

School-based interventions for minors in war-exposed countries: a review of targeted and general programmes

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Abstract

Lately, there has been a call to develop and assess efficacious mental health interventions for minors who have witnessed organized violence. This review outlines what is currently known about targeted and general school-based interventions for children and adolescents in war exposed countries. Seven empirical outcome studies were identified from a PubMed and PsychINFO search; four targeted and three general programmes. Despite the paucity of published evidence, some promising findings were noted. School-based interventions implemented by locally trained paraprofessionals in organized violence settings appear to be a feasible and low cost sustainable alternative to individualized therapy for distressed children in low and middle income countries. However, the reported outcomes for treatment effectiveness were mixed and suggest that school-based group crisis interventions for traumatized war exposed minors may not be sufficient to reduce mental distress and may sometimes even increase it. Several limitations in the published literature were observed. Although studies reported changes in symptoms associated with interventions, most did not report on the degree of functional impairment. Further, there may be a need to develop interventions targeting other dimensions of organized violence than post-traumatic distress, for example, depres-

sion and maladaptive grief. At this point in time it is difficult to compare targeted versus general interventions. There may be risks associated with screening minors, and studies should weigh the cost benefit of targeted versus broader treatment approaches. Future research should aim to determine which therapeutic ingredients, which could be professional-specific, such as manualized cognitive-behavioural therapy, culture-specific, or a combination, significantly contribute to positive outcomes.

Keywords: school-based interventions, refugee, children, adolescents, organized violence, war, mental health

Introduction

Between 1990 and 2003 there was major armed conflict in 27 to 38% of the world's developing countries, affecting around 20 million children.¹ According to Walker et al. this exposure to violence accounts for 8 to 34% of negative outcomes in the children exposed to these atrocities.¹ Further, the authors found a 33% increase in post-traumatic stress disorder (PTSD) in children from more violent communities compared to children from less violent communities.

Contrary to the widespread perception that refugees flee to developed countries, the statistical evidence indicates that most of them remain in their region of origin or flee to neighboring countries. Today, developing

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countries host 82% of the world's refugee population.² In refugee minors exposed to war related stressors, exposure to trauma and violence is compounded by displacement and loss of their familiar environment, and the risk for developing mental health difficulties is increased for these children.³ It is estimated that as many as 40% of young refugees may have psychiatric disorders, mainly PTSD, depression, and other anxiety-related symptoms.⁴ However, data about the impairment associated with these symptoms is rarely available and multiple studies have underlined the discrepancy between high levels of reported symptoms and good social adjustment.^{5, 6} Despite the multiple adversities they face, child and adolescent refugees have been found to be extremely resilient,⁷ with family and community factors often playing a key protective role. However, the mental health needs of those who develop psychopathology are still largely unmet, especially in low and middle income countries.⁸ According to Ehntholt, Smith, and Yule, psychological treatment opportunities for traumatized refugee children are nearly non-existent,⁹ and randomized controlled trials are scarce.¹⁰ Closing the gap between need and available services is complicated by the fact that there is a lack of clearly formulated mental health policy initiatives for children and adolescents. Although countries have a duty under various United Nations agreements to alleviate the effect of war on children's mental health, many do not live up to their responsibility. For instance, in the African region 35% of countries have limited local child relevant mental health policy and few have a dedicated child and adolescent mental health policy.¹¹ These findings are worrisome because, as argued in the literature, for relief efforts to be successful in addressing the needs of children in complex emergencies,

coordinated interventions are critical.¹² In addition, most of the treatments for childhood PTSD are based on adaptations of interventions originally developed for adults.¹³ As outlined by the World Health Organization's Atlas Project, few national programmes have been developed to highlight the mental health needs of children, and those that exist, have been almost exclusively developed in high-income countries.¹⁴

Lately, to address the gap between child and adolescent mental health needs and the availability of resources, there has been a call to develop and assess efficacious mental health interventions for minors who have witnessed organized violence.^{13, 15} In the 2008 annual review issue of the *Journal of Child Psychology and Psychiatry*, Leckman and Leventhal outlined the need to develop preventative and efficacious interventions that can be implemented by non-specialist health care workers, such as school and community based programmes.¹⁵ However, as outlined by Patel et al. the evidence base for low cost community based interventions for children in low and middle income countries, especially in the midst of an emergency, is lacking.¹⁶ Recently, the first systematic review on evidence and treatment approaches for children in war in low and middle income countries by Jordans et al. found a moderate effect size for treatment efficacy.¹⁷ Although they did find some high effect sizes, these were largely the results of within-group change rather than an effect of treatment, and the authors concluded that there is a general lack of empirical evidence for interventions.

