

## Socio-economic status and psychosocial functioning of internally displaced adolescents and adolescents from Belgrade

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### Abstract

**Objectives** This study aimed at investigating the differences between internally displaced adolescents and adolescents from Belgrade in relation to socio-economic status and psychosocial functioning.

**Methods** The investigation was conducted in Belgrade in 2000 and comprised 560 high school adolescents aged  $18.1 \pm 0.9$  years (response rate 88%)—32 participants were internally displaced from Kosovo 1 year after the NATO campaign in Serbia (1999) and 528 were adolescents who lived in Belgrade more than 10 years. A specific questionnaire was used to obtain data on employment of family members, housing conditions, socialization, school success, smoking, alcohol consumption, and psychoactive substance use. Cornell Medical Index was applied as the screening test for neuroticism.

**Results** Internally displaced adolescents had poorer housing conditions ( $p < 0.001$ ), poorer school social relations ( $p < 0.001$ ), and their school achievement was inferior ( $p < 0.002$ ). The compared groups did not significantly differ in the frequency of smoking, alcohol consumption, psychoactive substance use, and neuroticism.

**Conclusion** Significant differences observed between internally displaced adolescents and adolescents from Belgrade in some components of both socioeconomic status and psychosocial functioning suggest adverse effects of displacement.

**Keywords** Internally displaced adolescents · Psychosocial functioning · Socio-economic status

### Introduction

Internally displaced persons are “persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflicts, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized State border” (Internal Displacement Monitoring Centre 2007). There are over 45 million persons worldwide who have been forcibly displaced from their home areas due to conflict and insecurity. Over 24 million of these are internally displaced persons who have remained within the boundaries of their own countries, and this number has increased over the past 20 years (Internal Displacement Monitoring Centre 2007; UNHCR 2007).

It is estimated that in the critical moment there were even 2.5 million persons that have migrated on the territory of former Yugoslavia, and 27% of them were children and youth younger than 18 years (UNHCR 1996).

This situation was additionally complicated by a large number of internally displaced people from Kosovo culminating during and after the NATO campaign in 1999. Early research on war-related trauma in children showed

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that over 90% of children who lived in high-risk zones, such as Sarajevo or Vukovar, have been exposed to severe traumatic life events (Baráth 1996).

The whole experience of a refugee child is commonly divided into three phases: premigration, migration, and postmigration (Fazel and Stein 2002; Lustig et al. 2004; Pumariega et al. 2005). Postmigration or postdisplacement phase bring up new circumstances (uncertain residency status, low socioeconomic status, parental unemployment >6 months during the first year of resettlement, cultural conflicts, language difficulties, and ethnic discrimination), which increase the chance for mental health problems (Davies and Webb 2000; Lustig et al. 2004; UN 2006; Bean et al. 2007). The stresses, associated with discrimination from pupils and teachers, problems with language acquisition, feelings of inadequacy, and everyday struggles that surround friendships, can place middle school-aged and adolescent children at an especially high risk for poor adjustment during the postdisplacement phase (Birman et al. 2005). Despite the historical focus on the acute stressors of war, the enduring contextual postmigration stress that internally displaced and refugee adolescents face, and which include marginalization, socioeconomic disadvantage, acculturation difficulties, loss of social support, should be assessed (Išpanović-Radojković et al. 1994; De Jong et al. 2001; Hollifield et al. 2002).

The aim of the present study was to investigate the differences between internally displaced adolescents and adolescents from Belgrade in relation to the socio-economic status and psychosocial functioning.

## Method

The study was performed in Belgrade in the period January–May 2000. The study comprised the final grades students of all high schools (gymnasium) in one of the central Belgrade municipalities.

Out of 638 students 560 (374 females and 186 males, aged  $18.1 \pm 0.9$  years) were interviewed, the response rate being 88%.

All participants were interviewed by the use of two self-administered anonymous questionnaires:

1. Specific questionnaire designed for this study included questions concerning demographic characteristics (age and sex), duration of living in Belgrade, change of residence and previous residence, and questions concerning some elements of socio-economic status (SES) as employment of family members (none, one, two or more), housing conditions (in comparison with the previous one: without change, worse, better; present settlement: privately owned home, rented home, guest

of cousins or friends; having separate room or shared room), as well as elements of social behavior in adolescents: socialization (having a friend Yes/No, source of best friend), school success (excellent, very good, good, sufficient), smoking (during the preceding month Yes/No, average number of cigarettes smoked per day), alcohol consumption (during the preceding month Yes/No, number of beverages consumed), and psychoactive substance use (during the preceding month Yes/No, number of times). Alcohol consumption, psychoactive substance use, and smoking were considered current in cases when participant, during the past month, drank  $\geq 1$  alcoholic drink of any type, used psychoactive substance  $\geq 1$  time or smoked at least one cigarette per day (CDC 2008).

