

## Acculturation and Psychological Problems of Adolescents from Bosnia and Herzegovina during Exile and Repatriation

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- Aim** To estimate the frequency, type, and severity of psychological trauma among Bosnian refugee adolescents during the process of repatriation after the 1992-1995 war in Bosnia and Herzegovina.
- Methods** A sample of 239 pupils (120 girls and 119 boys), with a mean age ( $\pm$  standard deviation) of  $15.2 \pm 2.1$  years were assessed for war traumatic events, acculturation and repatriation maladjustments, school behavioral problems, and presence of post-traumatic stress disorder (PTSD). The sample consisted of adolescents who were in the process of repatriation after exile in a foreign country ( $n = 120$ ) and internally displaced adolescents ( $n = 119$ ).
- Results** Adolescents who had been exposed to severe psychological war trauma still had high level of trauma more than three years after the end of war. The level of recalling traumas they experienced (mean  $\pm$  standard deviation =  $3.9 \pm 1.2$  on a scale from 0 to 5) and frequency of PTSD symptoms ( $1.5 \pm 1.0$  on a scale from 0-5) were significantly lower among repatriated than internally displaced adolescents ( $4.4 \pm 0.7$  and  $2.2 \pm 1.1$ , respectively;  $P < 0.001$ ). The prevalence of PTSD did not differ between repatriated (56.7%) and internally displaced adolescents (68.1%). Returnees with more acculturation problems reported more functional and relational problems after return but less psycho-emotional dysfunctions. Those who adapted to the culture in the exile country had difficulties in adapting back to the culture in the home country.
- Conclusions** PTSD was still very frequent among Bosnian refugee adolescents 3.5 years after the end of war. Adolescents who had spent more than five years as refugees in foreign countries had significantly lower level of experienced trauma recall and frequency of PTSD symptoms, as well as less anxious/depressed and withdrawn/depressed behavioral problems, and somatic complaints. Returnees who had more acculturation problems in exile reported more functional and relational problems but less psycho-emotional problems after repatriation. Schools and other institutions involved in the education of adolescents should develop programs to address these issues.

From 1992 to 1995, the people of Bosnia and Herzegovina experienced one of the most horrible wars seen in Europe at the end of the twentieth century. Violence and ethnic cleansing were deliberately used as a tool to drive the people from the areas where they had lived for generations (1). The whole social structure was destroyed and there was no adequate social support system. The traumatic events experienced by thousands of

people during this conflict may have a lasting effect on the mental health of the country (2).

During the war, the civilians in Bosnia and Herzegovina experienced many traumatic situations similar to those experienced by combat soldiers (3): exposure to fighting, exposure to abusive violence, deprivation, and loss of control and meaning. The population of Bosnia and Herzegovina was exposed to extreme threats and intense

feeling of helplessness (4,5). Together with adults, many children witnessed or experienced traumatic events (6), and many families were forced to leave their homes (7). Many found refuge in European countries, where they faced different acculturation processes (8).

In 1995, after the end of war in Bosnia, a number of refugee families were repatriated, often against their wish, and returned to a completely changed, unsafe, and devastated environment. During this process, children were exposed to further stress caused by dislocation and the process of acculturation. This has left long-term emotional scars and mental health problems, including post-traumatic stress disorder (PTSD), in children and adolescent population. A failure to resolve moderate to severe traumatic reactions may result in long-term consequences on the ability of adolescents to engage in productive behaviors and to function adequately socially, academically, professionally, and personally (9). For adolescents who lost their fathers, the combination of dangerous experiences during the war and their own personal experiences in exile (10-12) may result in PTSD and many different behavioral dysfunctions and thus adversely affect adolescents' abilities to achieve their life goals in future (13,14).

In this study, we analyzed the process of acculturation and psychological characteristics of Bosnian adolescents who were repatriated after five to six years of life in exile (1992-1998), comparing them with their peers who were internally displaced, experienced different tragic war events but did not leave their homeland. They stayed during and after the war in Bosnia and Herzegovina as internally displaced persons, without a possibility to return to their place of origin. We assessed the severity of trauma experiences, stress level, level of behavioral disorders, and maladjustment problem of acculturation in countries of foreign culture and language, and the maladjustment problems that appeared during the process of repatriation. We also explored the influence of age, gender, and loss of father on the acculturation and repatriation maladjustment, and on the development of posttraumatic stress disorder and school behavior problems.

### Methods

Data collection took place in June 1999 in the classrooms of elementary and high schools,

with the written permission of the Tuzla Canton Ministry of Culture, Sport and Education. The study obtained the approval of the Human Research Ethics Board of the Tuzla University Clinical Center and from the Tuzla Canton Ministry of Culture, Sport and Education. During data collection, only the first author was present with the examinees, without school authorities.

