

## POSTTRAUMATIC STRESS DISORDER IN BOSNIAN INTERNALLY DISPLACED AND REFUGEE ADOLESCENTS FROM THREE DIFFERENT REGIONS AFTER THE 1992-1995 WAR IN BOSNIA AND HERZEGOVINA

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**Objective** - To estimate the frequency, type and severity of psychological trauma, the severity of post-traumatic stress symptom clusters and the prevalence of post-traumatic stress disorder (PTSD) among Bosnia-Herzegovina (BH) refugee and internally displaced adolescents after the 1992-1995 war.

**Subjects and Methods** - The sample of 217 pupils (106 females) aged of  $15.1 \pm 2.1$  years consisted of three groups of participants originating from different geographical regions of north-eastern BH: Srebrenica (n=69), Zvornik (n=79), and Bijeljina (n=69), who were exposed to war traumas in the 1992-1995 war and were forced to leave their homes and property throughout the war and after it. The war trauma experiences, PTSD symptom severity and PTSD prevalence in the adolescents were evaluated using the Bosnia-Herzegovina version of the Harvard Trauma Questionnaire (HTQ).

**Results** - The severity level of PTSD symptoms and social dysfunction was most severe in Srebrenica, then in Zvornik and finally in the Bijeljina group. The prevalence of PTSD differed statistically significantly between the Srebrenica group (73.9%), the Zvornik group (60.8%) and the Bijeljina group of respondents (47.6%) ( $\chi^2=9.854$ ,  $df=2$ ,  $p=0.007$ ).

**Conclusions** - There were regional variations in the war in Bosnia-Herzegovina. Refugee and internally displaced adolescents suffered very frequently from PTSD 3.5 years after war. The most severe war trauma was suffered by in surviving adolescents from Srebrenica, then Zvornik and finally from Bijeljina. The PTSD prevalence is highly reported and significantly differed between the groups.

**Keywords:** Bosnia-Herzegovina ■ Adolescents ■ Refugees ■ Exile ■ PTSD

## Introduction

The population of Bosnia and Herzegovina (BH) experienced one of the most horrifying wars seen in Europe at the end of the 20th century during the 1992-1995 war (1) characterized by massive destructions, ethnic cleansing, rape and genocide (2). Bosnian Genocide was a brutal campaign of ethnic cleansing — in which one million Bosniaks were displaced; half a million permanently removed from their ancestral land, and 65,000 to 75,000 Bosniak civilians and poorly armed defenders were killed during the 1992-95 international conflict that took place on the territory of Bosnia-Herzegovina. The Bosnian Genocide was characterized by the policy of the systematic rape of Bosniak women and girls, the horrific and prolonged siege and shelling of Bosniak cities, starvation and terrorization of the Bosniak population in the besieged enclaves and the targeted destruction of Bosniak culture and history (3).

There were regional variations in the warfare. The most severe war trauma was suffered by the surviving civilians with children from Srebrenica, Sarajevo, Zvornik and Teočak (1, 4-6). The war broke out on 31 March 1992, in Bijeljina with the massacre of Bosniak civilians by a paramilitary group. The Research and Documentation Center in Sarajevo reports that some 1,040 people were killed, almost all victims, Bosnian Muslim civilians – women, children, and elderly men – in the town of Bijeljina in northeastern Bosnia near the border with Serbia, during April-May 1992, more than three years before the Srebrenica genocide (7). The second Bosnian city that was forcefully taken over by the paramilitary forces supported by the Yugoslav Army (JNA) was Zvornik. The Zvornik massacre refers to the killing of 700-900 Bosniaks as well as the ethnic cleansing of 40,000 in the first days of the Bosnian war, more than three years before the Srebrenica genocide. The Research and Documentation Center in Sarajevo has established a list of

