Social support, coping and posttraumatic stress symptoms in young refugees

Ask Elklit, Prof. MSc*, Kamilla Østergård Kjær, MSc, Mathias Lasgaard, PhD, Sabina Palic, MSc***

Abstract

Young refugees from the former Yugoslavia commonly testify to having been exposed to multiple, traumatic experiences, which may contribute to the development of serious mental health problems such as posttraumatic stress disorder (PTSD), anxiety, and depression. Using self-report scales the present study investigated the prevalence of PTSD as well as factors associated with PTSD in a group of 119 Bosnian refugee youths (mean age 18.5). The group was special in that they had no right to seek asylum in the host country for the first couple of years of their stay. It is suspected that this circumstance had an effect on their wellbeing. Between 35-43% of the youth were found to be in the clinical range for a PTSD diagnosis. Female gender, problem-focused, and avoidant coping strategies, were significant predictors of PTSD. The protective effects of social support were, however, not observed for this group. There is a need for more studies, which address the factors that mediate and moderate effects of social support and effectiveness of different coping strategies in refugee youth dealing with different circumstances of the refugee experience.

Keywords: Refugee youth, posttraumatic stress disorder, perceived social support, coping strategies, asylum.

*) National Center for Psychotraumatology, University of Southern Denmark
**) Institute of Psychology, University of Southern Denmark
Correspondence to: spalic@health.sdu.dk

In recent warfare, civilian populations have recurringly been the targets and victims of torture, political violence, massacres, ethnic cleansing, shelling, imprisonment without a trial, persecution, and other atrocities.[1,2] As a result 15.4 million refugees and 27.5 million internally displaced people have migrated worldwide.[3]

Experiences of war, political violence, uprooting, and resettlement are a source of great psychological distress, which leaves refugees at high risk of developing PTSD.[4,5] From a developmental psychopathological perspective, it is possible that adolescents distinguish themselves from children and adults in their responses to war-trauma. Being at a stage where the development of identity and autonomy is a central issue, refugee youth may be particularly vulnerable in terms of psychological problems, given that war traumatization and refugee resettlement may cause disturbances in important developmental tasks.[6] An epidemiological study of refugee adolescents in Canada[7] found that the prevalence of psychopathology in the refugee group was twice as high compared to a group of Canadian peers.

In their review, Lustig et al.[8] identify anxiety, depression, PTSD, anger, insomnia and related stress reactions as rather common in refugee children and adolescents. However, prevalence of symptoms of distress

is known to fluctuate with contextual factors such as, nationality, trauma exposure and the stage of refugee experience (pre-flight, flight, resettlement). According to the same study, versions of ecological systems theory are often employed to understand the complex interplay of factors which influence the development of children and adolescents in times of war and exodus.[8] These theories describe development as occurring in the dynamic interaction between the individual and environmental systems on different levels (i.e. the society, the child's close community, the family, and individual factors). The individual developmental course is then understood as a result of the interplay of resources and risk factors in these systems during the difficult times of war, flight and resettlement.[9] The review also identifies coping strategies and social relations as important mediators of stress reactions in refugee children.[8] There is however limited research on the association between coping strategies, social support, and subsequent stress reactions in adolescents exposed to war trauma. A search of the literature shows only a handful of studies of war exposed adolescents where coping strategies and/or social support have been used as predictors of traumatic distress.[9-13] Furthermore, their results are often mutually contradicting, and inconsistent with well-established findings from traumatized adult populations.

Traumatic distress and coping strategies

Research has shown that forced migration and war traumatization prompts adaptation efforts and coping activity in the affected refugees.[2,14-16] Problem-focused coping, also known as rational coping, has been suggested to be more effective than emotion-focused and avoidant coping in managing traumatic stress. In fact, emotion-focused and avoidant coping strategies are typically perceived as somewhat maladaptive or ineffective psychological strategies, when it comes to enduring and overcoming trauma.[17,18]

Consistent with the adult trauma populations, Braun-Lewinsohn et al. reported that problem focused coping was negatively linked to general stress reactions in Israeli adolescents who were exposed to prolonged missile attacks.[10] Emotional coping strategies, such as "reference to others" (i.e. seeking social support) and "non-productive" coping were positively linked to distress. A study of Bosnian war exposed adolescents also found that emotional and avoidant coping strategies were associated with a higher risk of PTSD. Furthermore, adaptive coping strategies could not be identified for this group of highly traumatized individuals who have experienced four years of siege in Sarajevo.[9]