### Subjects

The targeted populations were elementary and secondary school pupils in the early and middle adolescence, who were refugees during and after the war in Bosnia and Herzegovina. Participants were chosen from the available refugee pupils in 1 public elementary school and 7 secondary schools. They voluntarily agreed to participate and their parents gave informed consent. We selected a single elementary school, because the number of refugee pupils in the Tuzla municipality was greatest in this school. The selection of secondary schools depended on the availability of displaced and repatriated pupils, who were dispersed among all public secondary schools in the town of Tuzla. We tested 274 adolescents, and the questionnaires were valid for 239 (87.2%) of them. The sample consisted of two groups – repatriated group ( $n = 120$ , school pupils who were exiled for more than four years in one or more foreign countries during the war in Bosnia and Herzegovina) and non-repatriated group ( $n = 119$ , pupils who spent the same period displaced in one or more different places in Bosnia and Herzegovina). Even at the time of our study, the internally displaced group could not return to their homes. Both groups were divided into 2 age subgroups: elementary school students (11-16 years of age) and secondary schools students (16-20 years of age). The selection criteria were: a) adolescents who experienced war atrocities at the beginning of the war in Bosnia and Herzegovina, when they were forced to leave their homes under life threatening conditions, b) adolescents who were prevented to return to their homes. The average age ( $\pm$  standard deviation) of all participants was  $15.2 \pm 2.1$  years, with no difference between the repatriated ( $15.2 \pm 2.3$ ) and non-repatriated group ( $15.3 \pm 1.9$ ;  $P = 0.713$ ). The mean age of the examined participants at the time of the forced expulsion from their homes was  $8.6 \pm 2.4$  years ( $8.5 \pm 2.7$  for repatriated and  $8.7 \pm 2.1$  for non-repatriated;  $P = 0.602$ ). The

participants who had left Bosnia and Herzegovina spent on average of  $5.3 \pm 1.2$  years in exile.

### Outcome Measures

The questionnaire on basic personal and socio-demographic information was designed specifically for this study, and included questions on basic data (age, gender, level of parents' education, employment status of parents, self-evaluation of the psychosocial family status, and habits). To evaluate traumatic events, severity of trauma and presence of PTSD, as well as the expressiveness of PTSD symptoms, a self-rating Harvard Trauma Questionnaire (HTQ), Bosnia and Herzegovina Version (15,16) was used. We also asked the respondents to evaluate how they felt when they remember upsetting trauma experiences, either experienced or witnessed. For every identified traumatic event, the respondents were asked: "How do you feel when you remember that?", rated on a 0-5 scale: 0 – No feeling, 1 – bit upset, 2 – somewhat upset, 3 – moderately upset, 4 – seriously upset, and 5 – extremely seriously upset.

Another part of the 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 (17). Stress level was defined as the frequency of each DSM-IV PTSD symptom in the last month assessed on the 0-5 scale by determining its appearance: 0 – not at all, 1 – almost never, 2 – sometimes, 3 – moderately, 4 – often and 5 – almost every day.

The acculturation and repatriation characteristics were determined according to DSM-IV instructions for systematic description of cultural influence (17). A self-administered questionnaire was used to gather socio-demographics data. Data about school behavior disturbances were collected from the teachers using the Achenbach Child Behavior Check List-Teacher Report Form (CBCL-TRF) (18), based on teachers' observation

in the classroom. The checklist consisted of 121 close-ended questions, thematically divided into the following sections: 1) anxious/depressed behavior – 13 items, 2) withdrawn/depressed behavior – 8 items, 3) somatic complaints – 11 items, 4) social problems – 11 items, 5) thinking problems – 15 items, 6) attention problems – 10 items, 7) rule-breaking behavior – 17 items, 8) aggressive behavior – 18 items, and 9) other problems – 17 items: bowel movements out of toilet, bragging, cruelty to animals, not eating well, biting nails, overeating, overweight, other physical problems, showing off, sleeping more, talking too much, thumb sucking, self wetting during the day, wetting the bed, whining, wishing to be of opposite sex, and other problems. Based on the CBCL-TRF cut-off T-score of 69.5 (18) and respecting the symptom sections criteria, we estimated the prevalence rate of clinical range of behavioral problems among participants, as noted by teachers in schools.

### Statistics

Collected data were statistically analyzed using the Windows Statistical Package for Social Sciences, version 10.0 (SPSS, Chicago, IL, USA). Statistical tests included t-test,  $\chi^2$ -test, Pearson's r coefficient of correlation, and Spearman's r coefficient of correlation.

### Results

#### Socio-demographic Data and Exposure to Traumatic Events

Internally displaced adolescents lived significantly more often in "non adequate" residence, in collective settlements, they experienced significantly more often father loss, loss of immediate and/or extended family member(s), and separation from parent(s) because of the lack of financial means (Table 1). There were no significant differences between repatriated and internally displaced adolescents according to living in non-adequate and non-safe neighborhood (Table 1).

**Table 1.** Socio-demographic data for 239 Bosnian adolescents who were repatriated after refuge or internally displaced

Socio-demographic data	No. (%) of adolescents			$\chi^2$	P
	repatriated (n=120)	internally displaced (n=119)	total (n=239)		
Non-adequate residence	51 (42.5)	83 (69.7)	134 (56.1)	18.01	<0.001
Collective settlements	47 (39.2)	64 (53.8)	108 (45.2)	5.13	0.024
Non-adequate and non-safe neighborhood	45 (37.5)	49 (41.2)	94 (39.3)	0.34	0.561
Separation from parent/s	30 (34.2)	62 (52.1)	98 (41.0)	12.33	0.006
Not enough financial means	60 (50.0)	91 (76.5)	151 (63.2)	17.99	<0.001
Father loss	19 (15.8)	41 (34.5)	60 (25.1)	11.02	0.001
Immediate or extended family member(s) loss	58 (48.3)	90 (75.6)	148 (61.9)	18.88	<0.001

**Table 2.** Severity of feeling when recalling trauma experiences (mean±standard deviation) in 239 adolescents from Bosnia and Herzegovina who were either repatriated (n=120) or internally displaced (n=119)