As well, there is a scarcity of research documenting the effect of specific therapy techniques for war affected children, and most of the available evidence pertaining to the treatment of PTSDs has resulted from studies done in non-warfare settings.¹³ In

a review paper on the psychosocial aspects of children exposed to war, Barenbaum, Ruchkin, and Schwab-Stone, claim that it is more important from a public health perspective to address the needs of large groups of traumatized children exposed to violence in their country of origin, rather than later when they are in exile.¹³ However, this is also more difficult. As the authors argue, assessing traumatized children during war or social turmoil is complicated by limited economic and treatment resources. Thus, mental health interventions may take the back seat to other relief operations, even though the psychological needs of children should be built into emergency and rebuilding initiatives.¹⁸

Although the evidence base for mental health prevention and intervention for war exposed children is still in its embryonic stage, recent years have brought increased attention to the importance of implementing mental health services aimed at reducing or preventing the harmful impact of armed conflict on children.¹⁹ Several promising treatments, such as cognitive-behavioural therapy, narrative exposure therapy, and creative expression therapy have emerged.¹⁰

To date, no meta-analyses exist that directly measure the effect of school-based interventions for refugee children compared to other types of interventions. A systematic review by Silverman et al. found that group school-based cognitive behavioural therapy was “probably efficacious” in reducing symptoms of psychopathology; however, these results were not based on studies of children exposed to organized violence *per se*.²⁰ To address this gap in the literature, this review, although not systematic, will outline what is currently known about the effect of different types of school-based treatment interventions, in particular for children who have experienced organized violence. The

paper will focus on general and targeted interventions implemented in war exposed countries.

The value of school-based interventions for refugee children and adolescents

Despite their high exposure to adversity, immigrant and refugee families tend to underutilize mental health services for multiple reasons (stigma, cultural inappropriateness, alternate help-seeking behaviours).^{21,22} Mainstream Western mental health approaches have often not been effective with these populations.⁷ For instance, in an epidemiological study of Somali and Oromo adult refugees, of whom 25–69% had been tortured, less than 1% of the participants requested or accepted referral to mental health services, even though they scored high on measures of psychological problems.²³ The same trend has been observed in a behavioural problem screening study of recently settled Bosnian refugee families in Massachusetts. Although the families reported behavioural symptoms for 77% of children, only one family expressed interest in psychosocial services of any kind.²⁴ Furthermore, in low income countries the mental health needs of psychologically distressed children are sometimes not met because their families have difficulty accessing mental health care. In 2003, a World Health Organization conference on Caring for Children with Mental Disorders identified lack of transportation and available resources as the most significant barriers to care.¹⁴ Thus, in both developed and developing countries, several researchers have outlined the value of school-based interventions as a non-stigmatizing and easy access alternative to mental health care clinics for these children.^{4,22}

School-based interventions are considered to be a viable public health initiative in complex emergencies, because they are

able to reach most children and target larger groups of children than clinic-based referrals.¹⁹ Because many victims of complex emergencies are reluctant to seek help, mental health professionals should take a proactive stance to outreach efforts and implement programmes in the children's natural settings, such as schools where their teachers may take the role of empathetic and responsible mediators.²⁵