Elbedour et al.[11] reported, contrary to the Brawn-Lehwinsohn findings,[10] that low levels of "seeking guidance and support coping" (i.e. low seeking of social support coping) were associated with PTSD in refugee adolescents from the Gaza strip. Also contrary to the expected, in a study on general mental health, disengaged coping strategies were found to protect the psychological well-being of adolescents, who had experienced the war in Bosnia-Herzegovina.[2]

Posttraumatic distress and social support

As the literature review on coping shows, one form of social support, namely social support seeking in times of crises, is studied as a coping strategy. In our view, the perceived availability of social support is subjectively different from the act of active seeking of social support. Social support in this paper is therefore understood as an aspect of the social environment of the young refugees, rather than an aspect of individual cop-

ing. When studied as an aspect of the social environment, social support has been shown to affect the mental health following exposure to war, political violence, and exodus. The effects are double-sided in the sense that social support holds great potential for buffering against psychological distress and alleviating trauma-related strain,[1,15,19] whereas inadequate or lack of support may contribute to the maintenance or aggravation of psychopathological symptoms. In adult populations, a meta-analysis on PTSD risk factors[20] found that individuals, who gave appraisals of either absent or low levels of social support in the aftermath of trauma exposure, displayed higher rates of current PTSD and increased PTSD symptom severity. Furthermore, perceived social support was the second strongest predictor of PTSD risk in this study.

The literature on the association between social support and symptoms of posttraumatic distress in war exposed adolescents is scarce and inconclusive. An American study found that perceived social support from friends and family predicted lower PTSD and depression in Khmer refugee adolescents, who had resettled in the USA many years ago.[12] On the other hand, in the study of recently war exposed adolescents from Sarajevo[9] perceived social support was found to be a protective factor against depression but not PTSD. Similarly, others reported that higher levels of perceived social support were predictive of lower depression scores in war-exposed children from Croatia.[13]

Trauma exposure and PTSD

A growing body of evidence suggests that exposure to repeated, war-related events over longer periods of time has been found to increase the risk of PTSD development and contribute to the maintenance and aggravation of the symptoms.[14,15] A number of studies of refugee adolescents, internally displaced, and unaccompanied minors have consistently found the number of war related traumatic events to be a predictor of PTSD outcome.[6,21-23] Because the studies employ different means of assessing war trauma it is for the time being not possible to identify which war related traumas have the most adverse effects on wellbeing of the refugee youth. One study found personal trauma types (loss, personal life threat, and life threat to significant others) to be associated with PTSD, while general war related events (displacement, etc.) were unrelated to PTSD. In fact in this study, the trauma of "loss" was the strongest predictor of PTSD amongst a vast number of predictors like coping strategies and social support.[9]

Gender and PTSD

The findings about the association between PTSD and gender in war exposed adolescents are also inconclusive. In several studies of different groups like unaccompanied minors, Bosnian refugee adolescents in Slovenia, and Bosnian war exposed adolescents from Sarajevo, female gender has been identified as a risk factor for PTSD.[9,21,22,24,25] On the other hand, this association was not supported in Somalian and Cuban refugee adolescents in the USA, internally displaced and non-displaced war affected youth from Congo, and refugee adolescents from the Gaza strip.[6,11,23,26]

In sum, the findings from the literature on the predictors of PTSD and trauma related distress in adolescent refugees and non-displaced war exposed youth are rather conflicting. For the time being, the indications are that we are unable to identify common predictors of mental health outcomes for war traumatized youth across different contexts. Rather the question being answered in the existing studies is what works

for whom, and under which circumstances. Also, there are too few studies of the association between coping, social support and mental health outcomes in adolescent refugees to allow accumulation of knowledge of active factors in specific stages of the refugee experience.

The aim of the present study was to explore the association between PTSD, a number of contextual factors (change of refugee camps, duration of stay in host country), individual factors (age, gender, traumatization history), perceived social support and coping strategies in adolescent refugees in a specific social environment of refugee settlements in Denmark. In designing the study we had the following hypothesis:

1) The number of war traumas, and female gender were expected be positively associated with PTSD.
2) Personal traumas were assumed to have a stronger positive association with PTSD than the total of experienced traumas.
3) Lower levels of social support during exodus and resettlement were expected to be linked to a presence of PTSD.
4) In accordance with the mainstream literature, avoidant and emotional coping strategies were expected to be associated with a presence of PTSD, while problem focused coping was assumed to be associated with the group without PTSD.

Method

Background of the studied population

The study took place at two Danish-Bosnian boarding schools in Denmark. These schools were created when the refugees from Bosnia and Herzegovina still had temporary living permits. The temporary permits meant that the refugees, some of whom have lived in Denmark up to two and a half years, were housed in refugee camps. They were unable to work in the Danish labour market, and neither children nor adolescents were able to attend Danish schools. The Danish Refugee Aid organized the boarding schools with volunteer Bosnian teachers. The aim was to provide continuation of education for the adolescents in the absence of other educational possibilities.

