pm 1.10$). The majority of the children (60.9%) lived in urban areas, 20.9% in refugee camps, 9.3% in a village, and 8.9% in resettled areas.

Four school classes (2 of girls and 2 of boys) in two schools in Northern Gaza were recruited to participate in the study in 2006. An information meeting was held at each school and separately in each participating class. The purpose of the study was explained and the children were asked to bring to their parents an information sheet. However, only verbal consent was acquired from parents. All pupils in the classes completed the questionnaires during school hours in two consecutive weeks. Two psychology researchers gave the instructions to the pupils and provided advice on request. The assessment session lasted about one hour but those who needed more time were allowed to continue. The study was conducted by the Gaza Community Mental Health Program (GCMHP) as a part of psychosocial interventions among traumatized children. The research protocol was approved by the Ethical Committee of the GCMHP and permissions were obtained from the school headmasters.

Measures

Military trauma was measured by a 25-item list capturing typical violent and traumatic events during the Al-Aqsa Intifada (Qouta, Punamäki, & El Sarraj, 2005). Twelve events refer to own losses and experiences of military violence (e.g., shelling of home, being detained, wounded and beaten, losing a family member) and 13 events to witnessing killing, injury, home demolition and destruction. The children reported whether they had been exposed to the event (1 = *yes*; 0 = *no*) during the last year. A linear sum variable was constructed by counting the "yes" answers.

Peer relations were measured by 15 items of the Children's Loneliness (Asher, Hymel, & Renshaw, 1984) and the friendship Qualities (Bukowski, 2004) questionnaires. The participants evaluated on a 5-point scale how well the descriptions fitted their experiences with peers and schoolmates ranging from 1 = *not at* all to 5 = *very well*. Two averaged sum variables were calculated. Loneliness in peer relations included seven items (e.g., "Other students don't like to be with me"; $\alpha = .72$) and friendship quality eight items (e.g., "I have friends with whom I can share my secrets"; $\alpha = .79$).

Sibling relations were measured by the Dunn Sibling Relation Scale involving 22 items covering positive and negative aspects of relations (Dunn 1994). The participants evaluated separately how well the descriptions matched to their relations with one of their older and one of their younger siblings (11 items per sibling) on a 5-point scale ranging from 1 = *not at all* to 5 = *very well*. Four averaged sum variables were calculated. The items describing relations with older and younger siblings were combined. If children reported relations with only one sibling ($n = 94$), that averaged sum was applied. Siblingship warmth (e.g., "We usually laugh and joke together"), intimacy (e.g., "I usually tell him/her about my secrets"), and conflict (e.g., "He/she annoys and teases me") scales each consisted of six items. The siblingship rivalry scale had four items (e.g., "I feel jealous of him/her when he/she takes all my mother's attention"). The scales had satisfactory internal consistencies: Siblingship warmth $\alpha = .79$, conflict $\alpha = .81$, rivalry $\alpha = .74$ and intimacy $\alpha = .66$ *Post traumatic Stress Disorder* (PTSD) symptoms were measured by the Child Post traumatic Symptoms (CPTS-R) by Nader, Pynoos, Fairbanks, al-Ajeer and al-Asfour (1993). It is a 20-item scale which covers the constructs of intrusion (9 items), avoidance (7 items), and arousal (7 items) symptoms. The participants indicated on a 5-point scale how often they experienced each symptom during the last two weeks ranging from 0 = *never* to 4 = *most of the time*. The CPTS-R has been found to be reliable and valid among Palestinian children (Punamäki, Qouta, & El-Sarraj, 2001; Qouta et al., 2005). In this study the total sum scale was used and $\alpha = .80$.

Depressive symptoms were measured by the Child Depression Inventory (CDI) by Kovacs (1981). It is a 27-item self-report instrument to assess the cognitive, affective and behavioral dimensions of depression in children. The items consist of three sentences of which participants were instructed to select the one that best describes how they have been feeling in the past two weeks. Each sentence is given a rating of 0, 1 or 2 indicating the increased severity of depression. A total sum variable was constructed and $\alpha = .83$.

Psychological distress was measured by the Strengths and Difficulties Scale (SDQ) by Goodman (1997). It consists of 25 items or psychological attributes describing emotional problems of depression and anxiety, behavioral problems such as aggression and hyperactivity, relational problems and prosocial behavior. Each dimension consists of five items and participants evaluated how well the description fitted them on a 3-point scale ranging from 0 = *not at all* to 2 = *yes, fit well*. In this analysis, emotional, behavioral, and hyperactivity scales were summed up to a total score of psychological distress. The SDQ peer problems scale was omitted due to its potential overlap with peer relations. Test–retest reliabilities, internal consistency and criterion validity of SDQ scale have been established among Palestinian children (Thabet, Stretch, & Vostanis, 2000). In this study the reliability of the total score variable was moderate, $\alpha = .68$

Translations. The research instruments assessing peer and sibling relations were not available in Arabic. A bilingual psychologist first translated them from English into Arabic, and a researcher then made the back-translation. The originals and the factors analyses of the scale structures are available from the authors.

Results

Descriptive statistics

Table 1 shows the ranges, means and standard deviations of age, military trauma, peer and sibling relations, and mental health among boys and girls. Boys reported more experiences of military trauma and CDI depressive symptoms and lower level of siblingship warmth than girls. No gender differences were found in friendship quality

Table 1. Means and standard deviations of key variables by girls and boys

	Girls			Boys		
Demographic factors	Range	*M*	*SD*	*M*	*SD*	*t*-values
Age	9-15	11.00	1.12	11.57	1.09	3.73***
Military trauma	0-24	5.93	3.82	8.15	4.14	3.89***
Loneliness	1-5	2.09	.84	2.20	.86	.96
Friendship quality	1-5	3.88	.82	3.30	.76	–.73
Siblingship warmth	1-5	3.72	1.03	3.12	1.12	–4.07***
Siblingship conflict	1-5	2.39	1.09	2.12	.95	–1.91
Siblingship rivalry	1-5	2.05	1.23	2.12	1.13	.46
Siblingship intimacy	1-5	3.40	1.13	3.14	.98	–1.82
PTSD symptoms	0-66	31.82	13.10	28.46	12.51	–1.77
CDI depressive symptoms	0-44	8.73	6.52	11.11	6.94	2.43**
SDQ psychological distress	1-22	8.21	3.79	8.57	3.62	.62

Note. ** $p < .01$; *** $p < .001$

Table 2. Bivariate Pearson correlations among independent and dependent variables

Independent & dependent variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender		–.24**	–.25**	–.07	.05	.27**	.13	–.03	.12	.13	–.17*	.04
2. Age			.27**	–.01	–.06	–.04	–.04	–.04	–.11	–.24**	.18**	.12
3. Military trauma				–.08	–.16*	–.02	.03	.24**	–.04	.1	.24**	.14*
4. Loneliness					–.23**	.01	.13*	.36**	–.06	.08	.31**	.32**
5. Friendship quality						.16*	–.13	–.15*	.23**	–.17*	–.42**	–.34**
6. Siblingship warmth							.03	.1	.54**	.1	–.1	–.06
7. Siblingship conflict								.48**	.04	.26**	.27**	.26**
8. Siblingship rivalry									.14*	.29**	.23**	.24**
9. Siblingship intimacy										.11	–.19**	–.18**
10. PTSD symptoms											.17*	.18*
11. CDI depression symptoms												.60**
12. SDQ psychological distress												

Note. * $p < .05$; ** $p < .01$

and Loneliness, in siblingship rivalry, conflict and intimacy, or in PTSD Symptoms and SDQ Psychological distress.