2. Cornell Medical Index (CMI) is psychometric questionnaire designed as a rapid screening test for neuroticism (Gibson et al. 1967), which has been frequently used in our population, with overall good metric parameters (Cronbach coefficient of reliability 0.935, Guttman lower limit of reliability 0.926) (Momirović 2000). CMI is standardized for the population of youth aged 16–18 years as a shortened version containing yes/no answers. Respondents who had from 33 to 66% of affirmative answers were considered as subjects with slight neurotic symptoms, and those who had over 66% of affirmative answers were considered as individuals with extreme neuroticism.

Out of all participants, 32 adolescents, 20 (62.5%) girls, and 12 (37.5%) boys were internally displaced. They came to Belgrade immediately after the NATO campaign in 1999 from Kosovo. Internally displaced adolescents were compared with 528 adolescents, 354 (67.0%) girls, and 174 (33.0%) boys, who have been living in Belgrade for more than 10 years (in the following text referred to as adolescents from Belgrade).

Chi square test and Fisher's exact test were used to assess significance of differences between two compared groups. A level of  $\alpha = 0.05$  was used to indicate statistical significance. Data were analyzed using Statistical Package for Social Sciences, version 17 (SPSS Inc., Chicago, IL, USA).

The study was reviewed and given ethical approval by the Ethics Committee at the Faculty of Medicine in Belgrade.

## Results

In Table 1 are presented some sociodemographic characteristics of study participants. The compared groups did not

**Table 1** Sociodemographic characteristics of the internally displaced adolescents and adolescents from Belgrade, Belgrade 2000

Variable	Internally displaced adolescents ( <i>N</i> = 32) Number (%)	Adolescents from Belgrade ( <i>N</i> = 528) Number (%)	Statistical significance
Gender			
Female	20 (62.5)	354 (67.0)	$\chi^2 = 30.4$ ; <i>df</i> = 1; <i>p</i> = 0.815
Male	12 (37.5)	174 (33.0)	
Number of employed family members			
No one, one	13 (40.6)	135 (25.6)	$\chi^2 = 3.5$ ; <i>df</i> = 1; <i>p</i> = 0.061
Two or more	19 (59.4)	393 (74.4)	
Housing condition			
Without change	10 (31.3)	346 (65.3)	$\chi^2 = 57.1$ ; <i>df</i> = 2; <i>p</i> < 0.001
Worse	17 (53.1)	48 (9.1)	
Better	5 (15.6)	134 (25.4)	
Privately owned home	14 (43.8)	503 (95.3)	$\chi^2 = 112.9$ ; <i>df</i> = 1; <i>p</i> < 0.001
Rented home, quests of cousins or friends	18 (56.3)	25 (4.7)	
Have separate room	10 (31.2)	356 (67.4)	$\chi^2 = 17.4$ ; <i>df</i> = 1; <i>p</i> < 0.001
Have shared room	22 (68.8)	172 (32.6)	

*N* number, *df* degree of freedom

differ in sex distribution. In the group of internally displaced adolescents the percentage of employed family members was lower compared with families of adolescents from Belgrade, but the difference was not statistically significant ( $p = 0.061$ ).

More than a half of internally displaced adolescents estimated their living conditions at the time of investigation as worse compared with the previous ones: 53.1 versus 9.1% among adolescents from Belgrade ( $p < 0.001$ ). Majority of adolescents from Belgrade (95.3%) and only 43.8% of internally displaced adolescents lived in a privately owned home; 56.3% of internally displaced adolescents and 3.7% of adolescents from Belgrade rented a home or were quests of cousins or friends ( $p < 0.001$ ). More than one-third of adolescents from Belgrade (67.4%) had their own room, which was twice as much as the percentage of internally displaced adolescents (31.2%) who had their own room ( $p < 0.001$ ).

Compared groups did not significantly differ in smoking, alcohol consumption, and use of psychoactive substances (Table 2).