School intervention and prevention programmes do not just address PTSD symptoms in children affected by organized violence but are also directed to the wider social problems caused by war.²⁶ The initial goal of these interventions is to create an emotionally safe and stable environment. For instance, The STROP model developed by Swedish paediatrician Lars Gustafsson highlights the value of school and kindergarten as a safe place in the middle of an otherwise chaotic environment.²⁷ As outlined by the RCT Field Manual on Rehabilitation the first line of therapy for traumatized children and adolescents needs to focus on establishing safety, stability, and trust to support healthy coping strategies.²⁷ This may be attained by joyful group activities organized by familiar adults in school settings, such as creative expression and physical exercise. Further, as Tol et al. have argued, implementing feasible and cost effective school-based interventions run by locally trained paraprofessionals in complex emergencies is valuable because they address the global disruption of children's environment caused by war, reach large groups of children, and respond to the lack of specialized mental health interventionists.¹⁹

In a similar vein, Barenbaum, Ruchkin, & Shwab-Stone have argued that war relief programmes for children should emphasize simple, low cost, group-based non-specific therapeutic interventions.¹³ Although not

directly discussing mental health school-based interventions, Betancourt and Khan have outlined how educational institutions may work to improve the social and mental health outcomes of refugee minors during complex emergencies.²⁸ As argued by the authors, going to school may instil hope for the future and improve social networks. In addition, schools may serve a protective function because they improve the monitoring of children and their physical and mental health may be screened in a more systematic manner. Thus, mental health interventions in schools may facilitate the screening and treatment of refugee children whose mental health and functional impairment require further attention.

Offering interventions in schools is in line with the World Health Organization's policy on delivering mental health care through community resources rather than through isolated clinics.¹⁸ However, although numerous small scale projects have been implemented in developing countries, they remain largely unknown because they are rarely evaluated or published.²² When international mental health consultants are involved in projects in war affected communities, they must work with and train local personnel to ensure that interventions are sustainable.¹⁸ For school-based interventions, this may be managed by training local teachers in basic mental health techniques so they can organize group interventions for their students with minimal aid from foreign consultants.

Although the value of school-based interventions has been outlined, researchers have also warned against pushing assessment and research procedures ahead of the promotion of social cohesion and functioning in war relief efforts.¹³ Pure research should not compromise the effectiveness of other interventions, and must aim to be integrative and

culturally sensitive. Successful intervention programmes should not pathologize children, but must be based on the community's cultural norms and beliefs; incorporating cultural practices is essential.²⁸ Although researchers have pointed out that Western medicalization of children exposed to armed conflict may be culturally insensitive and fail to contextualize their distress,²⁹ it has still been emphasized that if traumatized children are not diagnosed, they may not get the attention they require.¹⁰ As outlined by Barenbaum, Ruchkin, & Schwab-Stone the optimal approach to understanding and treating war exposed children might draw on principles of *both* cultural specificity and cross cultural universality.¹³

In the next few sections, this paper will describe the design of and results of school-based interventions for children and adolescents implemented in war exposed countries. In this review, a targeted intervention (also known as indicated) implies that the children were screened for psychopathology before being assigned to an intervention. Thus, these individuals reported a higher level of symptoms than their peers. In contrast, a general (also known as universal) school-based intervention means that the children and adolescents were not selected for inclusion in the study based on their level of symptomatology, although this may have been measured at baseline for evaluative purposes.

Targeted school-based interventions in war exposed countries

Targeted group-based school interventions have been designed because meeting the needs of traumatized children in complex emergencies by offering individual therapy is unrealistic. As argued by Yule individual therapy may also be undesirable because not all children are so severely distressed that

they require individual therapy.¹⁸ Further, group based treatments provide a source of peer support, which may further help alleviate distress in children exposed to armed violence.³⁰ The value of targeted interventions versus general interventions has also been indicated by Barenbaum, Ruchkin, & Schwab-Stone who have argued that screening for traumatic symptoms and psychosocial impairment before implementing therapeutic interventions may be beneficial because it separates those in urgent need from those less in need.¹³

PubMed and PsychINFO were searched to identify published empirical outcome studies evaluating targeted school-based interventions for children exposed to violence in developing countries; four were identified (see Table 1 for an overview).