4,127 missed or killed persons in the Zvornik area, which makes it the fifth largest event in the war in terms of the death toll, after the Siege of Sarajevo, the Srebrenica massacre, the Siege of Bihać and the Prijedor massacre (3). The fall of the Bosniak-populated, the eastern Bosnian enclave of Srebrenica on July 11, 1995, became a significant event that fundamentally changed the conflict dynamics and enhanced the prospects for peace. The fall of Srebrenica was the darkest moment in international involvement in Bosnia (8). Despite the fact that Srebrenica was a United Nations (UN) safe zone, the murder of 7,000-8,000 Bosniak men was not prevented. Some were killed after surrendering, believing the UN would protect them. Others were hunted down while attempting to escape into Bosnian government-held territory. Some committed suicide, unable to endure the harrowing trek to safe ground (8). After the Dayton Peace Accord in November 1995 was signed in Paris, the following month, the war ended. 'Loss of place', acute and chronic trauma, family disruption and problems of family reunification have become issues of concern (9). All Srebrenica adolescents survived a very severe humanitarian disaster, being besieged without any normal life together with the danger of the war they were exposed to, together with their families (10). After separation from the men, these adolescents were transported in crowded trucks and buses, together with their mothers, old men and other children to the Dubrave airport close to Tuzla. Among the more than 15,000 displaced persons from the Srebrenica enclave, the field emergency services had to deal with various ailments in these exhausted people. Among the children the most dominant were high Impact Events Scale (IES) scores and a high degree of distress (11), respiratory disease and neglected skin infections (12).

In our research, some of the adolescents were in the process of repatriation to their home country after a certain period of life in exile (1995-1998), and another part of the

investigated group remained in Bosnia and Herzegovina during and after the war as internally displaced persons (IDP-s), without the possibility of returning to their place of origin despite the end of the war. Little is known about the impact of modern warfare on children. Together with adults, many children witnessed and/or were exposed to almost all the war-related experiences (13). The majority had faced separation from family, bereavement, close contact with the war and combat and extreme deprivation (5, 14).

In this study, we analyzed the frequency, type and severity of trauma experiences survived, the severity of PTSD cluster symptoms and social dysfunction, and the PTSD prevalence in Bosnian adolescents who survived the 1992-1994 BH war from three different regions: Srebrenica Zvornik and Bijeljina. We compared Srebrenica adolescents with their peers from another two geographical positions: Zvornik and Bijeljina, whose inhabitants survived different catastrophic war conditions at the very beginning of the war; some of whom were exiled (1992-1998) and some were internally displaced, but did not survive the Srebrenica disaster.

## Subjects and Methods

Data collection took place in June 1999 in the classrooms of the adolescents' schools, with the written permission of the Tuzla Canton Ministry for Culture, Sport and Education. The study was ethically approved by the Human Research Ethics Board of the Tuzla University Clinical Center. During data collection, only the author was with the examinees, without the school authorities.

### Subjects

The sample consisted of 217 elementary and secondary school pupils of early and middle adolescence (106 females) aged of  $15.1 \pm 2.1$  years, who survived the Srebrenica, Zvornik and Bije-

ljina massacres. The mean age of the examined participants when they were forced to leave their homes was  $8.4 \pm 2.1$  years for Srebrenica,  $8.5 \pm 2.4$  years for Zvornik and  $8.2 \pm 2.7$  years for the Bijeljina group ( $F=0.349_{(2,214)}$ ;  $p=0.706$ , ANOVA).

The participants were chosen from available IDP-s and repatriated refugee pupils in one public elementary and seven secondary schools, who agreed to participate voluntarily; with the verbal permission of their parents, after they had been informed and asked to participate in this research. The sample was divided into three groups of participants originated from different geographical regions from north-eastern BH: Srebrenica ( $n=69$ ; 36 girls), Zvornik ( $n=79$ ; 35 girls), and Bijeljina ( $n=69$ ; 37 girls) with no significant differences between the groups regarding the adolescents' gender and age.

The selection criteria were: a) participants had to be originally from the three targeted north-eastern BH geographical regions (Srebrenica, in the mountainous part of BH; Zvornik, in the eastern part of BH on the right bank of the River Drina, the natural border between BH and Serbia, and Bijeljina, in the north-eastern part of the plains of BH) with different histories in the recent war, b) adolescents had to have experienced war conditions at the beginning of the BH war, when they were forced to leave their homes under life threatening conditions, c) adolescents were prevented from returning to their homes, which they had to leave as their lives were in danger, and they were still unable to return.

### Outcome Measures

We used a socio-demographic question-naire to collect information about: age, gender, displacement status, type of settlement, family social and financial status, and loss of family member/s. It was designed specifically for this study. To evaluate traumatic events, the severity of trauma and the presence of PTSD, as well as the PTSD cluster symptom severity, the culturally modified Harvard Trauma Questionnaire (HTQ), Bosnia and Herzegovina Version for

civilians (15, 16) was used. For every traumatic event identified, the respondents were asked: “How do you feel, when you remember that?” and a scale of 1-5 was used to evaluate the severity of the traumatic experience: 0 – No feeling; 1- slightly upset; 2- somewhat upset; 3- moderately upset; 4 – seriously upset and 5 – extremely seriously upset (17).