Only two such schools existed, which were popular amongst the adolescents, as it was an opportunity to escape the refugee camps, where whole families lived in small rooms without any privacy. The boarding schools could at maximum house about 300 students. At times there were waiting lists for admission.

Even though the schools only housed a smaller number of Bosnian refugee adolescents living in Denmark, the students were considered to be a fairly representative sample. The schools had students with different academic skills following educational lines either of standard high school education or technical school education (e.g. auto mechanic and electrician lines). As the political situation changed, the Bosnians refugees were able to seek asylum in Denmark. The study was undertaken in the period when the most students were waiting for the resolution of their asylum applications. The atmosphere amongst the students was generally hopeful. The majority of Bosnian refugees were granted asylum at the time. However, there was also a lot of uncertainty amongst the youth about the future and obstacles of having to start a new life "from scratch".

Participants and Procedure

The participants were recruited at both Bosnian-Danish boarding schools. One hundred and nineteen Bosnian youths between the ages of 15-27 (M = 18.5; SD = 1.8) participated. Most of the participants were in the age range of 17-20 years (85%). Two-thirds

were males, 85% were Muslim, 6% atheist, and 6% reported another religion.

Eighty three percent of the participants had both parents living in Denmark, 8% with only one parent and the rest was unaccompanied. Participants had lived in refugee camps outside Denmark for 7.3 months (SD = 8.6). Their mean length of stay in Danish asylum centres before coming to the boarding schools was 22.8 months (SD = 10.7). They had fled from the civil war in the former Yugoslavia in the 1990s, and their stay in Denmark ranged from 5 to 54 months (M = 29.7, SD = 11.3).

The data in the present study were collected through self-report questionnaires. Seventy two percent of the students at the boarding schools participated. The questionnaires were translated from Danish to Serbo-Croatian, and further adjusted to the Jecavic dialect, using a translation-back-translation procedure. This dialect is spoken and written in the region of Bosnia-Herzegovina and now known as the Bosnian language. The study was approved by the board of the Danish Refugee Aid and conducted according to the ethical guidelines for the Nordic

Table 1. *Direct and indirect exposure to trauma.*

Traumatic Events	Direct Exposure (%)	Indirect Exposure (%)
1. Death threats	49.6	44.5
2. Physical violence (beaten, kicked)[T]	27.7	41.2
3. Psychological harassment	72.3	46.2
4. Rape[T]	3.4	8.4
5. Other forms of sexual abuse[T]	1.7	6.7
6. Held captive[T]	17.6	41.2
7. Loss of close family members[T]	38.7	30.3
8. Loss of friends	65.5	41.2
9. Loss of home	76.5	44.5
10. Loss of possessions	78.2	49.6
11. Home destroyed	33.6	33.6
12. Firing/shelling	74.8	44.5
13. Believed one would die	50.4	27.7
14. Prolonged hunger/thirst	26.9	31.3
15. Killings[T]	9.2	24.4
16. Seen dead or wounded people	54.6	31.9
17. Injuries	35.3	32.8
18. Torture[T]	22.7	25.2
19. Forced labour	16.8	37
20. Ill health without access to medical care	25.2	30.3
21. Not knowing whether family members or friends are alive	61.3	32.8
22. Feeling completely helpless and powerless	65.5	33.6
23. Other	20.2	13.4

T) Signifies trauma types in the Personal Trauma Taxon.

psychologists. The survey was supported by the Danish Refugee Aid.

Measures

The first section of the questionnaire included sociodemographic questions about age, gender, religion, refugee camp internment, and stay at asylum centres.

The Harvard Trauma Questionnaire (HTQ)

Exposure to trauma was reported using a modified version of the HTQ Part I (HTQ-I)[27] which measures lifetime exposure to 23 traumatic war events (see Table 1). It includes both direct trauma exposure and indirect trauma exposure. In the present study the HTQ-I was modified in order to reflect the circumstances that are characteristic of European civil war and ethnic cleansing, for instance, physical violence, psychological harassment, loss of home, forced labour, and death threats. The items "brain wash" and "lack of shelter" were removed. Following the results of the Durakovic-Belko et al. study,[9] a taxon of traumas with more personal content was created. It comprised traumas types: physical violence, rape, other forms of sexual abuse, held captive, loss of close family members, killing, and torture. A personal trauma taxon was made for both witnessed and directly experienced personal trauma types. The HTQ Part IV (HTQ-IV) was used to assess trauma symptoms and PTSD symptomatology. The scale is believed to be sensitive to cultural-specific PTSD symptomatology and was used as an estimate of a PTSD diagnosis as specified in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV).[28] The first 16 items contain the three main clusters of PTSD in DSM-IV: alertness (five items), avoidance (seven items), and reexperiencing (four items). For assessing the presence of PTSD by the HTQ, an algorithm according to DSM-IV criteria for diagnosis of PTSD was applied. According to the algorithm, presence of at least one re-experiencing symptom, at least three avoidance/numbing symptoms and at least two symptoms of alertness, with a score of three or four, are indicative of PTSD. Also, a cut-off score of < 2.5 on the HTQ is estimated to differentiate between clinical and non-clinical presence of PTSD.[29] Both methods were used in the study. The reliability of the HTQ-IV for the present sample was high (α = .92).