In the first cluster randomized trial on a school-based intervention for children exposed to violence in a low income setting, Tol et al. implemented a manualized, five week school-based group intervention for children (mean age 9.9 years) exposed to political violence in Indonesia.¹⁹ The children were screened for exposure to violence, for symptoms of posttraumatic stress and anxiety, and functional impairment prior to the intervention. Eighty percent of the children screened were included in the study. The intervention consisted of 15 sessions with groups of around 15 children led by locally trained paraprofessionals, and included trauma processing activities, cooperative play, and creative-expressive elements. The authors concluded that the intervention reduced posttraumatic stress symptoms for girls and helped maintain hope for boys, but did not reduce traumatic-stress related symptoms, depressive symptoms, anxiety symptoms, or functional impairment for either sex.

In addition to accumulating much needed empirical evidence about the ef-

Table 1. *Reviewed studies (n = 7)*

Authors, (year), country	Type of intervention	Sample size	Methodology	Intervention, (duration/ sessions)	Outcomes
Tol et al. (2008) Indonesia	Targeted	495	Cluster randomized trial	Manualized group based intervention (5 sessions, 5 weeks)	Reduced PTSD symptoms, helped maintain hope, but did not reduce traumatic stress-related symptoms, depressive symptoms, anxiety symptoms, functional impairment
Layne et al. (2008) Bosnia	Targeted	127	Randomized controlled trial	Trauma/grief focused psychotherapy (17 sessions, school year)	Reduced depression, PTSD symptoms, and maladaptive grief
Layne et al. (2001) Bosnia	Targeted	87	Non-controlled design	Trauma/grief focused psychotherapy (20 weekly sessions)	Reduced PTSD, depression, and grief symptoms; changes associated with psychosocial functioning
Thabet et al. (2005) Gaza	Targeted	111	Quasi-experimental	Group crisis intervention (7 sessions)	Did not reduce PTSD and depression symptoms
Gupta & Zimmer (2008) Sierra Leone	General	306	Non-controlled design	Trauma healing, recreational activities (8 sessions, 4 weeks)	Reduction of intrusion and arousal symptoms, but increased avoidance symptoms; increased optimism concentration, reduced nightmares
Woodside et al. (1999) Croatia	General	250	Non-controlled design	Psycho-educative, expressive groups (4 months of weekly sessions)	Reduced PTSD symptoms, ethnic bias, increased girl selfesteem and quality of social connections
Gordon et al. (2004) Kosovo	General	139	Non-controlled design	Mind-body experiential psycho-educative groups (6 weekly sessions)	Reduced PTSD symptoms

ficacy of school-based interventions, one of the major strengths of this intervention lies in the researchers' efforts to work with the local community. The interventionists were selected from local target communities based on a selection procedure assessing social skills through role play. In general, they had no formal mental health training, and received a two week training programme before the start of the intervention. As men-

tioned by Yule, training local paraprofessionals ensures greater sustainability of mental health initiatives than if foreign consultants run the intervention.¹⁸ As well, as evidence of further community involvement, the instruments were administered by locally trained individuals, and not by the researchers themselves.

Layne et al. have published the findings of a randomized controlled trial on the ef-

fectiveness of a school-based group psychotherapy programme implemented by locally trained and supervised school counsellors for war exposed adolescents attending 10 secondary schools in central Bosnia during the 2000-2001 school year.³¹ Of the 1,279 students who completed the risk screening survey prior to the initiation of the programme, 159 students met inclusion criteria and were randomized to the treatment or comparison condition. All these students reported severe symptoms of posttraumatic stress disorder, depression, or maladaptive grief, as well as significant impairment in school or relationships at baseline.

This study is unique in that it compared two experimental conditions; one was an active-treatment comparison condition consisting of an integrative mental health programme composed of psychoeducation and coping skills; the other a treatment condition composed of both the psychoeducation and coping skills programme as well as a 17 session specialized trauma and grief focused intervention for severely traumatized and traumatically bereaved youth. The results showed significant pre- to post-treatment and post-treatment to four month follow-up reduction in depression and posttraumatic stress symptoms in both conditions. Reduction in maladaptive grief was only found in the treatment condition. These findings suggest that psychoeducation and skills training, as well as more specialized mental health intervention, efficiently reduce mental health symptoms for minors exposed to organized violence. However, there are limitations to this study. The authors fail to mention if the PTSD and depression scores were below the clinical cut-off range post-treatment. Further, they did not measure reductions in maladaptive functioning, although one of the inclusion criteria in the study was evidence of significant functional impairment.