Trauma	Feeling severity*			
	repatriated adolescents		internally displaced adolescents	
	No. (%)	mean±SD	No. (%)	mean±SD
<b>Experienced:</b>				
unwillingly leaving home	96 (80.0)	3.9±1.4	103 (86.6)	4.3±1.1†
separation from family and friends	93 (77.5)	4.3±1.3	99 (82.5)	4.7±0.8†
forced expelling from home	78 (65.0)	4.0±1.4	101 (84.9)	4.3±1.1
living in collective refugee settlement	49 (40.8)	4.6±1.0	64 (53.8)	4.4±1.0
severe fear	47 (39.2)	4.5±1.0	64 (53.8)	4.9±0.4†
shelling very close to me	27 (22.5)	2.9±1.8	65 (54.6)	4.1±1.1†
enemies maltreating my father	30 (25.0)	4.7±0.6	60 (50.4)	4.5±1.0
refugee problems	42 (35.0)	4.5±1.2	48 (40.3)	4.6±0.9
firing at our house	29 (24.2)	2.8±1.5	36 (30.3)	4.4±1.1†
running away, hiding and crawling in front the life threatening danger	23 (19.2)	3.7±1.4	40 (33.6)	4.8±0.7†
living in a room in a foreign environment	56 (46.7)	3.9±1.5	7 (5.9)	4.6±0.8
mother's crying	24 (20.0)	4.6±0.6	38 (31.9)	4.8±0.5
severe sadness	47 (39.2)	4.1±1.2	14 (11.8)	4.7±0.6
<b>Witnessed:</b>				
killing of close relatives	30 (25.0)	4.5±0.9	56 (47.1)	4.6±0.7
enemy soldiers killing people	19 (15.8)	4.7±0.8	53 (44.5)	4.7±0.7
dead bodies	51 (42.5)	4.3±1.2	75 (63.0)	4.4±1.0
execution of people by a firing squad	44 (36.7)	4.5±0.9	75 (63.0)	4.7±0.6
watching people being slaughtered on TV	49 (40.8)	4.2±1.2	51 (42.9)	4.6±0.7
wounding and wounded people	37 (30.8)	4.5±0.8	52 (43.7)	4.6±0.6
beating and torturing of men and women	28 (23.3)	4.4±1.1	51 (42.9)	4.6±0.9
everything listed	117 (97.9)	3.9±1.2	119 (100.0)	4.4±0.7†

\*Feeling when remembering the traumatic event, range from 0 – no feeling to 5 – extremely upset; data presented as a mean score.

† $P < 0.015$ , Student t-test.

The average severity level of the survived traumatic experiences of repatriated adolescents was lower than that of non-repatriated group (Table 2). Internally displaced adolescents reported significantly more trauma experiences “shelling very close to me; firing at our house, and running away to save my life” compared with repatriated adolescents ( $P < 0.001$ ). Internally displaced pupils experienced more severe fear ( $P = 0.005$ ). The severity of remembering the trauma caused by “unwillingly leaving one's home” and “separation from family and friends” were statistically higher than among repatriated adolescents ( $P < 0.05$ ).

There was a positive correlation between age and trauma experiences severity among returnees (Pearson's  $r = 0.275$ ;  $P = 0.002$ ). Elementary school returnees had significantly lower severity of trauma experience (score =  $3.2 \pm 1.2$  on a 0-5 scale) than secondary school ones (score =  $4.0 \pm 0.9$ ,  $t = -3.864$ ;  $P < 0.001$ ).

Older returnee girls (score =  $4.2 \pm 0.5$ ) and older internally displaced girls (score =  $4.4 \pm 0.8$ ) had significantly higher trauma experience severity than boys (score =  $3.8 \pm 1.1$  in older returnee boys,  $t = 2.103$ ,  $P = 0.04$ ; score =  $4.0 \pm 1.0$  in older internally displaced boys,  $t = 2.051$ ,  $P = 0.045$ , respectively).

Older non-repatriated participants who lost their fathers had statistically greater severity of trauma experiences (score =  $4.7 \pm 0.4$ ) than their peers who had both parents (score =  $4.0 \pm 1.0$ ,  $t = 2.327$ ;  $P = 0.024$ ).

### Frequency of PTSD Symptoms

The frequency of PTSD symptoms (stress level) in the whole sample was  $1.8 \pm 1.1$  on a 0-5 scale). Stress level was significantly lower among the returnees, ( $1.5 \pm 1.0$ ) than among internally displaced adolescents ( $2.2 \pm 1.1$ ,  $t = -4.426$ ,  $P < 0.001$ ). Stress level scores in the whole sample highly correlated with the scores on the traumatic experience severity (Pearson's  $r = 0.395$ ;  $P < 0.001$ ). The stress level highly correlated with the trauma experience severity in repatriated (Pearson's  $\rho = 0.329$ ;  $P < 0.001$ ) and non-repatriated group (Pearson's  $\rho = 0.435$ ;  $P < 0.001$ ).

Younger returnees ( $1.3 \pm 1.1$ ) and younger internally displaced adolescents ( $1.8 \pm 1.0$ ) had significantly lower stress level severity than their older colleagues ( $1.7 \pm 1.0$ ,  $t = -2.147$ ,  $P = 0.034$  and;  $2.4 \pm 1.2$ ,  $t = -2.788$ ,  $P = 0.006$ , respectively).