Another part of the self-assessment questionnaire contained a 16-item scale for measuring PTSD symptoms and the presence of PTSD. The items corresponded to the DSM IV symptoms for PTSD assessment and yielded a total score and three-symptom cluster subscale scores. The scale for each question includes four categories of response (“Not at all,” “A little,” “Quite a bit,” “Extremely,” rated 1 to 4, respectively). The reliability and validity of HTQ for PTSD symptoms has been found to be high, at 0.98 (16).

### Statistical analysis

Collected data were statistically analyzed using the Statistical Package for Social Sciences, version 10.0 (SPSS, Chicago, IL, USA).

Statistical tests included t-test, ANOVA, post hoc Tukey Honestly Significant Difference (HSD) test, and Chi-square ( $\chi^2$ ) test.  $P < 0.050$  was considered to be statistically significant.

## Results

### Socio-demographic data and exposure to traumatic events

There were no significant differences between the Srebrenica and Zvornik regions regarding the IDP status of adolescents ( $\chi^2$ -square=2.62,  $p=0.106$ ), while Srebrenica and Zvornik adolescents were significantly more often IDP-s compared with Bijeljina adolescents separately ( $\chi^2$ -square=31.672,  $p < 0.001$ ;  $\chi^2$ -square=18.576,  $p < 0.001$ , respectively) (Table 1). Adolescents from Srebrenica and Zvornik lived significantly more often in collective settlements; they experienced separation from parent/s significantly more often than their peers from Bijeljina. Loss of the father and loss of immediate and/or extended family member/s were found most frequently among adolescents from Srebrenica, more than from Zvornik or finally from Bijeljina (Table 1).

**Table 1** Socio-demographic data for 217 Bosnian adolescents from the Srebrenica, Zvornik and Bijeljina regions who were refugees and internally displaced persons

| Socio-demographic characteristics                             | Prewar residence                             |   |   | $\chi^2$ square | p*     |
|---|--|---|---|-----------------|--------|
|   | Srebrenica<br>(n=69)<br>n (%) of adolescents | Zvornik<br>(n=79)<br>n (%) of adolescents | Bijeljina<br>(n=69)<br>n (%) of adolescents |                 |        |
| Internally displaced persons during and after the war         | 49 (71.0)                                    | 46 (58.2)                                 | 16 (23.2)                                   | 34.071          | <0.001 |
| Refugees abroad during the war, and repatriated after the war | 20 (29.0)                                    | 33 (41.8)                                 | 53 (76.8)                                   | -               | -      |
| Inadequate residence  | 43 (62.3)                                    | 44 (55.7)                                 | 35 (50.7)                                   | 1.898           | 0.387  |
| Collective settlements  | 38(55.1)                                     | 44 (55.7)                                 | 23 (33.3)                                   | 9.890           | 0.042  |
| Inadequate and unsafe neighborhood                            | 30 (43.5)                                    | 33 (41.8)                                 | 22 (31.9)                                   | 2.299           | 0.317  |
| Separation from parent/s                                      | 34 (49.3)                                    | 33 (41.8)                                 | 17 (24.6)                                   | 9.138           | 0.009  |
| Poor financial means  | 51 (73.9)                                    | 46 (58.2)                                 | 42 (60.9)                                   | 4.381           | 0.112  |
| Extreme poverty   | 10 (14.5)                                    | 5 (6.3)                                   | 9 (13.0)                                    | 2.900           | 0.235  |
| No social support   | 48 (69.6)                                    | 56 (70.9)                                 | 51 (73.9)                                   | 2.698           | 0.610  |
| Loss of father  | 30 (43.5)                                    | 23 (29.1)                                 | 4 (5.8)                                     | 25.812          | <0.001 |
| Loss of immediate or extended family member (s)               | 34 (45.5)                                    | 31 (39.2)                                 | 12 (17.4)                                   | 16.086          | <0.001 |

\*df=2.