The Coping Style Questionnaire (CSQ)

The CSQ was used to assess coping strategies on three subscales: problem-focused (10 items), emotion-focused (nine items) and avoidant (10 items).[30] A duplicate item about faith in God was removed from the emotion-focused coping subscale. Each item was rated on a four-point Likert scale. In the current study the internal consistency of the subscales ranged from modest to satisfactory (rational coping α = .79; emotion-focused coping α = .58; avoidant coping α = .68).

Crisis Support Scale (CSS)

Perceived social support was measured by the CSS which assesses the accessibility or availability of other people, who provide emotional and practical support when required, and who are willing to listen, and help with practical things in times of crises.[30-32] In this study, the CSS comprised 7 items and was used to measure levels of perceived social support during the war (T1), and at the present time (T2). The respondents rated their answers on a seven-point Likert scale. A higher score indicated a higher level of perceived crisis support. The CSS appears to be a reliable and effective instrument for the assessment of social support, mainly by reason of its brevity and the

inclusion of multi-dimensional features of social support. Internal consistencies of the CSS were good in the study (CSS T1 α = .70; CSS T2 α = .80).

Data Analysis

Analyses were conducted using SPSS version 18. Prior to analysis, the data set was screened for errors. The percentage of missing values was acceptable (5.9-17.6%). Thus, the Expectation Maximization algorithm, which has been demonstrated to be an effective method of dealing with missing data,[33] was performed to impute missing data on all standardized scales. We conducted bivariate analyses of probable PTSD diagnosis cases versus non-PTSD cases with each of the variables to identify any significant differences (Chi-square test of independence for categorical variables, and one-way between groups ANOVA for the continuous independent variables). Next, we conducted a binary logistic regression analysis using the variables that were significant in the bivariate analysis.

Results

Trauma Exposure

Statistical analyses showed that 98% of the participants reported direct exposure to at least one traumatic war event. The frequency of direct events ranged from 0-20, and each participant had on average been exposed to nine events (SD = 4.5). The most frequently reported direct exposures were loss of possessions (78%), homelessness (76%), firing or shelling (75%), psychological harassment (72%) and loss of one or more friends (66%; see Table 1). Thirty seven percent did not experience any traumas from the "personal trauma taxon", one third had experienced one personal trauma, and the remaining had experienced more than one.

With respect to total indirect exposure, 68% of the Bosnian youths reported to have witnessed at least one traumatic events (range 0-23 events). The average number of indirect events was 7.5 (SD = 7.2). The most commonly recorded indirect events were loss of possessions (50%), psychological harassment (46%), death threats (45%), homelessness (45%) and firing or shelling (45%; Table 1). Forty percent was not indirectly exposed to any traumas from the "personal trauma taxon", 16% had indirect exposure to one personal trauma, and 44% to more than one. Overall, it could be inferred that most of the participants had many different war related trauma, as each individual on average had been exposed to 17 traumatic events (directly or indirectly). Approximately 60% had directly experienced and witnessed trauma of a more personal kind.

PTSD prevalence

When using the diagnostic algorithm from DSM-IV, 43% of the participants met the criteria for a PTSD diagnosis. Moreover, 14% met the criteria of subclinical PTSD, that is, they were one symptom short of a full PTSD diagnosis. Using the cut-off score for the HTQ, 38% of the youth were found to be in the clinical range for PTSD.