Younger returnee boys had statistically higher stress level ( $1.6 \pm 0.8$ ) than their girl peers ( $1.0 \pm 1.2$ ) ( $P = 0.032$ ), whereas older returnee girls ( $2.1 \pm 0.9$ ) and older internally displaced girls

( $2.7 \pm 1.2$ ) had statistically higher stress level severity than boys ( $1.4 \pm 0.9$ ,  $P=0.002$  and  $2.1 \pm 1.1$ ,  $P=0.038$ ).

Older non-repatriated adolescents who had lost their father ( $3.1 \pm 1.0$ ) had significantly higher stress level severity than their peers who had both parents ( $2.2 \pm 1.1$ ), ( $P=0.006$ ).

### Acculturation Problems

Returnees reported significantly fewer acculturation problems, such as: "thought about native place after arriving in refugee/displaced environment," "wanted to return to homeland/native place," "was sad after arriving in refugee/displaced environment," "listened to news from homeland/native place," "had digestion problems after exiled/displaced," and "missed friends during the exile/displacement" (Table 3).

Younger returnees significantly more often "thought about native place after arriving to a foreign country" (49/60) than older ones (32/60) ( $\chi^2_1=10.98$ ;  $P=0.001$ ). Older non-repatriated adolescents (29/59) had significantly more often "digestion problems in displacement" than younger ones (18/60) ( $\chi^2_1=4.57$ ;  $P=0.033$ ). Older returnees (27/60) and older internally displaced pupils (27/59) "were forbidden to play outside" significantly more than younger ones (15/60,  $\chi^2_1=5.28$ ,  $P=0.022$ ; 10/60,  $\chi^2_1=11.75$ ,  $P=0.001$ ; respectively).

Internally displaced girls were significantly more often "sad after arriving in the place of displacement" (54/60) than boys (45/59) ( $\chi^2_1=4.01$ ;  $P=0.045$ ). Repatriated girls (30/60) were significantly more often "forbidden to play outside in place of exile" than boys (12/60) ( $\chi^2_1=11.87$ ;  $P=0.001$ ). Repatriated boys were "prevented to accept new environment" significantly more often (14/60) than girls (2/60) ( $\chi^2_1=10.39$ ;  $P=0.001$ ). In-

ternally displaced girls (10/60) were significantly more often prevented to accept new environment (milieu) than boys (3/59) ( $\chi^2_1=4.1$ ;  $P=0.043$ ).

Returnees who had lost the father were significantly more often "Sad after arriving in the place of exile" (14/19) than those who had both parents (44/101) ( $\chi^2_1=5.81$ ;  $P=0.016$ ). They had more often experienced "sleeping disturbances" (11/19) than those who had complete families (32/101) ( $\chi^2_1=4.78$ ;  $P=0.029$ ). Internally displaced adolescents in Bosnia and Herzegovina who had lost their father had significantly more "sleeping disturbances" (25/41) and "digestion problems" (22/41) than those with both parents (29/78,  $\chi^2_1=6.14$ ,  $P=0.013$ ; 25/78,  $\chi^2_1=5.25$ ,  $P=0.022$ , respectively). On the other hand, returnees who had both parents "were forbidden to play outside" significantly more often (40/101) than those who lost father (2/19) ( $\chi^2_1=5.943$ ;  $P=0.015$ ). Internally displaced adolescents who had lost the father significantly more often wanted to "return to homeland" (16/19) than those who had both parents (51/101) ( $\chi^2_1=7.37$ ;  $P=0.007$ ). During exile, returnees who lost father "listened to news from home country" significantly more often (17/19) than their peers who did not lose father (42/101) ( $\chi^2_1=14.674$ ;  $P<0.001$ ).

### Repatriation Problems

After return to home country, 95 of 120 (79%) returnees had no social support; 58% of them had unemployed parents; 10% were living in extreme poverty and only 10.8% had properly solved health care insurance. For 87% of returnees, school system was completely different than in the exile country, and for 77% economic situation was worse than in exile, 73% preferred watching exile country programs on satellite TV, and 48% were sad after return (Table 4).

**Table 3.** Frequency of acculturation problems in repatriated refugee (n=120) and internally displaced (n=119) adolescents in Bosnia and Herzegovina

Acculturation problems during period of exile/displacement	No. (%) of adolescents			$\chi^2$	P
	repatriated	displaced	total		
Thinking about relatives being in refugee environment	103 (85.8)	109 (91.6)	212 (88.7)	1.98	0.159
Thinking about native place after arriving in refugee environment	81 (67.5)	108 (90.8)	189 (79.1)	19.53	<0.001
Wanted to return to homeland/native place	67 (55.8)	106 (89.1)	173 (72.4)	33.03	<0.001
Missed friends during exile/displacement	79 (65.8)	94 (79.0)	173 (72.4)	5.18	0.023
Was sad after arriving to refugee environment	58 (48.3)	99 (82.5)	157 (65.7)	32.22	<0.001
Listened to news from homeland/native place	59 (49.2)	89 (74.8)	148 (61.9)	16.64	<0.001
Had sleeping problems after exiled/displaced	43 (35.8)	54 (45.4)	97 (40.6)	2.26	0.133
Was forbidden to play outside in refugee environment	42 (35.0)	37 (31.1)	79 (33.1)	0.41	0.521
Had alimentary problems after being exiled/displaced	15 (12.5)	47 (39.5)	62 (25.9)	22.67	<0.001
Was disturbed to accept new environment	16 (13.3)	13 (10.9)	29 (12.1)	0.33	0.568