There was a relatively high variation in children's trauma exposure. As can be expected, witnessing war and military violence was more common than being personally the target. Three quarters witnessed air strikes (79%) and shooting and firearms battles (77%), and more than a half saw other people being injured (58%) or killed (59%). Approximately a third of the children had had their friend killed (27%) or injured (34%), and about a quarter had lost a family member as killed (23.5%), injured (27%) and imprisoned (24%). Of children themselves, 4% were injured, 19% sieged inside their homes and 8% had their homes attacked by tanks and bulldozers.

Table 2 presents bivariate Pearson correlations between the independent and dependent variables of the study. The results showed non-significant zero-order correlation between military trauma and PTSD Symptoms but when controlled for age and gender, association was present. It potentially indicates that the association between trauma and PTSD symptoms differs between boys and girls.

Military trauma and peer and sibling relations

The results of the hierarchical multiple regression analysis of trauma impacts on peer and sibling relations, and their gender and age specificity are presented in Table 3. In Step 1 gender and age, in Step 2 military trauma, and in Step 3 the interaction terms between military trauma and age/sex were entered. The dependent variables were the two scores of peer relations and the four scores of siblingships.

Models significantly explained the variations of friendship quality (10%), and siblingship warmth (8%) and rivalry (8%). The models of Loneliness in peer relations and siblingship intimacy and conflict were non-significant.

The results reveal that children exposed to a high level of military trauma reported poor friendship quality (ß $= -.14$, $t = -1.96$, $p < .05$). The association between military trauma and friendship quality was both gender- and age-specific, as evidenced by the significant interaction effect (ß $= -.27$, $t = -3.74$, $p < .001$ for gender; ß $= -.19$, $t = -2.55$, $p < .01$ for age). As Figure 1a shows, a high level of military trauma was associated with poor friendship quality especially among girls, while military trauma did not affect negatively boys' friendships. Figure 1b illustrates that exposure to a high level of military trauma was associated with poor friendships, especially among younger children, whereas trauma did not affect friendship quality among older children.

Concerning sibling relations, results show that children exposed to a high level of military trauma reported more siblingship rivalry than children exposed to a low level (ß $= .26$, $t = 3.63$, $p < .001$).

Table 3. Standardized beta coefficients for hierarchical linear regression models for main and interaction effects of gender, age and military trauma predicting peer- and sibling relations

	Sibling relations				Peer relations	
Main/interaction variables	Warmth β	Intimacy β	Rivalry β	Conflict β	Friendship quality β	Loneliness β
Step1						
Age	.05	–.07	–.14	–.07	.06	–.07
Gender	.29***	.09	.01	.13	.02	–.08
Step 2						
Military trauma	.05	.00	.26**	.06	–.14*	.06
Step 3						
Military trauma × age	–.08	–.03	.08	.12	–.19**	.10
Military trauma × sex	–.09	–.14	.10	.06	–.27***	.12
Total model	$R^2 = .08$, $F(5,211) = 3.88$, $p < .01$	$R^2 = .04$, $F(5,211) = 1.78$, p = ns.	$R^2 = .08$, $F(5,211) = 3.88$, $p < .01$	$R^2 = .04$, $F(5,211) = 1.39$, p = ns.	$R^2 = .10$, $F(5,213) = 4.37$, $p < .001$	$R^2 = .03$, $F(5,213) = 1.21$, p = ns

Note. * $p < .05$; ** $p < .01$; *** $p < .001$

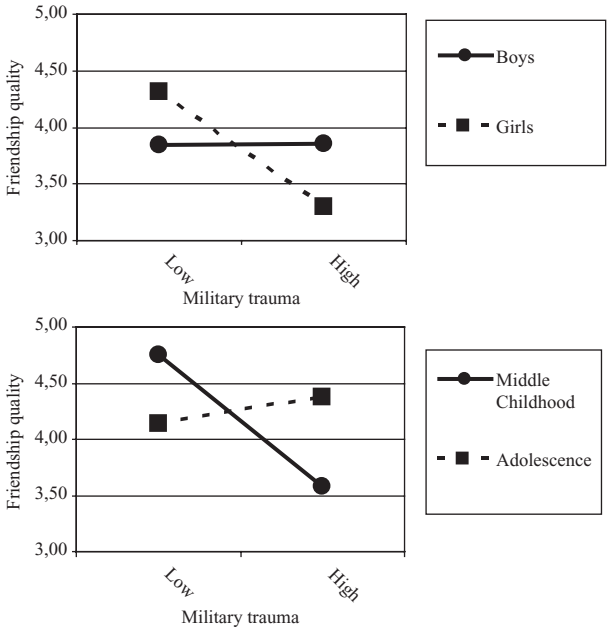

Figure 1a and 1b. The association between military trauma and friendship quality according to a) child gender and b) child age
Note. High military trauma = above the sample median
Low military trauma = below the sample median
The military trauma × gender – interaction effect (ß = .27, $t = -3.74$, $p < .001$.)
The military trauma × age – interaction effect (ß = –.19, $t = -2.55$, $p < .01$.)

The association did not differ according to gender or age, as indicated by the non-significant interaction effects. There was a significant main effect of gender on siblingship warmth (ß = .29, $t = 4.06$, $p < .001$), indicating that girls experienced more warmth in their sibling relations than boys.

Social relations mediating between military trauma and mental health

The analysis of social relations mediating between military trauma and mental health is based on testing four regression models as advised by Baron and Kenny (1986). Mediation is substantiated if after controlling the demographics (gender and age) the following three regression models and Beta-values would be significant: (1) the association between the predictor (military trauma) and the outcomes (PTSD and CDI depressive symptoms, and SDQ Psychological distress), (2) the association between the predictor and the mediators (Peer and Sibling relations), and (3) the association between the mediators and outcomes. If these three conditions were met, we then tested whether the impact of the predictors (military trauma) on the outcome (symptoms) is reduced when controlling for the mediator (Peer and Sibling relations). In this fourth and final regression (4), to indicate mediation, a significant reduction should occur in the coefficient for military trauma on symptoms of PTSD, CDI, and SDQ, but not in the coefficients for the mediators on the symptoms. The Sobel test with 95% confidence interval (95% CI) (Sobel, 1982) with the bootstrapping procedure outlined by Preacher and Hayes (2004) was used to indicate mediation significance. A total of 5,000 bootstrapping samples were utilized in the current study.

The first regression model revealed a significant association between military trauma and CDI depressive symptoms (ß = –.20, $t = -2.93$, $p < .05$) and PTSD symptoms (ß = –.21, $t = -2.90$, $p < .05$). The second model showed that military trauma was significantly associated with friendship quality (ß =.16, $t = 2.46$, $p < .05$) and siblingship rivalry (ß=–.23, t=–3.55, $p < .001$). Finally, the third regression model demonstrated the significant associations between friendship quality and CDI depressive symptoms (ß = –.41, $t = -6.66$, $p < .001$). Also, siblingship rivalry was significantly associated with CDI depressive symptoms (ß =.23, $t = 3.37$, $p < .01$) and PTSD Symptoms (ß = .28, $t = 4.09$, $p < .001$).