This intervention, in the same vein as Tol et al. aimed to be sustainable. First of all, the Federal Ministry in Bosnia made the implementation of the treatment programme a job requirement for the counsellors. Second, the Ministry contracted local mental health professionals to provide supervision.

Layne et al have also conducted an earlier study (open trial) on the effect of trauma and grief focused psychotherapy, implemented in 10 secondary schools for traumatized Bosnian adolescents during the 1999-2000 school year.³² Inclusion criteria were history of clinically significant trauma exposure, report of moderate to severe symptoms of post-traumatic stress, and evidence of functional impairment. The authors do not mention the exact number of students who participated in the classroom-based screening before the intervention. The final sample included 55 students. As in their later study, the authors concluded that the intervention significantly reduced posttraumatic stress, depression, and grief symptoms. In contrast to their other study, this evaluation included a measure of psychosocial functioning at post-test. It was found that reductions in psychological distress were associated with higher levels of psychosocial adaptation. The fact that the researchers included psychosocial impairment as an inclusion criterion adds strength to the study.

The findings must be interpreted with caution, as the study did not include a control group or random assignment to treatment. Also, in a qualitative evaluation of the trauma-grief focused psychotherapy for war exposed Bosnian adolescents previously mentioned, the most negative outcome reported by students and teachers was that the intervention had a damaging impact on interpersonal relationships.³³ Fifty percent of the students' negative comments were related to stigmatization; at the initiation of

the intervention many felt stigmatized by teachers, peers, and even family members. These comments from the focus group participants show the potential harmful impact of selecting students based on indices of psychopathology and then separating them from their school mates to participate in a targeted intervention. One potential way to avoid the risk of stigmatization for programme participants may be to invite non-selected children to other non-therapeutic group activities.¹⁹

Thabet, Vostanis, and Karim have evaluated the short-term impact of a quasi-experimental group crisis intervention delivered in school for 47 children aged 9-15 years from five refugee camps in the Gaza Strip.³⁴ This intervention took place during ongoing conflict and the children were selected if they reported moderate to severe symptoms of post-traumatic stress disorder on the Child Post Traumatic Stress Reaction Index (CPTSD-RI). The authors do not mention the exact number of students initially screened. The group crisis intervention was led by a child psychiatrist, a psychologist, and a social worker. During the seven weekly sessions, the children were encouraged to describe their direct experience of trauma by using free drawing, talking about their traumatic experiences and feelings, writing about traumatic events, storytelling, games, and role play related to the conflict. This treatment was compared to a teacher led intervention conducted over four sessions, in which the teacher informed the children (n = 22) about the impact of trauma and tried to normalize the children's responses to organized violence. The teacher received four training sessions delivered by the principal investigator on what trauma entails, its consequences, and how to deal with it. The two interventions above were compared to a no-intervention group (n = 42). Neither inter-

vention significantly reduced the children's post-traumatic and depressive symptoms from baseline to three months after the end of the intervention. In fact, depressive symptoms increased in both intervention groups, but not in the control group.

In conclusion, these four studies show that it is possible to implement sustainable and low cost targeted school-based interventions run by locally trained non-specialist interventionists for refugee children. However, because the number of children screened and subsequently involved in the interventions varies enormously (from around 80% in one study to around 10% in another, to missing information in two), it is difficult to compare the studies in a meaningful way. Although promising, the results are mixed and suggest that school-based group crisis interventions for traumatized war exposed minors may not be sufficient to reduce mental distress and may sometimes even increase it.