The adolescents from Belgrade had better school achievement: during the previous year, 47.7% of them completed schooling with great success, while only 28.1% of internally displaced adolescent achieved the same success ( $p = 0.002$ ) (Table 3).

Although a similar percentage of internally displaced adolescents and adolescents from Belgrade declared to have a best friend, they significantly differed in the choice of best friend ( $p < 0.001$ ). Internally displaced adolescents had significantly less frequently best friends from the

current environment (the school they were attending, neighborhood, sports team etc.) compared with adolescents from Belgrade (29.0 vs. 72.4%;  $p < 0.001$ )—Table 3.

The frequency of neuroticism, measured by the Cornell medical index, was somewhat greater in internally displaced adolescents (15.6%), than in adolescents from Belgrade (12.1%), but this difference was not significant. Respondents who had  $\geq 33\%$  of affirmative answers in CMI psychometric questionnaire were considered as subjects with neurotic symptoms. Among those with neuroticism, only one displaced adolescent had over 66% of affirmative answers, that is, had extreme neuroticism. No one of the participants had proved mental disorders until the end of the research.

## Discussion

The results of the study showed that internally displaced adolescents had significantly poorer housing conditions compared with the adolescents from Belgrade. They had also problems in adapting to a new environment which was reflected in the choice of best friend and a lower success in the school.

Worsening of housing conditions after displacement could be expected. Internally displaced adolescents lived mainly in rented flats or with relatives, which most probably affected the family budget.

According to Porter and Haslam (2005) postdisplacement conditions, including enduring contextual variables like postdisplacement accommodation and economic

**Table 2** Current alcohol consumption, cigarette smoking, and psychoactive substance use in the internally displaced adolescents and adolescents from Belgrade, Belgrade 2000

Variable	Internally displaced adolescents ( <i>N</i> = 32) Number (%)	Adolescents from Belgrade ( <i>N</i> = 528) Number (%)	Statistical significance
Alcohol consumption	18 (56.3)	374 (70.8)	$\chi^2 = 3.1$ ; <i>df</i> = 1; <i>p</i> = 0.080
Cigarette smoking	21 (65.6)	340 (64.4)	$\chi^2 = 0.0$ ; <i>df</i> = 1; <i>p</i> = 0.888
Psychoactive substance use	2 (6.3)	81 (15.4)	Fichers' exact test: <i>p</i> = 0.204

**Table 3** Psychosocial status and neuroticism in the internally displaced adolescents and adolescents from Belgrade, Belgrade 2000

Variable	Internally displaced adolescents ( <i>N</i> = 32) Number (%)	Adolescents from Belgrade ( <i>N</i> = 528) Number (%)	Statistical significance
Success in school			
Excellent	9 (28.1)	252 (47.7)	$\chi^2 = 12.8$ ; <i>df</i> = 2; <i>p</i> = 0.002
Very good	11 (34.4)	200 (37.9)	
Good, sufficient	12 (37.5)	76 (14.4)	
Have a friend			
Yes	31 (96.9)	490 (92.8)	$\chi^2 = 0.7$ ; <i>df</i> = 1; <i>p</i> = 0.380
Choice of best friend			
From current school, current neighborhood, sports team, dancing etc.	9 (29.0)	355 (72.4)	$\chi^2 = 26.1$ ; <i>df</i> = 1; <i>p</i> < 0.001
From elementary school, from previous neighborhood	22 (71.0)	135 (27.6)	
Neuroticism <sup>a</sup>	5 (15.6)	64 (12.1)	$\chi^2 = 0.3$ ; <i>df</i> = 1; <i>p</i> = 0.558

<sup>a</sup>  $\geq 33\%$  of affirmative answers in CMI psychometric questionnaire

opportunity, have moderated mental health outcomes. Worse outcomes were observed for refugees experiencing restricted economic opportunities, displaced internally within their own country, repatriated to a country they had previously fled, or whose initiating conflict was unresolved.

It is considered that psychosocial factors caused by internal displacement affect negatively the mental health of adolescents, which is reflected in the difficulties of accepting the new environment.

However, despite finding rather high rates of poor psychological outcomes such as PTSD, depression, and anxiety in the studied populations, several groups of researchers concluded that refugee children are a high-functioning group, and that their school performance and level of academic achievement are often unaffected (Fox et al. 2005; Geltman et al. 2005). In a study of Bosnian adolescent refugees resettled in Slovenia, Slodnjak also concluded that there was no difference in the levels of school performance between the refugee children and native Slovenian children (Slodnjak 2000). In our research, internally displaced adolescents had significantly lower school success comparing with adolescents from Belgrade although there was no language barrier and “Cultural

Bereavement” (defined as losing touch with the culture of home accompanied by a whole new set of cultural expectations, belief systems, and Social values by Lustig et al. (2004) could be considered as very low.