Taken together, only friendship quality and siblingship rivalry met the three criteria of formal testing of mediation set by Baron and Kenny (1986). In the final regression models on CDI depressiveness, the coefficient of military trauma diminished (from ß = –.20, $t = -2.93$, $p < .05$ to ß = –.14, $t = -2.22$, $p < .05$), while neither the coefficient of friendship quality (ß = –.41, $t = -6.66$, $p < .001$) nor the coefficient of siblingship rivalry (ß = –.19, $t = -2.81$, $p < .01$) diminished. Also, in the final regression model on PTSD Symptoms, the coefficient of military trauma diminished (from ß = –.21, $t = -2.90$, $p = < .05$ to ß = –.12, $t = -1.60$, $p <$ ns), while the coefficient of siblingship rivalry did not (ß = –.29, $t = 4.12$, $p < .001$). The Sobel test confirmed the significance of the mediation of friendship quality ($z = -2.28$, $p < .05$) and siblingship rivalry ($z = -2.08$, $p < .05$)

Table 4. Standardized beta coefficients for hierarchical linear regression models for main and interaction effects of gender, age, military trauma and peer- and sibling relations predicting mental health

Main/interaction variables	PTSD symptoms	CDI depressive symptoms	SDQ psychological distress
Step 1	β	β	β
Gender	.07	−.16*(*)	.07
Age	−.27***(***)	.06	−.04
Step 2 military trauma	.19* (†)	.07	.03
Step 3 peer relations			
Friendship quality	−.14*(ns.)	−.34***(***)	−.31***(***)
Loneliness	.00	.16*(*)	.18**(*)
Step 4 sibling relations			
Warmth	−.02	.05	.07
Intimacy	.16	−.15*(ns.)	−.16*(†)
Conflict	.11	.20**(**)	.16*(†)
Rivalry	.16	.03	.08
Step 5 interactions I			
Military trauma x friendship	−.08	−.07	−.05
Military trauma x loneliness	.16	−.01	−.02
Step 6 Interactions II			
Military trauma x warmth	−.23*(*)	−.09	−.01
Military trauma x intimacy	.18	−.16	−.19*(†)
Military trauma x conflict	.03	.02	−.07
Military trauma x rivalry	−.18*(ns.)	.16*(†)	.13
Total model	$R^2 = .26$, $F(15,169) = 3.97 < .001$	$R^2 = .42$, $F(15,190) = 9.01 < .001$	$R^2 = .32$, $F(15,201) = 6.27 < .001$

Note. * p< .05; ** p < .01; *** p < .001; †p < .10 (the significance levels with Bonferroni correction are in brackets)

between military trauma and CDI depressive symptoms. Similarly, the Sobel test was significant for siblingship rivalry as mediator between the military trauma and PTSD Symptoms ($z = -2.62$, $p < .01$).

Peer and sibling relations protecting mental health

Multiple regression models with four main effects and two interaction effects were conducted to analyze the moderating functions of peer and sibling relations. On Step 1, gender and age were entered to control their impact. On Step 2, military trauma, on Step 3, Loneliness and friendship quality, and on Step 4, siblingship warmth, conflict, rivalry and intimacy were entered. To indicate moderation, on Step 5, two-way interaction terms between military trauma and peer relations were entered, and on Step 6, two-way interaction terms between military trauma and sibling relations were entered. The interaction terms were based on the centered sum scores, which controls for multicollinearity (Aiken & West, 1991).

The results of peer and sibling relations moderating the negative impact of military trauma on children's mental health are presented in Table 4. The regression models significantly explained the variation of PTSD Symptoms (26%), CDI depressive symptoms (42%), and SDQ Psychological distress (32%).

Significant interaction effects indicate that protective mental health function was substantiated low siblingship rivalry on CDI depressive symptoms (ß =.16, $t = 2.25$, $p < .05$), for high siblingship intimacy on SDQ Psychological distress (ß = −.19, $t = -2.21$, $p < .05$), and for high siblingship warmth on PTSD Symptoms (ß = −.23, $t = 2.47$, $p < .05$). As hypothesized, exposure to high level of military trauma was not associated with CDI depressive symptoms among siblings with low rivalry (Figure 2), and was not associated with SDQ Psychological distress among siblings who enjoyed high intimacy (Figure 3). Finally, exposure to high level of military trauma was not associated with PTSD Symptoms among siblings who enjoyed high warmth. The interactions effects between military trauma and siblingship rivalry and siblingship intimacy became, however, marginal when adjusted with Bonferroni corrections. Concerning the main effects, results revealed that high siblingship intimacy and low siblingship conflict were associated with low levels of CDI depressive symptoms and SDQ Psychological distress.

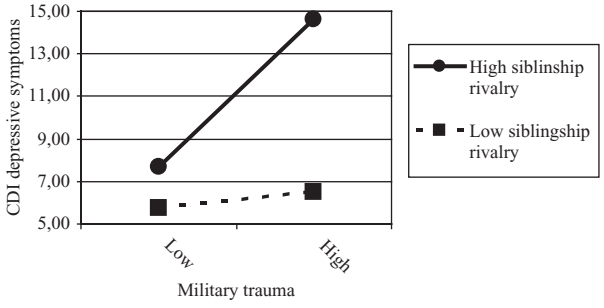

Figure 2. Siblingship rivalry moderating between exposure to military trauma and CDI depressive symptoms
Note. High siblingship rivalry = +1 SD above the sample mean
Low siblingship rivalry = −1 SD below the sample mean
High military trauma = above the sample median
Low military trauma = below sample median
The military trauma × siblingship rivalry −interaction effect (ß = .16, $t = -2.25$, $p < .05$.)

Although the significant (or marginally significant after Bonferroni correction) military trauma × siblingship rivalry interaction-effect was found on PTSD, the protective mental health function was not present. Low siblingship rivalry was associated with low PTSD Symptoms only when children were exposed to low level of military trauma. This means that lack of rivalry was not effective enough to protect children from PTSD symptoms in high trauma situations (See Figure 4).

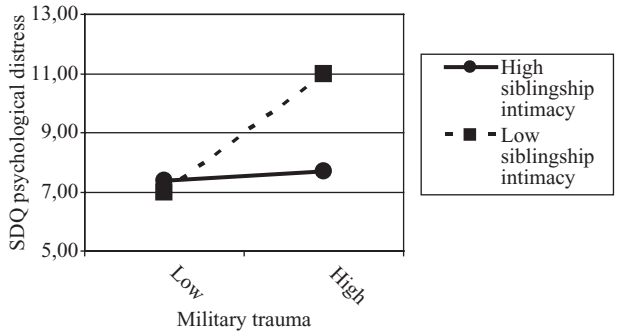

Figure 3. Siblingship intimacy moderating between exposure to military trauma and SDQ psychological distress.
Note. High siblingship intimacy = +1 *SD* above the sample mean
Low siblingship intimacy = −1 *SD* below the sample mean
High military trauma = above the sample median
Low military trauma = below sample median
The military trauma × siblingship intimacy −interaction effect
(ß = −.19, $t = -2.21$, $p < .05$.)