Several communalities were observed. For instance, all four studies applied significant exposure to traumatic events and symptoms of post-traumatic distress and depression as inclusion criteria. Tol and Layne et al. also applied functional impairment as an inclusion criteria.^{19, 31, 32} Previously, researchers have been criticised for not considering the degree of impairment associated with symptoms of mental distress in war exposed children,¹³ which is a substantial problem considering that impairment in social or occupational functioning is an essential diagnostic feature for mood and anxiety related disorders. Beyond similarities, there still seems to be a lack of consensus among researchers on what constitutes the most effective treatment modality. For instance, the proposed interventions varied in length from seven to 20 sessions, employed different methods of assessment and, although all studies included trauma-processing activi-

ties, other activities varied across studies. One programme offered only trauma-focused work with mostly negative results. It is thus difficult to evaluate how much of the observed benefits stem from trauma-focused activities and how much stem from other social and experience oriented activities included in the interventions. As well, all the students in these studies were above the age of nine. Thus, there is still a lack of evidence for targeted school-based interventions for primary school age children exposed to violence who may need programmes with more non-verbal content. Finally, only Tol et al.¹⁹ reported results split by sex, which is in line with other studies of school-based interventions in refugee receiving countries.³⁵ It follows that upcoming empirical investigations should examine the effect of gender, which may indicate a need for gender-specific activities.

General school-based interventions in war exposed countries

General school-based interventions have been suggested as an alternative to targeted interventions on several grounds. First of all, in organized violence contexts all children are exposed to a certain level of social turmoil and, at least, indirect trauma. Thus, general interventions in schools may prevent further traumatization by establishing a safe and protective environment from which all children can benefit.³⁶ It has been found that most of the mental health needs of children affected by social turmoil can be addressed by restoring basic needs, security, and human rights.³⁶ Thus, intervention programmes should be broad, comprehensive, and not isolated from other activities, such as education and play, which improve the normalization and quality of life for all children affected by war. As argued by Kos and Derviskadic-Jovanovic expensive

mental health programmes implemented in war settings for children with diagnosable PTSD are targeting just a small number of children and thus fail to take into account the broader social consequences of war.³⁶ As the authors point out, general programmes may be preferable because these also help children who may not have a diagnosable disorder but who still suffer from sadness and grief.

Although the rationale for screening for symptomatology in targeted interventions has been pointed out earlier, several potential disadvantages also need to be mentioned. Screening may possibly have adverse effects, such as secondary distress from asking questions about trauma.³⁷ Further, as outlined by Offord et al. screening is costly and may not capture those individuals at highest risk of developing a mental health disorder because they refuse to participate in the screening procedure.³⁸ Also, screening may result in false positives or negatives, and the difference between individuals meeting the threshold for inclusion in a targeted intervention and those scoring just below it may be minimal. Finally, the risk for a disorder may fluctuate over time, and unless screening is repeated, it will not capture the possible instability of symptoms over time. Thus, the benefits of screening children in targeted interventions may potentially be outweighed by the potential harm of excluding children who do not meet the exact inclusion criteria at the initiation of the intervention. It follows that in a context of organized violence it may be questionable to help a small number of children through targeted interventions when many more can be helped by broader interventions.³⁶

General interventions may prevent a mental health decline in children not currently showing symptoms, and may work to increase their academic functioning and self-

esteem.^{30, 35} Encouraging children to talk about their stressful experiences before they are ready may traumatize them further,²⁷ and creative expression, which is often used in general interventions, encourages children to express themselves non-verbally. Second, in asylum-receiving countries it has been found that refugee and immigrant families often feel threatened by targeted interventions offered through the schools because they are perceived as a risk for further marginalization and potential stigmatization.³⁸ As indicated by the qualitative evaluation in Bosnia previously mentioned, increased stigmatization may also be a risk in war settings. As well, immigrant families exposed to violence may not recognize their children's mental health distress as caused by violence exposure,³⁹ or may have a culturally different perception of disturbance.⁴⁰ Further, in the study previously mentioned by Layne et al.³¹ it was found that the general psychoeducational and skills based comparison treatment significantly reduced symptoms, and that the more intensive treatment only incrementally outperformed the general treatment in terms of symptom reduction from pre- to post-test. These results suggest that specialized trauma-focused group therapy may be no more effective than a more general psychoeducational approach for refugee minors experiencing mental distress, with the latter being beneficial for all children irrespective of their level of symptomatology.