**Table 4.** Repatriation problems of refugee adolescents from Bosnia and Herzegovina (n=120)

Repatriation problems	No. (%) of participants
Different school system than in the country of exile	104 (86.7)
Economic situation is worse than before the exile	92 (76.7)
Preferring to watch programs from exile country on satellite TV	88 (73.3)
Sadness after return	58 (48.3)
Missed being with friends from exile country	55 (45.8)
School study difficulties after returned	48 (40.0)
Lost school friends after return	31 (25.8)
Sleeping disturbances after return	30 (25.0)
Concentration disturbances in studying after return	24 (20.0)
Difficulties in learning the mother language after return	18 (15.0)
Communication problems with friends, relatives, and neighbors	10 (8.3)
Difficulties with teachers	7 (5.8)
Alimentary difficulties	6 (5.0)

Older returnees reported significantly more often "a different school system in home country than in country of exile". They also reported significantly more "missing being with their old friends," whereas younger returnees reported significantly more "communication problems with friends, relatives and neighbors" and "alimentary difficulties" (Table 5). Returnee girls reported significantly more "a different school system in the home country than in the country of exile," and "missing being with old friends," whereas returnee boys reported difficulties with school studying more often after the return. Returnees who had both parents reported significantly more "worsening of economic situation than before exile" and "missing being with old friends," whereas returnees who had lost the father reported significantly more "difficulties with professor/s" (Table 5).

#### PTSD Prevalence

In the whole sample, 149 (62%) of 239 participants reported symptoms that met DSM-IV criteria for PTSD; repatriated group had 68 (57%) of 120

and non-repatriated group had 81 (68%) of 119 participants with PTSD ( $\chi^2_1 = 3.308$ ;  $P = 0.069$ , Table 6).

The prevalence of PTSD was significantly greater among older returnees (40/60) than among younger ones (28/60,  $\chi^2_1 = 4.89$ ,  $P = 0.027$ ). Among internally displaced adolescents, PTSD prevalence between older and younger subgroups did not significantly differ (Table 6).

PTSD prevalence among younger returnee boys was significantly higher than among their girl peers, whereas PTSD prevalence among older returnee girls was significantly higher than among boys (Table 6). Internally displaced adolescent girls had significantly greater prevalence of PTSD than boys. Among both older and younger internally displaced participants, gender had no significant influence on PTSD prevalence.

Father loss had no substantial influence on the prevalence of PTSD among returnees, either in the whole group or in age subgroups. However, more internally displaced adolescents who had lost the father had PTSD both in the whole group, and in age subgroups (Table 6).

#### Social Emotional and Behavioral Problems Reported by School Teachers

According to the teachers' reports, internally displaced adolescents had more problems than repatriated ("Total problems" in Table 7). School teachers reported significantly fewer anxious/depressed behavioral problems for 120 repatriated pupils (3%), as well as withdrawn/depressed behavioral problems (3%) than internally displaced adolescents (24%,  $P < 0.001$ ; and 23% of 119 participants,  $P < 0.001$ , respectively). Also, somatic complaints were reported significantly

**Table 5.** Repatriation problems in repatriated refugee adolescents from Bosnia and Herzegovina according to their age, gender, and father loss\*

Repatriation problems	No. (%) of participants												
	total (n=120)	school		$\chi^2$	P	gender		$\chi^2$	P	parents		$\chi^2$	P
		elementary (n=60)	secondary (n=60)			girls (n=60)	boys (n=60)			both (n=101)	father loss (n=19)		
Different school system than in the exile country	104 (86.7)	47/60	57/60	7.21	0.007	56/60	48/60	4.62	0.032				
Economic situation is worse than before the exile	92 (76.7)									84/101	8/19	15.07	0.001
Missed being with friends from exile country	55 (45.8)	22/60	33/60	4.06	0.044	37/60	18/60	12.12	<0.001	53/101	2/19	11.34	0.001
School study difficulties after return	48 (40.0)					12/60	36/60	20.0	<0.001				
Problems in communication with friends, relatives and neighbors	10 (8.3)	8/60	2/60	3.93	0.048								
Difficulties with teachers	7 (5.8)									2/101	5/19	17.24	<0.001
Eating difficulties	6 (5.0)	6/60	0	6.32	0.012								

\*Only statistically significant differences are presented.

**Table 6.** Prevalence of posttraumatic stress disorder (PTSD) among repatriated refugee and internally displaced adolescents from Bosnia and Herzegovina 3.5 years after the end of war

Groups	No. (%) of adolescents with PTSD diagnosis								
	gender			$\chi^2$	P	parents*		$\chi^2$	P
	total (n=119)	girls (n=60)	boys (n=60)			both (n=101)	father loss (n=19)		
Repatriated (n=120):									
younger (n=60)	28/60	10/30	18/30	4.286	0.038	21/50	7/10	2.625	0.105
older (n=60)	40/60	25/30	15/30	7.500	0.006	33/51	7/9	0.588	0.443
all	68/120	35/60	33/60	0.136	0.713	54/101	14/19	2.662	0.103
Displaced (n=119):									
younger (n=60)	40/60	22/30	18/30	1.200	0.273	19/34	21/26	4.106	0.043
older (n=59)	41/59	24/30	17/29	3.179	0.075	26/44	15/15	8.830	0.003
all	81/119	46/60	35/59 <sup>†</sup>	4.117	0.042	45/78	36/41	11.211	0.001
All repatriated and displaced (n=239)	149/239	81/120	68/119	3.308	0.069	99/179	50/60	15.04	<0.001

\*There were 78 adolescents with both parents and 41 who had lost their father (total=119) among internally displaced adolescents.