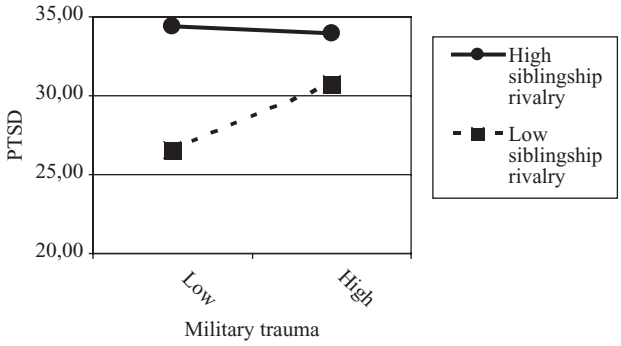

Figure 4. Siblingship rivalry moderating between exposure to military trauma and PTSD.
Note. High siblingship rivalry = +1 *SD* above the sample mean
Low siblingship rivalry = −1 *SD* below the sample mean
High military trauma = above the sample median
Low military trauma = below sample median
The military trauma x siblingship rivalry −interaction effect
(ß = −.19, $t = -2.21$, $p < .05$.)

Contrary to our hypothesis, good peer relations were not able to protect children's mental health from the negative impacts of military trauma, as indicated by the non-significant interaction effects. However, significant main effects reveal that high friendship quality was associated with low levels of CDI depressive symptoms (ß = −.34, $t = -5.56$, $p < .001$) and SDQ Psychological distress (ß = −.31, $t = -4.81$, $p < .001$), and high Loneliness with high levels of CDI depressive symptoms (ß =.16, $t = 2.56$, $p < .05$) and SDQ psychological distress (ß =.18, $t = 2.71$, $p < .05$).

Discussion

The theoretical understanding of children's responses to traumatic experiences is still in its infancy. Developmental aspects are emphasized, but their content, dynamics and practical meaning have not been thoroughly analyzed. One approach is to analyze how trauma challenges the mastery of salient developmental tasks in different stages of childhood (Pynoos, Steinberg, & Piacentini, 1999). In the transition from middle childhood to adolescence, relations with peers and friends become increasingly important for well-being, although family relations including siblingships continue to matter (Collins & Laursen, 2004; Schneider, 2000). Our results suggest a vulnerability of both friendship and sibling relations in traumatic war conditions, but revealed also an important protective mental health role of good siblingship among 10–14-year-old Palestinian children.

Trauma negatively affects friendship and sibling relations

Our results revealed that children who witnessed or were themselves targets of military violence had poorer friendships and more rivalry in their sibling relations than children who were spared such trauma. The results corroborate findings among other war traumatized children showing impaired and unsatisfactory peer relations (e.g. Paardekooper et al., 1999) and studies showing shattered intimate relations in war-traumatized families (Al-Krenawi, Graham, & Sehwail, 2004; Jordan et al., 1992). The results thus contradict the image of improved social relations and increased cohesion among people facing war and common threat (e.g., Baker & Shalhoub-Kevorkian, 1999).

Military trauma was especially harmful to girls' friendships, while boys' relations were less disrupted. According to the traditional view, in friendships girls are training and preparing for the female role of caring, sharing and consoling, while boys emphasize behavioral and active togetherness (Dunn, 2004). Girls' vulnerability may lie in the salience of friendships in their lives, as trauma dramatically shatters their highly valued intimacy and carefully created trust. Girls usually have a larger investment in relationships than boys, and in the face of trauma girls typically cope by intensifying attachment behavior, reassurance and emotional sharing (Wadsworth et al., 2004).

Further, trauma interfered with friendships among younger children. Forming new and close friendships is extremely important in the transition from middle childhood into adolescence. We can argue that military trauma makes a more serious impact on still fragile relations in middle childhood, while more established friendships might be more resistant to the negative trauma consequences in adolescence. Older children seek social support and share emotions when facing traumatic events, which further can consolidate their friendships. Younger children in turn use concrete and behavioral coping strategies (Compas, Worsham, & Ey, 1992), and may not have yet built their social safety networks to endure in war and military trauma.

Our findings revealed increased rivalry among siblings when exposed to severe military trauma, while the positive aspects of siblingship were intact, as evidenced by non-significant associations between military trauma and warmth and intimacy in siblingship. Evolution psychology may have something to contribute here: in life threatening conditions the intensified rivalry between siblings results from the fight for survival when children attempt to exploit parents' limited resources and attention for their own sense of security. Research has documented limited parental resources in traumatized families, which may partly explain siblings' intensified rivalry for parental affection. Overwhelmed parents lack energy and are less supportive and monitor less their children (Armstrong, Birnie-Lefcovitch, & Ungar, 2005; Jordan et al., 1992), and high exposure to military trauma was found to be associated with either strict or neglecting parenting practices (Punamäki, Qouta, & El Sarraj, 1997; Thabet et al., 2009). Excessive guilt, anger, mistrust

and resentment in the parent–child relationship, in turn, has been found to lead to higher levels of rivalry between siblings (Scharf, Shulman, & Avigad-Spitz, 2005).

Only rivalry in sibling relations and friendship quality mediated the association between the exposure to military trauma and PTSD and depressive symptoms. Thus, in conditions of threat and fear, personal trauma forms a risk for children's mental health through deteriorated sibling and friendship relations. The mediation results emphasize the importance of cherishing children's social relations in extreme war conditions, as failure to engage in joyful activities and share experiences with peers can seriously interfere with good adjustment.

Sibling relations protecting mental health

The protective mental health function was substantiated for optimal sibling relations. Specifically, exposure to severe military trauma was not associated with PTSD, depressive or distress symptoms among children who enjoyed intimacy and warmth and lacked rivalry in their sibling relations. A recent 30-year longitudinal study showed impressive protective powers of good early sibling relations in enhancing mental health in later life challenges (Waldinger et al., 2007). Our cross-sectional study thus confirms the importance of good siblingship in life endangering conditions of war that force children to struggle for their developmental resources and to protect their mental health. The result that the sibling but not the peer relations fulfilled the protective role calibrates the general argument for satisfactory social support being the main predictor of good psychological adjustment among adult trauma victims (for reviews, see Brewin & Andrews, 2000; Ozer, Best, Lipsey, & Weiss, 2003).

The findings showing the success of siblingship and failure of peer relations protecting children's mental health can be explained by political issues on one hand and by trauma theories on the other hand. Disclosure of painful experiences and sharing multiple emotions is considered one of the secrets of resilience also among traumatized children (Punamäki, 2006). Close human affiliation can provide life-saving information and serve reassurance of recovery, and enables the creation of a consoling narrative of overwhelming and fragmented horrors. We may speculate that intimate and non-rivalling sharing with siblings brings a deeper feeling of security than support received from friends or peers. The finding accords with the saying "Blood is thicker than water", indicating that family relations overrule other relations in general and especially under threat.

The political explanation relates to the suspicious atmosphere that characterizes war and the foreign military occupation (Baker & Shalhoub-Kevorkian, 1999). Children may therefore be afraid of completely trusting their peers to disclose their experiences and share emotions. These experiences can be shameful and involve feelings of cowardice, fear and humiliation, and divulging them to siblings rather than to peers may thus be easier. Also, practically, restriction of movement and military siege prevents children's opportunities to meet friends and enjoy closeness and reciprocal help and to share secrets and worries among peers.

Limitations of the study

In an ideal research setting we should also have had, in addition to self-reports, teachers' and parents' observations and documentation of children's mental health symptoms. Also, instead of child-reported peer-relations, the observational and sociogram-based methods might have revealed more nuanced and dynamic relations among war-traumatized children. The analyses of the mediating risk and moderating protective function of peer and sibling relations was conducted in a cross-sectional setting, which is known to limit its interpretative power.