PubMed and PsychINFO were searched to identify published empirical outcome studies evaluating general school-based interventions for children exposed to violence in developing countries; three were identified (see Table 1 for an overview).

Gupta and Zimmer have reported the results of an eight session psychosocial intervention for 306 war affected children displaced by war in Sierra Leone.⁴¹ The minors

(aged 8-18) were randomly selected from a school registration list and were interviewed about their war experiences and reactions to violence by locally trained female research assistants at their camps before and after participating in the programme. The four week intervention, implemented by locally trained camp teachers, combined structured trauma healing activities with recreational activities and basic education in an effort to reduce the children's emotional distress and posttraumatic stress reactions. Overall, it was found that 96% of the participants reported a significant reduction in concentration problems, sleep disturbances, nightmares, and intrusion symptoms after participating in the intervention. The activities were also associated with a significant decrease in arousal symptoms, a slight increase in avoidance symptoms, as well as increased optimism for the future. Although these results must be interpreted with caution due to the lack of a control group, the findings are promising. The increase in avoidance is intriguing and should be investigated further. Increased avoidance may represent a healthy need for the children to distance themselves from a clearly overwhelming experience in a precarious safety context. This intervention was the first to address both educational needs and mental distress, and indicates that a short term general intervention implemented in a volatile environment may efficiently reduce symptoms of post-traumatic distress.

Woodside, Santa Barbara, and Benner⁴² have reported the results of a four-month school-based pilot project involving 250 fourth and fifth grade non-refugee Croatian children affected by war. The project, involving three experimental classes and three control classes, was designed to promote trauma healing, non-violent conflict resolution, and reconciliation, and was presented weekly by

locally trained teachers. It was found that the intervention significantly reduced post-traumatic stress and ethnic bias. These results were maintained at one year follow-up. The intervention had a more positive effect on girls, whose self-esteem was enhanced by programme participation, than on boys. Although the positive changes observed were small, this intervention offers hope that ethnic bias may be reduced by psychological trauma healing, which in turn may improve inter-community relations and community climate. This programme was also well accepted by students and teachers, who commented that the quality of social connections improved in the classroom. Finally, this programme initiative shows sustainable large scale school-based interventions can be implemented in middle income countries. After completion of the pilot project, the programme was subsequently implemented for 1,260 children in 35 schools in Eastern Slavonia by 65 locally trained teachers.

Gordon et al. have reported the results of a six week one group pre-test post-test study evaluating whether mind-body experiential and psycho-educative techniques reduce symptoms of post-traumatic stress symptoms for war traumatized adolescents in Suhareka, Kosovo.⁴³ This pilot intervention, implemented four months after the end of the NATO bombing in Kosovo, included 139 voluntary high school students in three separate groups. No inclusion or exclusion criteria based on exposure or standardized screening were applied because, as argued by the authors, all students living in the Suhareka war zone had been directly exposed to atrocities. The intervention was implemented by local teachers trained by faculty from the Center for Mind-Body Medicine in Washington. After receiving six weekly sessions, the programme participants reported a significant decrease in post-traumatic

stress symptoms as measured by the Post-traumatic Stress Reaction Index questionnaire at the end of the last group. Clinical significance ranged from moderate for group 1 (Cohen's $d = 0.60$) to large for groups 2 and 3 (Cohen's $d = 0.80$). Thirty of the participants from group 1 were also tested 15 months after the end of the intervention. While 17% reported severe post-traumatic stress symptoms at pre-test, none reported it at the 15 month follow-up. Although this study is limited by the lack of a control group, these results show promise for implementing mind-body skills training for traumatized adolescents, especially because the results were maintained longitudinally.

Discussion

Developing and implementing school-based interventions in low and middle income settings appears to be a promising avenue to address the mental health needs of children exposed to war and organized violence. However, this review of published programmes also supports the conclusion drawn by Jordans et al.¹⁷ that there is a paucity of rigorous studies evaluating psychosocial interventions for minors exposed to organized violence.