Srebrenica and Zvornik participants survived significantly more: “escaping from life threatening events”, “lost father in the war”, “father killed by enemy”, “shelling very close to me”, “close relatives killed by enemy” and “starving” than those from Bijeljina (Table 2). Srebrenica participants survived significantly more “escaping from life threatening events”, “lost father in the war”, “shelling very close to me”, “close relatives killed

by enemy” and “starving” than those from Zvornik, while Zvornik participants survived significantly more often “father killed by enemy” than both those from Srebrenica and Bijeljina (Table 2). On the other hand Bijeljina participants reported significantly more frequent traumatic experiences associated with acculturation and repatriation than those from both Srebrenica and Zvornik (Table 2).

**Table 2** Frequencies of traumatic experiences in 217 internally displaced and refugee adolescents from Bosnia-Herzegovina from three geographical regions: Srebrenica, Zvornik and Bijeljina

| Traumatic experiences survived in the war                 | Srebrenica (n=69)            | Zvornik (n=79) | Bijeljina (n=69) | $\chi^2$ test | p*     |
|---|------------------------------|----------------|------------------|---------------|--------|
|   | Prewar place of living n (%) |                |                  |               |        |
| Unwillingly left our home                                 | 59 (85.5)                    | 63 (79.7)      | 55 (79.7)        | 1.045         | 0.593  |
| Forcedly expelled from own home (house)                   | 49 (71.0)                    | 57 (72.2)      | 61 (88.4)        | 1.915         | 0.384  |
| Escaping from life threatening events                     | 54 (78.3)                    | 53 (67.1)      | 39 (56.5)        | 7.409         | 0.025  |
| Running to a neighbor's basement                          | 21 (30.4)                    | 23 (29.1)      | 13 (18.8)        | 2.914         | 0.233  |
| Lost father in the war                                    | 30 (43.5)                    | 23 (29.1)      | 4 (5.8)          | 25.812        | <0.001 |
| My father was killed                                      | 16 (23.2)                    | 26 (39.2)      | 5 (7.3)          | 14.437        | 0.001  |
| My father was maltreated by enemy soldiers in front of me | 29 (42.0)                    | 33 (41.8)      | 20 (29.0)        | 3.336         | 0.186  |
| Shelling very close to me                                 | 39 (56.5)                    | 33 (41.8)      | 16 (23.2)        | 15.978        | <0.001 |
| Death of grandfather                                      | 15 (21.7)                    | 17 (21.5)      | 12 (17.4)        | 0.555         | 0.758  |
| Killing of close persons (aunt, uncle..)                  | 34 (49.3)                    | 31 (39.2)      | 12 (17.4)        | 16.086        | <0.001 |
| Mother crying   | 20 (29.0)                    | 20 (25.3)      | 17 (24.6)        | 0.395         | 0.821  |
| Capture of my family                                      | 8 (11.6)                     | 13 (16.5)      | 7 (10.2)         | 1.459         | 0.482  |
| Separation from my friends and cousins                    | 54 (78.3)                    | 59 (74.9)      | 51 (73.9)        | 0.407         | 0.816  |
| Our house was attack by gunfire/shelling                  | 24 (34.8)                    | 23 (29.1)      | 16 (23.2)        | 2.251         | 0.324  |
| Separation from my family                                 | 45 (65.2)                    | 51 (64.6)      | 40 (58.0)        | 0.963         | 0.618  |
| Extreme fear  | 35 (50.7)                    | 39 (49.4)      | 28 (40.6)        | 1.704         | 0.427  |
| People killed   | 29 (42.0)                    | 23 (29.1)      | 17 (24.6)        | 5.224         | 0.173  |
| Starving  | 24 (34.8)                    | 23 (29.1)      | 7 (10.2)         | 12.392        | 0.002  |
| Life in a foreign country, language problems              | 13 (18.8)                    | 15 (19.0)      | 32 (46.4)        | 17.736        | <0.001 |
| Severe sorrow in collective settlement(s)                 | 28 (40.6)                    | 28 (35.4)      | 28 (40.6)        | 0.559         | 0.756  |
| Life in a small room in a foreign country                 | 11 (15.9)                    | 11 (13.9)      | 30 (43.5)        | 21.228        | <0.001 |
| Return to homeland  | 7 (10.2)                     | 9 (11.4)       | 20 (29.0)        | 11.275        | 0.004  |
| Difficulties after returning to homeland                  | 9 (13.0)                     | 11 (13.9)      | 21 (30.4)        | 8.812         | 0.012  |
| Maltreatment in school from peers                         | 10 (14.5)                    | 9 (11.4)       | 18 (26.1)        | 6.091         | 0.048  |