Since a moderator could serve either as a protective or a risk factor, we have to be aware of the bi-directional nature of our findings. It may equally well be, for instance, that depressive children tend to withdraw from their peer relations, and are felt annoying by their siblings. Likewise, when children experience intrusive and uncontrollable traumatic memories as PTSD symptoms, their company could be frightening to friends and peers. Thus the symptoms may cause social problems and not only vice versa. Finally, the results revealed some age and gender specificity concerning the associations between military trauma and peer relations. We would have needed a larger sample to examine the moderating and mediating effects separately among boys and girls and among younger and older children.

Conclusions

Our findings of mediator and moderator dynamics suggest a vicious circle of child development in trauma: the more children need protective social resources such as friends' and siblings' support, the more the very trauma impedes their optimal function. We learned that in traumatizing conditions siblingships could serve either as a protective or risk factor for mental health, as the non-rivalling relationship was the moderator, and the rivalling relationship the mediator, between the relationship of military trauma and mental health. Lack of intimate friendships turned out to be a risk factor for psychological symptoms in the life-threatening war situation, while good friendships could not function as protector. One aim of preventive interventions in war zones is to break the vicious circle of child development by offering support and tools for children to form and maintain satisfying peer and sibling relations. Creative examples of how to do this could be found, for example, in studies among children with limited expressive skills (Boutot, 2009) or cognitive delays (Timler, Olswang, & Coggins, 2005), where positive results have been achieved by using co-planned sequential social scripts, in order to help children to cope with challenging peer interaction situations.

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Running head: Parental violence and adolescent mental health

Parental violence and adolescent mental health

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Abstract

Being the target of parental violent acts decreases child adjustment and increases the likelihood of mental health problems in childhood and adolescence. Our study analyzes how different types of parental violence ranging from verbal threats and swearing to hitting and kicking a child, are associated with child adjustment, indicated by SDQ total problem score, internalizing and externalizing problems as well as prosocial behaviour. We also study whether girls and boys and youths in two Nordic countries respond differently to parental violence. The data consists of a large-scale community sample of 15-16 year old Finnish (n=5,762) and Danish (n=3,943) adolescents. The representative data of continental Finland and its Finnish and Swedish speaking 9th graders as well as representative data of Danish 9th grade pupils was collected by the Police College of Finland and in Denmark by the National Institute of Public Health, University of Southern Denmark. The results show a clear dose-response effect between parental violent behaviour and the adolescent's problems. The more severe forms of parental violence were associated with higher levels of SDQ total difficulties and internalizing and externalizing symptoms. There was also a connection between parental violence and the deterioration of prosocial behaviour. The association was gender and nationality specific. The findings imply a high prevalence of parental violence and adverse mental health among the affected Finnish and Danish adolescents. Though the laws have been set in motion to prevent the use of parental physical violence the challenges remain in several domains of child protection, general health care, prevention and intervention.

Key words: parental violence, adolescence, mental health

Parental violence and mental health

According to the Child Maltreatment Classification Scheme MCS [1], six maltreatment subtypes can be distinguished: physical abuse, sexual abuse, failure to provide (a form of physical neglect), lack of supervision (another form of physical neglect), emotional maltreatment, and educational maltreatment. Despite the growing empirical evidence on the prevalence and influence of different types of maltreatment, there are, however, clear gaps in the field. There is both empirical and conceptual evidence that the best understanding of characterizations of maltreatment and their differential outcomes is achieved by examining the subtypes separately and by taking the different levels of severity within each subtype into account [2, 3, 4]. There is a large body of evidence on the effects of child sexual abuse on child adjustment, but much less attention has been paid, for example, to physical abuse [5]. Also, the detailed analyses of the effects of different severity levels of maltreatment on children are practically missing [4].

The Developmental Victimization Survey of 2,030 American children [6] revealed that in the year preceding the survey, child maltreatment (broadly defined) occurred approximately in 1 in 7 of the 2-17 year old children and adolescents. Of the five maltreatment types measured in the study, emotional abuse was the most frequent, with 10% of children experiencing name calling or denigration by an adult. The large scale Finnish study of 7,349 9th graders conducted in 1988 showed that during the previous 12 months 47% of children experienced verbal aggression, 19% were targets of mild physical violence such as slapping or pushing, and 5% reported an experience of severe physical violence [7].

Maltreatment is thus a common phenomenon and therefore requires more detailed research. The meaning of different types of maltreatment should be investigated separately, and gender-based differences in reactions to maltreatment studied, in order to provide a better understanding of maltreatment. Also, comparative analyses between countries of the prevalence and meaning of maltreatment is needed to benchmark and identify urgent and important national specific problems or health goals. However, only few such studies have yet been published [8]. The Nordic countries have shown to have many similarities in youth victimization studies [9] but especially related to parental maltreatment, countries also have remarkable differences. Although across the Nordic countries, violence and maltreatment have been rather strictly defined and legislated against, there is a major difference between the two countries included in this study regarding the time when corporal punishment was made a penal act. In the Finnish

criminal code, corporal punishment has been a penal act since 1984, whereas in Denmark the same law was not introduced until 1997. This creates an interesting setting for a comparative analysis.

In our study the focus is on the associations between parental violence with its three levels of severity and adolescents' mental health. In addition, comparative analyses of those results will be provided between genders and between the two Nordic countries, Denmark and Finland.

Child physical abuse: Influence on child's mental health and social relations

Previous studies have revealed that children who have been victims of abuse and neglect have more psychosocial problems, and they function less adaptively in several areas of development than do their non abused peers [10, 11, 12]..Concerning physical abuse, some evidence exists that both internalizing and externalizing symptoms seem to occur among children and adolescents exposed to physical maltreatment, and that those who experience more serious physical abuse show more internalizing and externalizing behavioural problems than those who experience less serious abuse [13].

Fantuzzo [14] found that physically abused children showed significantly higher levels of aggression than their non-abused peers, even after controlling for several family related factors. Also, clinically significant externalizing symptoms have been reported to be significantly higher among physically abused children compared to the reference group. Ackerman et al. [15] found that children with a history of physical abuse have higher rates of oppositional defiant disorder and conduct disorder diagnoses compared to other maltreatment subcategories such as emotional neglect or sexual abuse. Additionally, in their longitudinal birth cohort study, Fergusson & Lynskey [16] found that young people at age 18 reporting exposure to harsh or abusive treatment during childhood had elevated rates of violent offences, suicide attempts and alcohol abuse. Noteworthy, a meta-analysis of corporal punishment revealed similar results. Within 88 reviewed studies, corporal punishment was associated with several negative outcomes in childhood as well as in adulthood, including increased aggression, antisocial behaviour and abusive behaviour towards others [17].

There is also evidence of elevated levels of internalizing symptoms such as depression among physically abused children compared to the reference group [18]. Finzi et al. [19] substantiated the specific role of parental violence as a source of internalizing problems, reporting that children who were exposed to parental violence had more depressive symptoms and suicidal behaviour compared not only to non maltreated children but also to

neglected children. Physical maltreatment has also been found to be associated with problems in dating partners and making close friends [20].