Bivariate Analysis

The bivariate analysis (Table 2) showed no differences between refugee youths with or without PTSD in regard to age, months spent in refugee camps, months spent in asylum centres, or duration of stay in Denmark. Moreover, the mean number of indirect and direct war traumas in total, as well as direct experience to traumas of personal content, did not differ significantly between the two groups. Interestingly enough, adolescents with PTSD had witnessed significantly more personal traumas, than those without PTSD. Gender was the only other significant factor

Table 2. *Descriptive statistics and comparisons between PTSD and non-PTSD participants (N=119).*

Variable	Non-PTSD (n = 68)	PTSD (n = 50)	Test (Chi-square or ANOVA)
	Mean (SD) or n		
Age	18.4 (1.6)	18.5 (2.1)	*ns*
Gender, male/female	50/18	27/23	$\chi^2 = 4.85$*
Months spent in refugee camps	7.5 (9,5)	7.2 (7.5)	*ns*
Months spent in asylum centres	23 (11.5)	22.6 (9.9)	*ns*
Months spent in Denmark	29.9 (11.2)	29.4 (11.5)	*ns*
Direct trauma exposure	9 (4.2)	9.7 (4.8)	*ns*
Indirect trauma exposure	6.5 (6.7)	8.9 (7.7)	*ns*
Direct exposure to severe trauma	1.1 (1.3)	1.4 (1.4)	*ns*
Indirect exposure to severe trauma	1.4 (1.7)	2.3 (2.2)	*F* = 5.96*
Problem-focused coping	11.3 (4.8)	14.9 (4.2)	*F* = 17.91***
Emotion-focused coping	9.6 (3.9)	11.9 (3.9)	*F* = 10.69**
Avoidant coping	9.5 (3.6)	12.5 (5.4)	*F* = 13.54***
Perceived social support (during trauma exposure)	33.6 (5.9)	32.7 (6.2)	*ns*
Perceived social support (present)	36.1 (5.3)	33.6 (7.2)	*F* = 4.63*

PTSD = Posttraumatic Stress Disorder; F = F-ratio; χ^2 = Chi-square.
* $p < .05$. ** $p < .005$. *** $p < .0005$.

between the groups, indicating that girls had a higher prevalence of PTSD.

The analysis also revealed that there was no significant difference between the groups in their reports of perceived social support during the war, but the group with PTSD reported lower levels of perceived social support at present than the group without PTSD. Furthermore, differences were found between the groups relating to their coping activity during the war and the flight on all three coping dimensions.

Logistic Regression Analysis (LRA)

We analysed the data by the means of more stringent analytical methods to confirm the results of the bivariate analysis and its suggestion of links between PTSD, gender, witnessing of personal traumas, perceived present social support, and the three coping strategies. The variables in question were included in a LRA with PTSD or non-PTSD as the dependent variable, and the remaining factors as independent variables. The results of the LRA are summarised in Table 3. In this final analysis, witnessing of personal traumas, perceived social support at present, and emotion-focused coping did not reach statistical significance. Gender was found to be a strong predictor of PTSD risk (OR: .32, $p < .05$), with the female refugee youths exhibiting higher PTSD rates than their male counterparts. Avoidant coping strategies (OR: 1.12, $p < .05$) and problem-focused coping strategies (OR: 1.16, $p < .0005$) also achieved significant predictive power. The association between problem focused coping and PTSD was in the opposite direction

Table 3. *LRA with PTSD as a dependant variable*

Variable	Odds Ratios	95% CI
1. Gender (male)	.37*	.15-.94
2. Perceived social support (at present)	.93	.86-1.00
3. Rational/problem-focused coping	1.17**	1.04-1.31
4. Emotion-focused coping	1.08	.94-1.23
5. Avoidant coping	1.13*	1.01-1.25
6. Indirect severe trauma	1.24	.99-1.56
7. Nagelkerke R2	.36	
8. Cox & Snell R2	.27	

* p < .05. ** p < .005. ***

than hypothesised. The PTSD group had significantly higher scores on the two coping strategies, that is, the PTSD group made more frequent use of both problem-focused and avoidant coping strategies (Table 3).

Discussion

Between 38-43% of the participants met the criteria for a PTSD diagnosis. A high PTSD prevalence of this calibre was somewhat expected in the light of the multiple traumas that these youths had experienced. Even so, the estimated PTSD prevalence is rather high. Studies of asylum seeking unaccompanied minors in European countries yield PTSD prevalence of approximately 20%.[2,21] As being unaccompanied is associated with a number of mental health risk factors[22] the prevalence of PTSD is alarmingly high in this sample with relatively intact family structures. The level of PTSD in this study is comparable to early adolescents and children living in African and Asian refugee camps, where prevalence ranges between 35-75%.[8]

As the HTQ was not validated for Bosnian populations at the time of this study, we cannot be sure of the sensitivity of the instrument. On the other hand, the HTQ had excellent internal consistency in the presents study, and it is the only validated screening instrument for PTSD in the Bosnian language today. The high prevalence of PTSD in the present sample can perhaps be understood in light of the living circumstances of the young Bosnians, which were characterized by a long lasting "stand by" position. A meta analysis of post-displacement factors associated with mental health outcomes for adult and adolescent refugees, points to institutionalised living, and restricted working possibilities as the strongest predictors of poorer mental health outcomes.[34] Both of these were characteristic of the present sample. The asylum centres and the boarding schools were institutionalized accommodation in which the young refugees were waiting for up to two and a half years until they were granted the right to seek asylum. As already mentioned, the refugees were unable to work or go to Danish schools in this period.