\*df=2

### Severity of traumatic experiences, PTSD symptoms and social dysfunction

The mean level of traumatic experiences (range 0-5) did not significantly differ between the Srebrenica, Zvornik and Bijeljina groups. The level of PTSD symptom severity (range 1-4) significantly differed between the three groups. The most severe PTSD clusters of symptoms: re-experience, avoidance and hyper-arousal and severity of social dysfunction was in Srebrenica, then in Zvornik and finally in the Bijeljina group (Table 3). After applying the post hoc Tukey Honestly Significant Difference (HSD) test we found that there were significant differences only between Srebrenica and Bijeljina groups in the clusters of re-experiences ( $p=0.001$ ), and avoidance symptoms ( $p=0.048$ ), and in total PTSD symptoms ( $p=0.003$ ).

### PTSD

In the whole sample, 132 (60.8%) of 217 participants reported symptoms that meet DSM-IV criteria for PTSD; in the Srebrenica group 51 (73.9%) of 69 reported significantly more PTSD prevalence than Zvornik 48 (60.8%) of 79, and Bijeljina group 33 (47.8%) of 69 participants ( $\chi^2=9.854$ ,  $p=0.007$ ). Between Srebrenica and Zvornik group, and between Zvornik and Bijeljina group prevalence of PTSD did not differ

significantly ( $\chi^2=2.877$ ,  $p=0.09$ ,  $\chi^2=2.487$ ,  $p=0.115$ , respectively), but Srebrenica adolescents reported significantly more often PTSD than their peers from Bijeljina group ( $\chi^2=9.857$ ,  $p=0.002$ ).

### Discussion

The examined BH adolescents are a multi-traumatized group (14, 18). Our study showed that in all three groups, regardless of geographical region, the adolescents had been exposed to many different severely traumatic experiences in the war and reported a high level of traumatization more than three years after the war (1, 4-6, 17, 19). All three groups demonstrated persistence of psychological symptoms, indicating the severity and long-term nature of the problems (4, 20). Traumatic symptoms are related to harm avoidance personality traits (21). Certain war experiences were also associated with greater symptomatology. There were regional variations in the warfare (1, 2, 3, 7). The prevalence and severity of traumatic experiences were significantly related to the region of their pre-war residence, because of the different character of the outbreak of the war in each part of BH. However, adolescents from the region of Srebrenica and Zvornik reported a significantly higher prevalence and severity of war

**Table 3** Severity of traumatic experiences, stress level and PTSD symptoms in 217 internally displaced and refugee adolescents from Bosnia-Herzegovina from three geographical regions: Srebrenica, Zvornik and Bijeljina

| Traumatic experiences and PTSD symptom severity according to the DSM-IV criteria | Prewar residence |               |               | F(2-214) | p*    |
|--|------------------|---------------|---------------|----------|-------|
|  | Srebrenica       | Zvornik       | Bijeljina     |          |       |
|  | Mean $\pm$ SD    |               |               |          |       |
| Traumatic experiences  | 4.4 $\pm$ 0.9    | 4.3 $\pm$ 1.0 | 4.0 $\pm$ 1.1 | 2.386    | 0.094 |
| Re-experience  | 2.7 $\pm$ 1.4    | 2.3 $\pm$ 1.3 | 1.8 $\pm$ 1.2 | 6.680    | 0.002 |
| Avoidance  | 2.4 $\pm$ 1.3    | 2.0 $\pm$ 1.3 | 1.9 $\pm$ 1.4 | 3.298    | 0.039 |
| Hyperarousal   | 2.7 $\pm$ 1.5    | 2.2 $\pm$ 1.4 | 2.2 $\pm$ 1.4 | 3.297    | 0.039 |
| Level of social dysfunction  | 2.3 $\pm$ 1.0    | 2.2 $\pm$ 1.1 | 1.9 $\pm$ 0.9 | 3.268    | 0.040 |
| Total PTSD symptoms  | 2.5 $\pm$ 1.3    | 1.9 $\pm$ 1.3 | 1.7 $\pm$ 1.2 | 5.557    | 0.004 |

\*ANOVA



experiences. The scale and severity of these traumatic experiences appear to have been greater than those reported using a similar survey instrument for war-affected children in similar studies (14, 22, 23).