Exposure to parental violence in adolescence

In most studies, the "lifetime" count of maltreatment experiences has been used as a measure of violent situations in home environments and its impact on children's well being and mental health [21]. This research tradition, however, fails to show the specific effects of maltreatment experiences at a certain developmental stage, and more systematic research on the association between concurrent exposure to violence and the range of internalizing, externalizing and transitional outcomes has been asked for [22, 23]. In our study, we wanted to clarify the specific effects of the acute experiences of parental violence at the age of 15-16. We rely on adolescents self reports, which are regarded as an important and reliable source of information in older children (8, 24, 25).

The extent of violent experiences varies among abused children. Barnett et al. [1], for example, found that among 11-14 year old children the extent of abusive experiences varied from a single incident of maltreatment to 14 years of recurring incidents of maltreatment. Also, results on the age differences of exposure to child maltreatment are controversial, some studies showing a decline in maltreatment experiences with age and some indicating higher rates of maltreatment experiences in adolescence than at a younger age [26, 27]. In the USA the Developmental Victimization Survey [6] revealed that physical abuse was highest among the teenage group, boys and girls experiencing similar rates of violence.

In addition to the emphasis on the detrimental nature of physical maltreatment in early childhood [28], the adverse consequences of adolescence-only maltreatment as well as persistent maltreatment are now seen as an important aspect of child mental health and behaviour [29]. So far very few studies apply the experimental comparative developmental approach within maltreatment research, but Stewart, Livingston & Dennison [30] noticed that children whose maltreatment extended into adolescence had higher rates of offences than those with childhood-only maltreatment.

It is noteworthy that the most accurate reports of violent experiences are achieved by using a rather short referent period [31] and a one-year referent has been shown to be relevant [32].

Research questions

This study first examines whether different levels of parental violence (during the last 12 months) are differently associated with self-reported mental health, indicated by SDQ total problem score, internalizing and externalizing

symptoms as well as prosocial behaviour. We hypothesized a dose-response effect between parental violent behaviour and the adolescent's problems. This means that we expected adolescents exposed to parental violence to have higher levels of mental health problems and lower levels of prosocial behaviour compared to adolescents without experience of parental violence. Further, we hypothesized that adolescents exposed to more severe forms of parental violence had increased levels of these problems compared to adolescents with exposure to milder levels of violence. Second, we examined whether the association between different severity levels of parental violence and mental health was gender or country specific.

Method

Participants and procedure of the study

The analysis in this article is based on the Finnish Child Victim Survey (2008) and Danish Youth (2008) study. The surveys covered a wide variety of violence against children, from traditional street violence and violence between peers to sexual abuse, family violence and bullying. In Finland the data was collected among 12-13 (6^{th} graders) and 15-16 (9^{th} graders) year old pupils. In this study only the data for 9^{th} graders is analysed. In Denmark the data was collected among 9^{th} graders.

In Finland, the survey was conducted by the Police College of Finland and in Denmark by the National Institute of Public Health, University of Southern Denmark in 2008. In both countries the surveys were based on multimedia computer-based self-administered interviews, which the children answered during school hours. The Finnish children accessed the questionnaire via a website which included information about the project as well as about violence in general. The survey was administered by teachers in the schools who were all properly instructed by the research team. The Danish survey was conducted in the school classroom where trained interviewers introduced the survey method, and they remained in the classroom while the students completed the questionnaire.

The data is a representative sample of mainland Finland and its Finnish and Swedish speaking 9^{th} graders as well as a representative sample of Danish 9^{th} grade pupils in the mandatory school system. The final Finnish sample consisted of 2,856 girls and 2,906 boys and the final Danish data 1,999 girls and 1,944 boys.

The Finnish sampling was drawn with a stratified cluster sample design based on county, quality of municipality and size of the school. The original sample included 184 schools with children in 9^{th} grade. Of those 161 participated to the survey (88 %). Data consisted of 5807 responses. The exact response rate can't unfortunately

be presented because the variable needed to calculate that (namely the school ID), was vanished during the data collection. However, the representative nature of the final data was checked comparing basic socioeconomic factors to other representative studies (see more 33). Of the total amount of responses 45 were excluded due to lack of consistency in the answers. In the Danish survey, a random sample of 342 schools was selected from lists of all public, non-public, and institutional schools in Denmark. The schools were sampled randomly within six strata corresponding to different classifications of ”percent urban” in the Danish census.. Of those, 122 schools participated (35%). No important differences were found between the strata distribution of the participating and non-participating schools. There were 5,013 9th graders in those schools and 4,093 of those participated in the survey. Also in the Danish data, due to lack of consistency in some of the data sets, some responses were excluded from the data.

Measures

Parental violence was measured by Finnish and Danish versions of the Conflict Tactics Scale created by Straus [35]. The scale consists of 14 items beginning with parental aggressive verbalization towards the child and moving to severe violent acts towards the child. Participants responded by indicating whether they had experienced such acts (1 = yes) or not (0= no) during the previous 12 months. The four groups indicating different severity levels of parental violence were formed based on these answers. The “No violence” group included children who had no experiences of verbal aggression or mild or severe physical violence. The “Verbal aggression” group included children who had experienced verbal aggression but no mild or severe physical violence. Acts of verbal aggression included items such as “sulking or refusing to talk, insulting or taunting or swearing, throwing objects and threatening with violence”. The “Mild physical violence” group included children who had experienced mild parental violence accompanied or not accompanied by verbal aggression. Acts of mild physical violence included “pushing or shoving or shaking, hair pulling, smacking and whipping”. The “Severe physical violence” group included children who had experienced severe parental aggression accompanied or not accompanied by acts of mild physiological violence and/or verbal aggression. Acts of severe physical violence included “battering, hitting with wrist, hitting with object, kicking, threatening with knife or gun and using a knife or gun”.

An adolescent was included in one of the three violence groups if she/he had experienced at least one of the acts in a category. That means that there is a variation within the three groups on the frequency of experiences

ranging from a onetime experience of one of the included acts, to several experiences of multiple included items. If the information about the experience was missing in some of those individual acts, the case was categorized as no experience before forming the summed variables. That was done to minimize the amount of missing data in the summed variables.

SDQ total difficulties, internalizing and externalizing symptoms and prosocial behaviour were measured by the Strengths and Difficulties Scale (SDQ) by Goodman [36] The scale consists of 25 items on psychological attributes describing internalizing problems of depression and anxiety, and externalizing problems such as aggression and hyperactivity, plus prosocial behaviour. Participants evaluated how well the description fitted them on a 3-point scale (0 = not true, 1 = somewhat true, 2 = certainly true). Factor analysis (Varimax) was applied to check the validity of dimensionality. The results revealed a somewhat different factor structure than the traditional five scale solution in SDQ and the reliability of the original dimensions of SDQ was low in the data (range α= .71. The best fitting factor solution in these analyses was a 3-factor model. Based on these factors the averaged sum variables of externalizing, internalizing and pro-social behaviour were formed. The externalizing factor included 7 items ("I get very angry and often lose my temper", "I take things that are not mine from home, school or elsewhere", etc.), the internalizing factor included 8 items ("I have many fears, I am easily scared, I am often unhappy, down-hearted or tearful", etc.) and the prosocial factor 9 items ("I try to be nice to other people. I care about their feelings", "I am helpful if someone is hurt, upset or feeling ill", etc.). The 20 items including questions about emotional symptoms (5items), conduct problems (5items), hyperactivity (5items) and peer relationship problems (5items) were added together to generate a SDQ total difficulties score. The test-retest reliabilities, internal consistency and criterion validity of these scales have been well established [36, 37]. The reliability of the SDQ for children's self reports was α= .67 for SDQ total score, α= .71 for internalizing symptoms, α= .71 for externalizing symptoms and α=.65 for pro-social behaviour.