Predictors of PTSD

In studies of Bosnian war exposed youth, the Durakovic-Belko et al. study[9] resembles the present study the most both in terms of the participants (Bosnian high school students) as well as the choice of PTSD predictors (trauma exposure, coping and social support). Of course, the main difference is that the adolescents from their study were mostly non-displaced war exposed youth, while our population is living in exile in Denmark. As the discussion will show, the predictors of PTSD in the two studies have also fallen out somewhat differently.

As consistent with the majority of previous research[9,21,22,24,25] female participants were more vulnerable to develop PTSD than

males in this study. Gender constitutes a key variable in research on PTSD rates and accumulated cross-cultural evidence indicates that women develop PTSD at higher rates than men, even when the type,[35] severity, and extent[36] of the trauma is controlled for. This study thus adds to two other identified studies of war exposed Bosnian adolescents, where female gender has been found to be one of the strongest risk factors of PTSD.[9,13]

In contrast to Durakivic-Belko et al.,[9] the single direct exposure to personal trauma could not be linked to PTSD in the present group. The same was the case with the total amount of witnessed and directly experienced trauma. In the final analyses, the association of trauma exposure and PTSD was overruled by the predictive power of coping strategies. This is somewhat puzzling, especially in light of the existing studies with war exposed adolescents, which point to a strong link between trauma exposure and PTSD. However, the Durakovic-Belko et al. study[9] is to our best knowledge the only existent study which evaluated the effect of coping strategies on PTSD as well as trauma exposure in war exposed adolescents. As the difference between our two studies mainly pertains to the status of participants as non-refugee vs. refugee, an explanation for the salience of coping strategies in the current sample could be the uncertain living circumstances of the refugee youth, indicating that they were more concerned with coping with the difficult present situation, than coping with past trauma.

An unexpected finding of our study was that both problem-focused and avoidant coping strategies were related to PTSD. Once again, the seemingly ineffective coping strategies can be understood in light of their life circumstances. Their "stand by" circumstances in terms of asylum meant that they had little impact on life decisions for a long time. There was therefore no real difference between the outcomes of different coping strategies. They were equally ineffective, and therefore equally symptom related. Jones reported that Bosnian adolescents who exhibited an engaged coping style had more PTSD symptoms compared to the adolescents who exhibited a disengaged /detached coping style, characterized by a lack of emotional association with the traumatic experiences.[2] The youth who engaged more, were more aware of the threats and problems in their present lives, and therefore generally more fearful and anxious. Thus, the association between more coping and more PTSD symptoms, found in this study, could be mediated by a greater awareness of helplessness and the problematic life circumstances.

A seemingly concerning trend in the literature on Bosnian war exposed adolescents is that adaptive coping strategies are seldom reported for this group. However, as there are only few studies and most have been conducted right after the ending of the war, and during the asylum seeking period for the refugees, they could reflect the chaotic characteristics of the adolescents' close environment and society rather than their inability to cope effectively. Coping strategies in adolescence are also expected to change rapidly as the young individual becomes more aware of the complexity of the social world, and especially as the opportunities in the environment change. In a longitudinal study of Khmer adolescents 12 years after their arrival in the USA, it is reported that they exhibited remarkable good adaptation in spite of their high PTSD symptom levels.[37]

Finally, like in the Durakovic-Belko et al. study[9] study, the association between social support and PTSD was not found in our sample. It may be that social support in general, has a stronger association with depression than PTSD in war traumatized ado-

lescents. This has already been reported in two previous studies of Bosnian war exposed adolescents.[9,13] Having said that, little is known about the precise mechanisms, which underlie the association between social support and PTSD. More studies are needed to unravel the contribution of social support on depression and PTSD in traumatized adolescents, especially since the two disorders are highly comorbid and share some of the same symptoms.

In sum, the present study shows alarmingly high levels of PTSD symptoms in a non-clinical sample of refugee adolescents in Denmark. Even though female gender was found to be the strongest predictor of PTSD (as in other comparable studies), other predictors had somewhat unexpected associations with PTSD. The salience of coping strategies as significant predictors, in comparison to extensive traumatization of personal content and social support was remarkable. The most credible explanation seems to be that the youth were still trying to cope with the uncertainty of their situation, and have not begun to process the traumatic experiences from the war.