Factors which have been identified as protectors from stress during the refugee experience are classified into three groups: disposition of adolescents, including their self-esteem and response to new situations; family support and a positive relationship with at least one parent; and environmental support from teachers, peers, relatives, and healthcare providers (Lustig et al. 2004). Interventions in internally displaced and refugee population reviewed in literature can be classified into four types: individual-based, school-based, family-based, and community-based (Fazel and Stein 2003). The family intervention studied by Weine et al. (2003) was successful in both strengthening families and increasing their likelihood of requesting mental health services (Weine et al. 2003). The community-based interventions showed similar results (Weine et al. 2003; Hjern and Jeppsson 2005). School-based interventions provide a place for learning, but they also facilitate the development of peer relationships and the development of a sense of identity. For refugee children in

particular, schools can play an essential role in the successful integration into their new community and can serve as a strong foundation not only for educational, but also for social and emotional development, decrease of depressive symptoms, and self-esteem improvement (Fazel and Stein 2002; Fox et al. 2005; Rousseau et al. 2005). The fact that only 16% of internally displaced adolescents in our study selected the best friend from the school they attended after displacement and 60% had as a best friend from the neighborhood where they came from, suggest difficulties in integration into their new community.

One of the reasons that there were no differences in the frequency of neuroticism between compared groups could be that adolescents from Belgrade were also exposed to stressful events, that is, to NATO campaign in 1999. Immediately after the NATO campaign, adolescents from Belgrade and internally displaced adolescents reacted in the same way: they often talked about the events they had survived, they were afraid of the sound of the alarm siren and the sound of fighter planes, and dreamed similar situations (Maksimovic et al. 2005). Similar symptoms were expressed in adolescents in war-torn areas of neighboring countries. Ajduković studied the effects of war trauma and revealed the presence of psychological consequences in 50% of adolescents (Ajdukovic 1998; Vizek-Vidovic et al. 2000).

### Study limitations

The present study has some limitations. It was conducted at one point of time, and studies on the effect of displacement should be performed in both the immediate resettlement and long-term resettlement periods. In addition, the number of adolescents from war-torn areas who have attended the examined schools in Belgrade was small, and for a comprehensive conclusion, data from all over Serbia should be collected. The effect of displacement was mainly assessed indirectly, comparing characteristics of internally displaced adolescents with adolescents from Belgrade. Actually, we had no data about the majority of characteristics of adolescents before their displacement (details on housing conditions, smoking, alcohol consumption, psychoactive substance use, school achievement, choice of best friend). There is a possibility that the results of the study could differ if we had such information. For example, some adolescents could start smoking or drinking after displacement or their school achievement could be the same before and after displacement.

In conclusion, the significant differences between internally displaced adolescents and adolescents from Belgrade in some components of socio-economic status and psychosocial functioning suggest adverse effects of displacement. However, because of a relatively small

number of displaced individuals in the present investigation, larger and more detailed studies on the same subject would be desirable.