†There were 59 boys in the group of internally displaced adolescents.

less often by returnees than by internally displaced subjects. Among returnees, teachers did not report any social or thinking problems. In the whole sample, any attention problem or problem with rule-breaking or aggressive behavior was reported by the teachers (Table 7).

Teachers reported significantly fewer psychological problems among returnees, than in the non-repatriated group (Table 7). The prevalence of PTSD was not associated with anxious/depressed problems or somatic complaints. The prevalence of PTSD among returnees in the sample highly positively correlated with the prevalence of anxiety (Spearman's  $\rho=0.136$ ;  $P=0.036$ ), withdrawn/depressed behavior ( $\rho=0.146$ ;  $P=0.024$ ), somatic complaints ( $\rho=0.158$ ;  $P=0.015$ ), thinking problems ( $\rho=0.156$ ;  $P=0.066$ ), and total problems ( $\rho=0.146$ ;  $P=0.022$ ). However, PTSD was negatively correlated with the prevalence of aggressive behavior ( $\rho=-0.143$ ;  $P=0.022$ ).

Among returnees, only younger pupils reported withdrawn/depressed problems (4/60) ( $\chi^2_1=4.138$ ;  $P=0.042$ ). Age was not associated with the prevalence of other social-emotional, and

behavioral problems in school reported for returnees. Older participants in the non-repatriated group significantly more often reported anxiety, withdrawn/depressed problems, somatic complaints, thinking, and total problems ( $P<0.001$ ); but not social problems ( $P=0.001$ ) and other problems ( $P=0.005$ ).

Gender was not associated with the prevalence of school behavioral problems.

Returnees who had parents, both younger and older ones, did not develop any anxiety problem, but their peers who had lost the father did: 2/10 younger and 2/9 older ( $\chi^2_1=10.35$ ,  $P=0.001$ ;  $\chi^2_1=11.72$ ,  $P=0.001$ , respectively). Among 51 older returnees who had both parents no one reported somatic complaints, this was reported by 2 out of 9 adolescents who had lost their father ( $\chi^2_1=11.72$ ;  $P=0.001$ ). Father loss among returnees was in high positive correlation with prevalence of anxiety behavior  $\rho=0.303$ ;  $P=0.001$ .

Older internally displaced girls reported significantly more anxiety problems (18/30) withdrawn/depressed problems (18/30 vs 7/29,

**Table 7.** Social-emotional/behavioral problems reported by school teachers of repatriated refugee or internally displaced adolescents from Bosnia and Herzegovina 3.5 years after war

Behavioral problems*	No. (%) of adolescents			$\chi^2$	P
	total (n=239)	repatriated (n=120)	displaced (n=119)		
Anxious/depressed	33 (13.8)	4 (3.3)	29 (24.4)	22.22	<0.001
Withdrawn/depressed	31 (12.9)	4 (3.3)	27 (22.7)	19.83	<0.001
Somatic complaints	22 (9.2)	3 (2.5)	19 (16.0)	12.96	<0.001
Social	13 (5.4)	0	13 (10.9)	13.86	<0.001
Thinking	18 (7.5)	0	18 (15.1)	19.63	<0.001
Attention	0	0	0		
Rule-breaking behavior	0	0	0		
Aggressive behavior	0	0	0		
Other problems <sup>†</sup>	160 (66.9)	68 (56.7)	92 (77.3)	11.51	0.001
Everything listed	13 (5.4)	0	13 (10.9)	13.86	<0.001

\*Syndrome/profiles of participants according to Achenbach's Child Behavior Check List-Teacher Report Form (CBCL-TRF) (18).

†Bowel movements out of toilet, bragging, cruelty to animals, poor appetite, biting nails, overeating, overweight, other physical problems, showing off, sleeping more, talking too much, thumb sucking, wetting self during the day, wetting the bed, whining, and wishes to be of opposite sex.

$\chi^2_1 = 7.77$ ;  $P = 0.005$ ), and thinking problems (15/30 vs 3/29,  $\chi^2_1 = 10.94$ ;  $P = 0.001$ ) than boys (10/29,  $\chi^2_1 = 3.85$ ;  $P = 0.05$ ).

Gender was not associated with the prevalence of somatic complaints, and social problems in the group of internally displaced adolescents.

Older internally displaced adolescents who lost father were often reported somatic complaints (8/15) than their peers who had both parents (10/44) ( $\chi^2_1 = 4.94$ ;  $P = 0.026$ ), more social problems (7/15 vs 5/44,  $\chi^2_1 = 8.61$ ;  $P = 0.003$ ).

Acculturation and repatriation problems of the returnees were mutually highly correlated (Table 8). "School difficulties in home country" after return were positively associated with acculturation problems in exile such as thinking about relatives, wish to return to home country, missing friends, playing in the yard or on the street, sadness, and thinking about home place. "Listening to news from home country" and "sleeping difficulties in exile" were positively associated for returnees with "difficulties in relations with professor/s" in home country. "Wanted to return to home country" and "missing friends in exile" positively correlated with "communication problems with relatives, friends or/and neighbors" after return. "Thinking about relatives" and "missing friends in exile" were in negative correlation with "sadness in home country." Returnees who could "play in the yard or on a street" in exile had more "concentration problems in school studying" after return.