The situation of the refugees from Bosnia Herzegovina in Denmark was special. The Danish government chose to take in 20,000 Bosnian refugees when most European countries had closed their borders to refugees from the Balkans. At the same time, the expectation was that the refugees would repatriate, so there was a commitment to treat their asylum applications only if the war had not ended in two years. This meant that many people found refuge in Denmark when it was most needed, but they were also stuck in a very uncertain situation for a long time, without the possibility to seek asylum.

It seems that this uncertainty, which was grounded at the societal and political levels, could have had negative consequences for the mental health of the refugee adolescents, where protective factors such as social support lost their salience, and coping was associated with more distress. Of course, since there are no other studies of refugee youth in comparable situations, we cannot be sure of this association. Even so, there needs to be more awareness of possible adverse consequences of such long "stand by" arrangements.[38] If these situations cannot be avoided because of other societal concerns, there should be awareness on the societal level of the need for treatment and other actions, which can ameliorate these negative effects. Research suggests that youths, who have been exposed to multiple war traumas and suffer from PTSD, are at risk of developing comorbid psychiatric disorders, substance abuse as well as academic and behavioural problems.[12]

Limitations

It is important to recognize, that none of the applied measures were validated for use in Bosnian at the time of the study. Also, one item was removed from the Coping Style Questionnaire. This means that we cannot be quite sure that the translated measures have retained their original psychometric properties. As we cannot wait to do research in refugee populations until all the measures that we need have undergone a thorough validation, we put our faith in good translations of already well-established measures. Values of internal consistency are reported for each measure and can be compared to the original validation values of the measures in question.

This is a small study of a specific sample of Bosnian refugee adolescents in Denmark. The conclusions can therefore not easily be generalized to other adolescent refugee populations. Even so, as the review of the literature on predictors of PTSD in war

exposed youth shows, we need many more studies of specific contexts, so that we can begin to understand what works for whom, and under which circumstances.

References

1. Ehntholt KA, Yule W. Practitioner review: assessment and treatment of refugee children and adolescents who have experienced war-related trauma. J Child Psychol Psychiatry 2006;47:1197-210.
2. Jones L. Adolescent understandings of political violence and psychological well-being: a qualitative study from Bosnia Herzegovina. Soc Sci Med 2002;55:1351-71.
3. United Nations High Commissioner for Refugees. UNHCR Global Trends 2010. United Nations High Commissioner for Refugees, 2011. www.unhcr.org/4dfa11499.html.
4. Roth G, Ekblad S, Agren H. A longitudinal study of PTSD in a sample of adult mass-evacuated Kosovars, some of whom returned to their home country. Eur Psychiatry 2006;21:152-9.
5. Turner SW, Bowie C, Dunn G, Shapo L, Yule W. Mental health of Kosovan Albanian refugees in the UK. Br J Psychiatry 2003;182:444-8.
6. Ellis B, MacDonald HZ, Lincoln AK, Cabral HJ. Mental health of Somali adolescent refugees: the role of trauma, stress, and perceived discrimination. J Consult Clin Psychol 2008;76:184-93.
7. Tousignant M, Habimana E, Biron C, Malo C, Sidoli-LeBlanc E, Bendris N. The Quebec Adolescent Refugee Project: psychopathology and family variables in a sample from 35 nations. J Am Acad Child Adolesc Psychiatry 1999;38:1426-32.
8. Lustig SL, Kia-Keating M, Knight WG, Geltman P, Ellis H, Kinzie JD, et al. Review of child and adolescent refugee mental health. J Am Acad Child Adolesc Psychiatry 2004;43:24-36.
9. Durakovic-Belko E, Kulenovic A, Dapic R. Determinants of posttraumatic adjustment in adolescents from Sarajevo who experienced war. J Clin Psychol 2003;59:27-40.
10. Braun-Lewensohn O, Sagy S, Roth G. Coping strategies among adolescents: Israeli Jews and Arabs facing missile attacks. Anxiety Stress Coping 2010;23:35-51.
11. Elbedour S, Onwuegbuzie AJ, Ghannam J, Whitcome JA, Abu Hein F. Post-traumatic stress disorder, depression, and anxiety among Gaza Strip adolescents in the wake of the second Uprising (Intifada). Child Abuse Negl 2007;31:719-29.
12. Berthold MS. War traumas and community violence: Psychological, behavioral, and academic outcomes among Khmer refugee adolescents. J Multicultural Social Work 2000;8:15-46.
13. Brajsa-Zganec A. The long-term effects of war experiences on children's depression in the Republic of Croatia. Child Abuse Negl 2005;29:31-43.
14. Goodman JH. Coping with trauma and hardship among unaccompanied refugee youths from Sudan. Qual Health Res 2004;14:1177-96.
15. Paardekooper B, de Jong JT, Hermanns JM. The psychological impact of war and the refugee situation on South Sudanese children in refugee camps in Northern Uganda: an exploratory study. J Child Psychol Psychiatry 1999;40:529-36.
16. Veer Vd G. Counseling and therapy with refugees: psychological problems of victims of war, torture and repression. Chichester: John Willey, 1992:1-275.
17. Folkman S, Moskowitz JT. Positive affect and the other side of coping. Am Psychol 2000;55:647-54.
18. Roger D, Jarvis G, Najarian B. Detachment and coping - the construction and validation of a new scale for measuring coping strategies. Pers Indiv Differ 1993;15:619-26.
19. Charuvastra A, Cloitre M. Social bonds and posttraumatic stress disorder. Annu Rev Psychol 2008;59:301-28.
20. Ozer EJ, Best SR, Lipsey TL. Predictors of posttraumatic stress disorder and symptoms in adults: a meta-analysis. Psychol Bull 2003;129:52-73.
21. Derluyn I, Broekaert E. Different perspectives on emotional and behavioural problems in unaccompanied refugee children and adolescents. Ethnic Health 2007;12:141-62.
22. Hodes M, Jagdev D, Chandra N, Cunniff A. Risk and resilience for psychological distress amongst unaccompanied asylum seeking adolescents. J Child Psychol Psychiatry 2008;49:723-32.
23. Mels C, Derluyn I, Broekaert E, Rosseel Y. The psychological impact of forced displacement and related risk factors on Eastern Congolese adolescents affected by war. J Child Psychol Psychiatry 2010;51:1096-104.
24. Huemer J, Karnik N, Voelkl-Kernstock S, Granditsch E, Plattner B, Friedrich M, et al. Psychopathology in African unaccompanied refugee minors in Austria. Child Psychiatry Hum Dev 2011;42:307-19.
25. Slodnjak V, Kos A, Yule W. Depression and parasuicide in refugee and Slovenian adolescents. Crisis 2002;23:127-32.
26. Rothe EM, Lewis J, Castillo-Matos H, Martinez O, Busquets R, Martinez I. Posttraumatic stress