Statistical analysis

To examine the associations between parental violence and child mental health, and their gender and nationality specificity the 4 (violence: no violence, verbal, mild and severe) X 2 (gender) X 2 (nationality) between subjects factorial multivariate analysis of variance (MANOVA) with their two-way interactions were applied to the dependent variables of the SDQ total difficulties score, internalizing symptoms, externalizing symptoms and

prosocial behaviour. A Bonferroni correction was used to obtain a more conservative alpha level. The post hoc tests using the Tukey HSD post hoc criterion for significance were conducted to examine the differences between the four severity levels of parental violence. Examinations of the homogeneity of variance-covariance matrices and normality assumptions underlying MANOVA did not reveal any substantial anomalies.

Results

Descriptive results

In the Finnish sample 49% of girls and 74% of boys had no experiences of parental verbal aggression or physical violence during the previous 12 months. Differences between the sexes were clear in all severity levels of parental violence, with girls reporting higher exposure. Being the target of parental verbal aggression (girls 39%, boys 20%), mild physical violence (girls 10%, boys 4%) or severe physical violence (girls 2%, boys 1%) was two times more common among girls compared to boys.

In the Danish sample 58% of girls and 68% of boys reported no experiences of parental verbal aggression or physical violence during the previous 12 months. Being the target of parental verbal aggression (girls 43%, boys 33%) and mild physical violence (girls 9%, boys 4%) was more common among girls compared with boys, whereas the same number of girls and boys reported exposure to severe physical violence (girls 2%, boys 2%).

Insert Table 1 about here

Parental violence and mental health

Table 2 presents the main and interaction effects between exposure to parental violence, gender, country and mental health outcomes.

Main effect and Post hoc comparisons of parental violence. The results show a significant association between exposure to parental violence and SDQ total score ($F(3,9185)= 132.84$ $p <.001$), internalizing symptoms ($F(3,9185)=75.90$, $p<.001$), externalizing symptoms ($F(3,9185)=126.57$, $p<.001$), and prosocial behaviour ($F(3,9185)=10.34$, $p<.001$) indicating that children experiencing the more severe forms of parental violence reported poorer mental health and prosocial behaviour.

The Post hoc comparisons using the Tukey HSD test indicated a clear dose-response effect. Concerning all symptom measures, the mean scores for exposure to parental verbal aggression (SDQ total: M = 12.19, SD = 5.15;

externalizing: M = .46, SD = .35; internalizing: M = .57, SD = .37) were significantly higher than in the no violence condition (SDQ total: M = 10.47, SD = 4.81; externalizing: M = .38, SD = .34; internalizing: M = .44, SD = .33). Further, the mean scores for exposure to mild violence (SDQ total: M = 14.37, SD = 5.40, Externalizing: M = .61, SD = .39, internalizing: M = .66, SD = .42) were significantly higher than for verbal aggression. The mean scores for exposure to severe violence (SDQ total: M = 15.60, SD = 5.67, externalizing: M = .75, SD = .43, internalizing: M = .73, SD = .40) were significantly higher than for exposure to mild violence concerning the externalizing symptoms but not SDQ total difficulties score or internalizing symptoms. Concerning the prosocial behaviour, however, only the mean scores for exposure to mild parental violence (M = 1.21, SD = .29) was significantly lower than in the no violence condition (M = 1.27, SD = .33), and there were no other significant differences.

Interactions between exposure to parental violence, gender, nationality and mental health outcomes.

The association between parental violence and internalizing symptoms was gender specific, as evidenced by the significant interaction effect ($F(1,9185)=5.24<.001$). This means that a high level of parental violence was associated with internalizing symptoms especially among girls. Also, the association between parental violence and mental health was country specific as evidenced by the significant interaction effects of internalizing ($F(1,9185)=4.98$, $p<.01$) and externalizing ($F(1,9185)=3.67$, $p<.05$) symptoms and total SDQ total difficulties score ($F(1,9185)=7.07$, $p<.01$). These interactions indicate that the exposure to parental violence was associated with mental health symptoms especially among Danish adolescents. Generally taken, the symptom scores, however, remained at a lower level in every class of parental violence exposure compared to Finnish adolescents. In other words, there were clearer differences between the classes of exposure to parental violence in symptom scores among Danish than Finnish youths.

Main effects of gender and country

There was a significant main effect of gender on internalizing symptoms ($F(1,9185)=9.96$,$p<.01$) and externalizing symptoms ($F(1,9185)=7.05$,$p<.01$) indicating that boys have higher levels of symptoms than girls. There was also a significant main effect of country on internalizing symptoms ($F(1,9185)=14.37$,$p<.001$) and SDQ total score ($F(1,9185)=270.35$,$p<.001$) and prosocial behaviour ($F(1,9185)=1029.87$,$p<.001$) indicating that Finnish adolescents have higher levels of internalizing symptoms and total SDQ Psychological distress and lower level of prosocial behaviour than Danish adolescents. It is noteworthy that the mean score of total SDQ Psychological distress exceeded the cut-off score for the borderline/abnormal range among Finnish (16.43) but not Danish (14.96)

adolescents experiencing severe parental violence (the SDQ cut-off score is 16 and it identifies 20% of the population; http://www.sdqinfo.com).

Insert Tables 2 about here

Discussion

Our results showed that about 40% of adolescents in both samples in this study had experienced verbal aggression and/or physical violence from their parents during the previous 12 months prior to the research, revealing a startling reality of negative experiences in the family context. That is much more than the results of the Child Victimization survey [6] among American children and youth showed, but much less than in the 1988 study among Finnish adolescents [7]. The American Child Victimization survey, however, excluded episodes of conventional corporal punishment. Exposure to parental violence was greater among girls than boys in this analysis. This was contrary to the findings from American samples showing similar exposure to minor violent acts among girls and boys, but which showed a slightly greater risk of severe physical abuse among boys compared with girls [38].

In line with earlier research [39, 40], the adolescents who reported more severe forms of parental violence also reported more severe psychological problems. It is important to note that the exposure to verbal aggression was associated with higher levels of total difficulties, internalizing and externalizing compared with the no violence condition. Thus, the verbal threatening and subjugation of a child may pose a risk to the adolescent mental health. Furthermore, when verbal aggression changes to or is accompanied by physical violence, the level of the adolescent's problems is even higher. This implies that the acts that are traditionally seen as corporal punishment such as slapping or pulling ones hair are acts that are frightening enough to produce agitation. The significance may lie in realizing that a parent, who is supposed to be protective and calm is acting unpredictably. The dose-response effect was not so evident concerning prosocial behaviour, even though adolescents who were exposed to mild parental violence reported poorer prosocial behaviour compared to adolescents with any experiences of parental violence. This trend of prosocial behaviour being less affected by adverse experiences may be seen as a resource for rehabilitation and prevention of mental health problems among exposed adolescents. Intact human relationships and adolescent's ability to act in positive ways outside the family context are of great importance when dealing with mental or behavioural difficulties.