**Conflict of interest** The authors declare that they have no competing interests.

### References

- Ajduković M (1998) Displaced adolescents in Croatia: sources of stress and posttraumatic stress reaction. *Adolescence* 33(129): 209–217
- Baráth Á (1996) Creative therapies for war-traumatized children: 1991–95 Croatian experience. *Croat Med J* 37:174–184
- Bean T, Eurelings-Bontekoe E, Spinhoven P (2007) Course and predictors of mental health of unaccompanied minors in the Netherlands: one year follow-up. *Soc Sci Med* 64:1204–1215
- Birman D, Ho J, Pulley B, Batia K, Everson ML, Ellis H, et al (2005) White paper II from the National Child Traumatic stress Network. Mental Health interventions for refugee children in resettlement Los Angeles CA. US Department of Health and Human Services, Substance abuse and Mental Health Science Administration
- Centers for Disease Control and Prevention (CDC) (2008). Morbidity and mortality weekly report youth risk behavior surveillance, United States, 2007. Surveillance summaries. [www.cdc.gov/mmwr](http://www.cdc.gov/mmwr)
- Davies M, Webb E (2000) Promoting the psychological well-being of refugee children. *Clin Child Psychol Psychiatry* 5(4):541–554
- De Jong JT, Komproe IH, Van Ommeren M, El Masri M, Araya M, Khaled N, van De Put W, Somasundaram D (2001) Lifetime events and posttraumatic stress disorder in 4 postconflict settings. *JAMA* 286:555–562
- Fazel M, Stein A (2002) Review: The mental health of refugee children. *Arch Dis Child* 87:366–370
- Fazel M, Stein A (2003) Mental health of refugee children: comparative study. *BMJ* 327:134
- Fox P, Rossetti J, Burns K, Popovich J (2005) Southeast Asian refugee children: a school-based mental health intervention. *Int J Psychiatr Nurs Res* 11(1):1227–1237
- Geltman P, Grant-Knight W, Mehta S et al (2005) The “lost boys of Sudan”: functional and behavioral health of naccompanied refugee minors resettled in the United States. *Arch Pediatr Adolesc Med* 159:585–591
- Gibson H, Hanson B, West DJ (1967) A questionnaire measure of neuroticism using a shortened scale derived from the Cornell Medical Index. *Br J Soc Clin Psychol* 6:129–136
- Hjern A, Jeppsson O (2005) Mental health care for refugee children in exile. In: Ingleby D (ed) *Forced migration and mental health: rethinking the care of refugees and displaced persons* (115–127). Springer Science and Business Media, New York
- Hollifield M, Warner TD, Lian N, Krakow B, Jenkins JH, Kesler J, Stevenson J, Westermeyer J (2002) Measuring trauma and health status in refugees: a critical review. *JAMA* 288:611–621
- Internal Displacement Monitoring Centre (2007) *Internal Displacement: Global Overview of Trends and Developments in 2006*. Internal Displacement Monitoring Centre, Geneva
- Išpanović-Radojković V, Bojanin S, Tadić N (1994) Protection of children and youth mental health in former Yugoslavia (1991–1993). In: *Stress of war*. Institut za mentalno zdravlje, Beograd (in Serbian)
- Lustig SL, Kia-Keating M, Knight WG, Geltman P, Ellis H, Kinzie JD et al (2004) Review of child and adolescent refugee mental health. *J Am Acad Child Adolesc Psychiatry* 43(1):24–36

- Maksimović M, Kocijančić R, Backović D, Ille T, Paunović K (2005) Adaptation and mental-hygienic characteristics of internally displaced adolescents. *Srp Arh Celok Lek* 133(5–6):266–271
- Momirović K (2000) Metric characteristics of some tests of neuroticism. *Psihologija* 33(3–4):483–490 (in Serbian)
- Porter M, Haslam N (2005) Predisplacement and postdisplacement factors associated with mental health of refugees and internally displaced persons a meta-analysis. *JAMA* 294:602–612
- Pumarięga A, Rothe E, Pumarięga J (2005) Mental health of immigrants and refugees. *Commun Ment Health J* 41(5): 581–597
- Rousseau C, Drapeau A, Lacroix L, Bagilishya D, Heusch N (2005) Evaluation of a classroom program of creative expression workshops for refugee and immigrant children. *J Child Psychol Psychiatry* 46(2):180–185
- Slodnjak V (2000) Psychosocial functioning of Bosnian refugee adolescents in Slovenia. In: Powell S, Durakovic-Belko E (eds) Sarajevo 2000: The psychosocial consequences of war (200–204). UNICEF, Sarajevo, Bosnia, Herzeęovina
- UNHCR (2007) UNHCR statistical yearbook 2006. UNHCR, Geneva
- UNHCR United Nations, High Commissioner for Refugees (1996) Census of Refugees and other war- affected persons in the Federal Republic of Yugoslavia. Belgrade
- United Nations High Commissioner for Refugees (2006) World Refugee Survey 2006. Retrieved 25 February 2007, from <http://www.refugees.org/article.aspx?id=1614>
- Vizek-Vidović V, Kuterovac-Jagodić G, Arambašić L (2000) Post-traumatic symptomatology in children exposed to war. *Scand J Psychol* 41(4):297–306
- Weine S, Raina D, Zhubi M, Delesi M, Huseini DZ, Feetham S et al (2003) The TAFES multi-family group intervention for Kosovar refugees. *J Nerv Ment Dis* 191(2):100–107