disorder among Cuban children and adolescents after release from a refugee camp. Psychiatr Serv 2002;53:970-6.
27. Mollica RF, Caspi-Yavin Y, Bollini P, Truong T, Tor S, Lavelle J. The Harvard Trauma Questionnaire. Validating a cross-cultural instrument for measuring torture, trauma, and posttraumatic stress disorder in Indochinese refugees. J Nerv Ment Dis 1992;180:111-6.
28. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4 ed. Washington, DC: APA, 1994.
29. Ichikawa M, Nakahara S, Wakai S. Cross-cultural use of the predetermined scale cutoff points in refugee mental health research. Soc Psychiatry Psychiatr Epidemiol 2006;41:248-50.
30. Joseph S, Williams R, Yule W. Crisis support, attributional style, coping style, and posttraumatic symptoms. Pers Indiv Differ 1992;13:1249-51.
31. Elklit A, Pedersen SS, Jind J. The Crisis Support Scale: psychometric qualities and further validation. Personality and Individual Difference 2000;31:1291-302.
32. Joseph S, Andrews B, Williams R, Yule W. Crisis support and psychiatric symptomatology in adult survivors of the Jupiter cruise ship disaster. Br J Clin Psychol 1992;31(Pt 1):63-73.
33. Bunting BP, Adamson G, Mulhall PA. Monte Carlo examination of MTMM model with planned incomplete data structures. Structural Equation Modeling 2002;9:369–89.
34. Porter M, Haslam N. Predisplacement and postdisplacement factors associated with mental health of refugees and internally displaced persons: a meta-analysis. JAMA 2005;294:602-12.
35. Tolin DF, Foa EB. Sex differences in trauma and posttraumatic stress disorder: a quantitative review of 25 years of research. Psychol Bull 2006;132:959-92.
36. Zlotnick C, Zimmerman M, Wolsdorf BA, Mattia JI. Gender differences in patients with posttraumatic stress disorder in a general psychiatric practice. Am J Psychiatry 2001;158:1923-5.
37. Sack WH, Him C, Dickason D. Twelve-year follow-up study of Khmer youths who suffered massive war trauma as children. J Am Acad Child Adolesc Psychiatry 1999;38:1173-9.
38. Schwarz-Nielsen KH, Elklit A. An evaluation of the mental status of rejected asylum seekers in two Danish asylum centers. Torture 2009;19:51-9.