Only the internalization symptoms showed a gender specificity, high levels of parental violence being associated with internalizing symptoms. Girls exposed to parental violence in our study were more likely to react with symptoms of anxiety and depression compared to boys. The national differences found in our study imply that parental violence more strongly increases mental health symptoms among Danish adolescents, although we have to be aware that in general the level of symptoms remained lower compared to Finnish children. Thus, there were clearer differences between the classes of exposure to parental violence in symptom scores among Danish than among Finnish adolescents. The gender specificity in the association between parental violence and internalizing symptoms should make us cautious about drawing general conclusions. However, the adolescent attitudes towards parental violence should be taken into account when explaining the results. The results may also support the widely held view that there are huge individual differences in the way that individuals (both children and adults) respond to stress and adversity (41).

Although there is no detailed knowledge of the effects of parental violence according to developmental stages, adolescence is generally seen as a vulnerable period of exposure to a harmful home environment [42]. The vulnerability among the affected adolescents in this study manifested itself in elevated levels of SDQ total difficulties and internalizing and externalizing symptoms as well as some deterioration of prosocial behaviour. The fact that both internalizing and externalizing symptoms were associated with the level of parental violence implies that adolescents experience a wide variety of distress when exposed to an adverse home environment. Unfortunately our data does not allow us to take account of the strength of maltreatment in these different subtypes, which would also need further research. One incidence compared to continuous maltreatment may have different kinds of outcomes.

Legislation

In 1988, when the earlier Child Victim Survey was made in Finland [7], corporal punishment had been illegal for only four years. By the time of the current study twenty-four years have passed since it was prohibited. Concerning parental violence, the most outstanding difference between these two points of time can be seen in the prevalence of mild physical violence (including the acts that have traditionally been regarded as a form of corporal punishment). The number of children in Finland experiencing slapping and pushing, for example, by their parents in

2008 had dropped to one third of what it was in 1988. The same trend, although not as clear as in mild physical violence, can also be seen in verbal and severe physical violence.

Among Finnish children in the current study sample, corporal punishment has been forbidden by law during their whole lifetime, whereas in Denmark the children in this study sample have spent approximately four of their first years living in communities where slapping, or pulling a child's hair, for example, was still legal. Noticing this difference in the timing of legally abandoning parental corporal punishment, it is interesting to compare the frequencies of parental violent acts between the two countries. Although maltreatment analysed here has occurred during the past 12 months of the survey, when maltreatment was illegal in both countries, it has been shown at least in Finland that attitudes towards physical punishment do not change rapidly (43), and therefore the prevalence of maltreatment may vary because of the difference in timing. The results, however, showed that the number of children who had experienced mild or severe physical violence within the previous 12 months was almost exactly the same in Finland and Denmark. The actual impact of the legislation can't be specified but the result is very interesting and reveals that Nordic countries, at least Denmark and Finland, do not differ so remarkably in experiencing maltreatment at home, although actions to prevent it may differ. Although slapping, or pulling a child's hair, for example, have been forbidden by law, there is still a minority of parents in both societies who do so anyway, while most of the parents do not punish their children that way. Discipline practices are closely related to cultural beliefs and, despite the empirical evidence of their negative consequences, they seem difficult to change [44].

Co-occurring forms of adverse experiences

We have to be aware of the fact that children's experiences within the previous 12 months reflect different kinds of violent history in their homes. When a child is exposed to psychological and physical violence, he/she could at the same time be exposed to other forms of maltreatment, such as sexual abuse or physical/emotional neglect. There is evidence that physical and psychological violence (emotional maltreatment) as well as a lack of general supervision tend to co-occur [39]. Likewise, interparental violence (often referred to as domestic violence) and parental violence towards children are, at least to some extent, co-occuring phenomena [45, 46]. For example, mothers who are targets or perpetrators of partner violence are more prone to use physical violence towards their children than mothers who do not have such experiences [47].

This kind of accumulation of victim experiences most definitely also plays a role when associations between maltreatment and adolescents' mental health are studied. Witnessing interparental violence, for example, is linked to adverse mental health outcomes among children [for meta-analysis see for example 48, 49]. Finkelhor and others (50) have even suggested that taking so called poly-victimization into account, the impact of individual victimizations on mental health may even disappear. Knowledge of the accumulation of children's violent experiences thus stresses the need for a more comprehensive picture [6] and should be noted as a consequential factor behind our results, but doesn't diminish the importance to study also the meaning of parental maltreatment. According to our other research, although experiences of poly-victimization is taken into account and diminishes the impact of some other kinds of individual victimization, it does not make the impact of parental maltreatment on adolescents' mental health disappear [51]. In addition, it has been argued, that child maltreatment (physical abuse or neglect) is the form of victimization that has the strongest independent association with depression and anger/aggression [52].

Limitations of the study:

The Danish sample suffered from a relatively large number of schools who for several reasons did not participate. Although no important differences were found between the strata distribution of the participating and non-participating schools, there may be differences in the available schools from the non-participating schools on characteristics relevant to the study.

Given the cross-sectional nature of the study we have to be aware of the bi-directional nature of our findings. We have shown that parental use of violence (involving swearing, slapping, or even hitting the child) is associated with a child's mental problems. This association can reflect the harmful effect that parents behaviour is causing distress for a child, but it can also be the case that a child's behavioural or emotional problems might result in the parents being violent towards the child. Gelles & Cornell [53] have suggested that the lack of scientific attention given to parental violence towards adolescents may have reflected the attitude that, because of their own difficult behaviour, adolescents share some complicity when receiving such mistreatment. Based on knowledge of the accumulation of adversity in family contexts it is also difficult to conclude whether the mental health problems found in this study are primary outcomes of physical abuse or of other problems within the family. Further research is needed to illuminate up the complex transactions between different family related factors and their influence on parental

violence. This work was started by Jaffee [54], who found a genetically mediated relation between children's antisocial behaviour and their exposure to (nonnormative) physical maltreatment.

Additionally, the limitations of the widely used SDQ as a measure should be taken into account. The reliability of the original dimensions of SDQ was low in the data. The earlier applications of this measure were made in Sweden [55] and other Nordic countries [56]. Based on Nordic research the SDQ has shown to be an acceptable screening instrument for large community samples but it needs further evaluation. Its psychometric quality in particular should be improved [57, 56, 58, 55].

Conclusions

Knowledge of the prevalence of parental violence and the assessment of its effects should have implications for child protection, general health care, prevention and intervention. The findings of this article point to the high prevalence of parental violence and adverse mental health among the affected Finnish and Danish adolescents. It is noteworthy that among Finish adolescents experiencing severe parental violence the cut-off score for the borderline/abnormal range of SDQ total difficulties score was exceeded. Consequently, the recommendations based on our study could be the following; whenever the knowledge about parental use of severe violence such as hitting or kicking of a child/adolescent is achieved by social worker, nurse, psychologists etc. some psychosocial interventions should be offered. About 40% of Finish and Danish adolescents experience verbal and physical violence at the hand of their parents. The knowledge about its harmful effects could be delivered already in child health clinics and later in parental meetings at the school. The threshold for taking these issues under discussion should be low among professionals working with children and adolescents.

Even though the laws have been set in motion to prevent the use of parental physical violence the challenges remain in several domains: 1) controlling people’s compliance with these laws, 2) creating conformity in the consequences when these laws are broken, 3) raising the general awareness of the detrimental effects of physical but also of the verbal aggression and subjugation of a child, 4) preventing harmful disciplinary practices and finally, implementing effective mental health interventions for children who have developed symptoms due to these harmful experiences.

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