We found that adolescents from Srebrenica and Zvornik, after surviving the initial war experiences in 1992, stayed in their homeland significantly more and survived additional traumatic exposure to the war as IDP-s in the so called "free territory", while a significantly smaller number of adolescents from the same region were exiled out of Bosnia-Herzegovina during and after the war, compared with their peers from Bijeljina (5). Adolescents from Srebrenica and Zvornik experienced separation from their parent/s significantly more often than their peers from Bijeljina. Loss of their father and loss of immediate and/or extended family member/s were more frequent among adolescents from Srebrenica than from Zvornik and finally from Bijeljina (17, 24-26). Srebrenica and Zvornik participants survived significantly more war related tragic experiences, while participants from Bijeljina reported traumatic experiences significantly more frequently related to the process of exile and repatriation (5, 14, 27). Srebrenica participants survived significantly more "loss of father in the war" than their peers from Zvornik and Bijeljina, while Zvornik participants survived significantly more often "father killed by enemy" than both those from Srebrenica and Bijeljina (24-26). Our findings are much higher than Papageorgiou et al. found in their research amongst Bosnian refugee children (24). Geltman et al. (28) found 71% of 31 Bosnian refugee children that experienced the death of a close friend(s) or relative(s); Husain et al. (25) reported that 66% of 521 Sarajevo children lost a member family; in our previous study (17) we found 61.9% of 239 adolescents lost family members (28, 29).

PTSD prevalence differed significantly between all three groups, but when we compared the groups in couples we found that the Srebrenica group did not differ significantly to Zvornik, and the Zvornik group did not differ when compared with the Bijeljina group. The prevalence of PTSD in the Srebrenica group was only significantly higher than in the Bijeljina respondents. PTSD prevalence was higher in all three groups than in other studies (30) but it was less than in the study by Goldstein et al. (14). Youngsters who were forced to leave their homes with or without their complete families were likely to have had particularly harsh war experiences. Fighting without classic limitations to the battle field and the large numbers of families displaced by the war suggests that the findings from this study are likely to reflect the experience of a large population of Bosnian children and adolescents. It may be considered as a general characteristic of a society at war (31).

This study confirms previous research that has shown that internally displaced and refugee children and adolescents may be particularly traumatized (14, 20). The results of this study document and extend our understanding of the relatively acute effects of war on young BH citizens in the midst of post war conflicts, and thus may be viewed differently from studies performed outside areas of conflict (14) and immediately post conflict, where living conditions are not normal and conditions for real and complete return to their own prewar property was not achieved (5, 6, 17).

It could be particularly helpful if we had an assessment of the children's status before exposure to war trauma or if we investigated a not displaced control sample (14) in terms of a more real assessment of the impact of traumatic wartime experiences on the psychosocial conditions observed in our study, but this proved impossible under the

conditions of total and unexpected war (27).

In this study we cannot say if the reported PTSD symptoms were the result of war traumatization, postwar transition, and the unstable political and economic environment, acculturation in exile or acclimatization during repatriation (5, 6). This sample cannot be followed up perceptively because of various forms of actual and perspective migration and new resettlement in their original settlements which are unpredictable. It is practically impossible to collect data again from the same participants to record additional psychosocial changes they will pass through in their developmental periods (27). This experience underscores the vulnerability of civilians in areas of conflict and the need to address the effects of war on the mental health of children (14) and adolescents (27, 31-33).

The findings of this study are important for the educational and medical community to document and understand adolescents' postwar problems (14, 17, 13). Such data may be useful in reminding those planning and actively engaged in relief operations of the full range of needs that adolescents living in post war and areas of political and economic conflicts may have (27). The findings point to the major challenges with respect to repatriation and return to property and reconstruction. They highlight the importance of family reunification and the facilitating of decision-making by the affected people

themselves (13). In postwar Bosnia-Herzegovina, the people who survived war are faced every day with problems associated with over-dependence on external assistance, so this study could help point out the need for people to be given the means of using their skills and knowledge to control their day-to-day lives (13, 27).

### Conclusions

There were regional variations in the war in Bosnia-Herzegovina. Refugee and internally displaced adolescents suffered very frequently from PTSD 3.5 years after war. The most difficult war trauma was found in surviving adolescents from Srebrenica, then Zvornik and finally from Bijeljina. PTSD prevalence is highly reported and significantly differed between the groups.

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