Despite the scarcity of well-established evidence for school-based interventions, several promising findings were noted. Firstly, all the studies discussed aimed to be sustainable and culturally sensitive by training local non-specialist teachers or paraprofessionals to implement the interventions. This community-based approach holds promise for the future because it implies that large-scale interventions, both in the midst of an emergency and after, may be efficiently implemented for minors affected by armed conflict. As well, there seems to be a move towards applying more rigorous methods of programme evaluation. The two most

recent studies on targeted interventions by Tol et al.¹⁹ and Layne et al.³¹ were both randomized controlled trials. In addition, these two studies also included repeated measures (baseline, pre-test, and six and four month follow-up, respectively). Although these well-controlled studies offer evidence of efficacy, it may not always be ethical or justifiable to conduct rigorous research in organized violence conflicts due to the potential harm for children not included or placed on a waiting list. Thus, in complex emergencies, less controlled studies should not be discarded if they can reach larger groups of children faster.

Despite these promising findings, several limitations must be addressed. Although all studies, except for Thabet, Vostanis, and Karim,³⁴ reported reductions in post-traumatic stress symptoms, results for other measures of mental distress were more varied. These results indicate that there is a need to develop interventions targeting other dimensions of the distressing experience of organized violence, for example depression and maladaptive grief. Past research has demonstrated that screening for symptomatology often fails to separate grief reactions from depression and PTSD, which implies that traumatic grief may need to be assessed and treated separately from other stress-related symptoms.¹³ Further, the clinical significance of findings was rarely mentioned. Only two studies (Tol et al,¹⁹ Layne et al.³²) measured functional impairment, which is relevant for planning and implementing interventions. As previously mentioned, there may not always be a relation between symptomatology and impairment. For instance, even though Sack et al. have found that PTSD symptoms are high and persistent in war traumatized Khmer youth, this need not be associated with major functional impairment.⁶ In the same vein, Mollica et al. have

reported a lack of an association between cumulative trauma and social functioning for Cambodian adolescent refugees.⁵ These results underline the resilience of young refugees, and as pointed out by Kos and Derviskadic-Jovanovic claims about the high levels of psychological distress in children and adolescents who have experienced social turmoil may have been over-exaggerated by clinical findings of symptomatology excluding indices of impairment.³⁶ It may be that the high levels of reported symptoms of distress are normal responses to a volatile environment and not an indication of dysfunction per se. Thus, future studies of war exposed children face the challenge of unpacking normal reactions to distress from pathological ones, and determining if changes in behaviour, such as avoidance, represent disorder related impairment or adapted responses to the environment.¹³

Although psycho-education and trauma healing were common to all the studies, other treatment modalities varied. There also seems to be a lack of consensus about assessment; some use interviews, while others use questionnaires. While interventions claimed to be culturally adapted, they generally failed to mention in any detail how this was achieved, replicating the finding by Jordans et al.¹⁷ Future research should try to distinguish what the active therapeutic ingredients of the interventions are: 1) the professional-specific aspect, such as manualized CBT, 2) the culturally-specific component (whether ritual, spiritual, artistic, and so on), or 3) the re-establishment of a safe and familiar environment where the children can discuss their experience and normalize their distress. If the latter is the case, non-specific school-based programmes organized around natural social interaction should possibly be preferred to specialized interventions.

Conclusion

While results are promising, they are still not convincing or conclusive. There is an urgent need for future studies to assess which factors of school-based interventions, both targeted and general, are most significantly related to positive outcomes. At this point in time it is impossible to conclude if trauma-processing activities are more effective than, for example, creative expressive elements, if Western-based cognitive behavioural therapy is more effective than traditional healing activities, or if longer interventions are superior to shorter ones. Even though interventions may report positive outcomes, there is currently no way to determine which ingredient or activity was the most important. In order for intervention efforts to be as efficient as possible, research must document how and why a specific treatment modality is better than another, both during ongoing conflict and thereafter.

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