Returnees who "preferred to watch exile country programs on satellite TV" in home country, significantly less often thought about relatives, listened to news from home country, wanted to return to home country, missed friends, accepted new environment, had alimentary or sleeping difficulties, were sad after exiled, and thought about native place in exile. Returnees, who had alimentary difficulties in home country, accepted new environment in exile better but were sadder during that period (Table 8).

Meeting new friends negatively correlated with the occurrence of withdrawn/depressed behavior (Spearman's  $\rho = -0.434$ ;  $P < 0.001$ ). "Continuing education with peers" negatively correlated with the occurrence of anxiety behavior ( $\rho = -0.250$ ;  $P = 0.006$ ). Those who had "learning troubles" were less frequently withdrawn/depressed ( $\rho = -0.271$ ;  $P = 0.003$ ). "Problems in communication with friends, relatives and neighbors" positively correlated with anxiety behavior ( $\rho = 0.224$ ;  $P = 0.013$ ). "Preferring to watch satellite TV in the language of exiled country after return" highly negatively correlated with PTSD prevalence ( $\rho = -0.22$ ;  $P = 0.014$ ), prevalence of anxiety, and withdrawn/depressed behavior ( $\rho = -0.2$ ;  $P = 0.026$  respectively).

## Discussion

Our study showed that adolescents who lived in exile for more than five years had prob-

**Table 8.** Non-parametric correlation (Spearman's  $\rho$ ) of acculturation and repatriation problems among returnees

Acculturation problems during exile		School study with difficulties	Difficulties with teacher	Communication difficulties with relatives, friends	Concentration difficulties in studying	Watching exile country TV programs	Sleeping difficulties	Eating problems
Thinking about relatives	$\rho^*$	0.185	-0.001	0.036	-0.372	-0.084	-0.245	-0.483
	$P^\dagger$	0.043	0.993	0.696	<0.001	0.364	0.007	<0.001
Listening to news from home country	$\rho$	0.150	0.182	0.005	-0.084	0.033	-0.312	-0.221
	$P$	0.103	0.047	0.957	0.362	0.718	0.001	0.015
Wanted to return to home country	$\rho$	0.418	0.150	0.207	-0.147	0.101	-0.347	-0.145
	$P$	<0.001	0.103	0.023	0.109	0.274	<0.001	0.113
Missed friends	$\rho$	0.445	0.104	0.217	-0.288	0.167	-0.355	-0.193
	$P$	<0.001	0.257	0.017	0.001	0.068	<0.001	0.035
Accepted new environment	$\rho$	-0.054	0.086	-0.131	0.070	0.077	-0.246	0.106
	$P$	0.556	0.351	0.153	0.446	0.404	0.007	0.251
Forbidden to play outside	$\rho$	0.421	0.108	0.095	-0.129	0.332	0.032	-0.343
	$P$	<0.001	0.240	0.303	0.159	<0.001	0.732	<0.001
Eating problems	$\rho$	-0.154	0.013	0.068	-0.164	0.000	-0.399	-0.102
	$P$	0.092	0.884	0.458	0.074	1.000	<0.001	0.268
Sleeping difficulties	$\rho$	0.099	0.185	0.026	-0.027	0.026	-0.296	-0.151
	$P$	0.280	0.043	0.776	0.768	0.777	0.001	0.101
Sadness	$\rho$	0.246	0.108	0.063	-0.115	-0.008	-0.231	-0.178
	$P$	0.007	0.239	0.495	0.212	0.934	0.011	0.051
Thinking about home country	$\rho$	0.240	0.097	0.080	0.030	0.142	-0.298	-0.216
	$P$	0.008	0.293	0.382	0.743	0.121	0.001	0.018

\*Spearman's correlation coefficient.

†Significance of nonparametric correlation.



lems adapting again to the life in homeland. They once again experienced acculturation, now to their mother language but in completely changed physical, psychological, social, and political circumstances (19,20).

All participants in this study had experienced large number of traumatic events, and survival difficulties, which persisted more than 3 years after the war. The stress level was associated with the level of traumatic experiences. There has not been much research on the problems of forced migration, health, and particularly mental health problems of refugees among the population of Bosnia and Herzegovina (21-25).

Children who grow in vulnerable families may have different difficulties (24). In this study, loss of the father was experienced by 25% of examinees. This is similar to the finding of Papageorgiou et al who found that 28% of 95 Bosnian refugee children lost a parent (21). In our study, the percentage of those who lost the father among internally displaced adolescents was much higher. Husain et al (19) reported that 66% of 521 Sarajevo children lost a member of family. This is similar to 61.9% of 239 participants in our study.

We found that the loss of their loved ones and exile were the most severe trauma experiences for the returnees, which is similar to studies on other groups of traumatized persons (19,21). Returnees assessed the experiences of shelling and firing close to them, as less severe than internally displaced adolescents. All participants in our study experienced the same traumas with different frequency and severity. Life in a safer environment after experience of war did not help returnees to diminish the severity of trauma experiences such as forced expulsion from their homes, living in a refugee settlement, family members' loss, witnessing killing and terror. For these trauma experiences they reported the same level of hardship, compared to internally displaced adolescents. However, recalling living in a peaceful country helped returnees in diminishing the severity of their traumatic experiences. On the other hand, internally displaced participants, who remained in the war zone, have been exposed to continual life threatening danger, and they reported persisting high level of recalling trauma experiences.

Repatriated adolescents, after living in exile for more than five years, were faced with dif-

ferent acculturation processes. At the same time, their peers who spent the whole war and postwar period in the home country were faced with different acculturation processes in the new environment but in the same culture and mother language. They and their families remained exposed to continual life-threatening situations. Internally displaced adolescents had more problems to adapt to the new life environment than their exiled peers, probably because they experienced more discomfort and life threatening conditions in their own homeland. Age had minimal influence on acculturation maladjustment in both groups of adolescents but girls and adolescents who had lost the father were more disturbed to accept new life conditions. The problem of acculturation is the subject of many studies (9-11,26,27) but the problem of repatriation is not so well investigated. Only a few scientific reports address the problems of acculturation and repatriation in the population of Bosnia and Herzegovina (8). Language difficulties, e.g. clumsy use of mother language, which they forgot in the foreign country, were a great problem for returnees' (8). Suffering during repatriation is common, regardless of the reasons and duration of the exile (28). The process of acculturation after returning into own home country is long-lasting and very complex phenomenon (29,30) because these individuals face many emotional, social and financial problems (31).

We found that the returnees who were maladjusted in exile were dysfunctional in school, with poor studying concentration and poor working capacity after return. They had more difficulties with school authorities and with close persons in the home country. However, they had less psycho-functional difficulties in the home country as indicated by less sadness and sleeping disturbances. The returnees who were well adapted to the foreign culture more often reported preferring to keep connection with exile country, using satellite TV, probably because of poor adaptation to the mother language or home country TV programs. They also probably tried to keep connection with the exile country culture, habits and language preferring to watch exile country TV programs using satellite TV.

There were no differences in the prevalence of PTSD among returnees and internally displaced adolescents. The PTSD rate among repatriated Bosnian adolescents was 56.7%, similar to

other studies or reports of PTSD rates among refugees from Croatia, Bosnia and Herzegovina, and Kosovo (25,31).

The prevalence of PTSD among older returnees was significantly higher than among younger ones. This can be explained with their capacity to understand life threatening situations they went through at the beginning of the war and during their exile. Among internally displaced adolescents there were no statistically significant differences regarding their age. Among younger returnees, boys developed significantly more PTSD, whereas older girls developed significantly more PTSD than boys. Father loss had no substantial influence on the occurrence of PTSD among returnees, but internally displaced participants who lost the father had significantly higher occurrence of PTSD (19). All examinees in this study were exposed to direct catastrophic traumas that lasted considerably long. Such occasions prolong the duration or worsening of PTSD symptoms (23-25). It has also been showed that the procedures required to get asylum in majority of western European countries provoke renewal refugees' traumatic experiences (32). Even the repatriation threat becomes a critical trigger for PTSD symptom recidivism (33).

Returnees developed fewer anxious/depressed, withdrawal/depression behavioral problems somatic complaints than internally displaced adolescents. The possible explanation may be that they experienced psychosocial development in a safer and more normally organized environment. Whereas PTSD was not associated with anxious/depressed problems or somatic complaints in returnees, it was highly positively correlated among internally displaced adolescents PTSD with the prevalence of anxious/depressed, withdrawal/depression behavioral problems, somatic complaints, and thinking problems. Aggressive behavior highly negatively correlated with the prevalence of PTSD. Returnees, who were well adapted in foreign country, preferred watching satellite TV in language of the exiled country after return and had better post-trauma outcomes, probably because of good psychosocial capacities they naturally poses and high resiliency. Those who were forbidden to play in yard or on a street in exile reported worsened depressive behavior and PTSD occurrence, possible because of higher vulnerability.

The finding of correlation childhood trauma and social-emotional/behavioral disorders

is in line with results from neurobiology (34) and developmental psychopathology (35). Developmental psychological studies on the generation(s) that experienced intense negative emotions indicate ways in which childhood traumatic experiences might challenge maturing mechanisms of emotional or mood regulation (35). Severe stress early in life is related to greater sensitivity of the hypothalamic-pituitary-adrenal axis to stress in adulthood, which underlies greater vulnerability to depression (35).

This study has a few limitations. Our study looked at PTSD prevalence rates among adolescents more than three years after the conflict has ended. PTSD symptoms can increase over the years for some reasons and can decrease for others. Since no baseline data had been collected for this population, we cannot know whether current PTSD symptoms for the participants have improved over the years. Further, we do not know if the existing PTSD symptoms were the result of traumatic experiences from the war or from the acculturation in foreign countries, or from acculturation during repatriation. Furthermore, all survey instruments were administered in a written form (self-administered questionnaires and scales) and no repeated data collections were ensured (5). One of the reasons for not following up this population is in additional migrations toward their original settlements.

Our study may be helpful in better understanding of school adolescents' psychosocial postwar problems and for perspective planning of preventive intervention strategies, including action research perspective and initiatives (5).

#### Acknowledgment

The research supported by the Tuzla Canton Ministry for Health, Tuzla Canton Ministry for Culture, Sport and Education, Pharmaceutical Industry "Bosnalijek" Sarajevo, Tuzla Municipality and Medical Centre Brčko in Maoča. Our special acknowledgments addressed to adolescents themselves, parents, teachers and many individuals for their contribution to this research. I would like to thank anonymous referees for helpful comments, Mirjana Tiljak-Kujundžić for statistics and particularly to Drs Ana and Matko Marušić for help and support during the preparation of this paper.

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Received: January 13, 2004

Accepted: January 15, 2005

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