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ORIGINAL PAPER

Psychosocial Problems Among Children of Parents with Posttraumatic Stress Disorder

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Background: To assess the expression of psychosocial problems among children of parents with posttraumatic stress disorder (PTSD). **Material and methods:** A group of 100 children of school age (from 10 to 5 years old) from two randomly chosen schools has been analyzed. Children from complete families whose parents accepted psychometric measurement related to trauma have been chosen. Subjects were divided into two groups: a group of children whose parents express the symptoms of posttraumatic stress disorder (PTSD)–experimental group (N=50) and group of children whose parents are not suffering from PTSD–control group (N=50). The assessment of PTSD symptoms and parental traumatisation is done by Harvard Trauma Questionnaire–version for Bosnia and Herzegovina (B&H) (Allden et al., 1998), behavioral problems were assessed by Child Behavior Checklist – as reported by parents (CBCL, Achenbach, 1991), the level of traumatisation and posttraumatic symptoms in children by the Impact of Event Scale (Horowitz, Wilner, Alvarez, 1979), and neurotism and extraversion is estimated by Neurotism and Extraversion Scale (HANES). With regard to gender and parental participation the sample is homogenous. Data are processed by descriptive statistics method. **Results:** Children whose parents are suffering from PTSD symptoms show statistically significant increase in behavioral problems such as withdrawal, somatic complaints, thought problems, delinquent and aggressive behavior ($p<0.001$), anxiety/depression, attention deficit and problems in social relations ($p<0.005$). Male subjects showed more prominent delinquent behavior ($p<0.01$). Children whose parents have PTSD symptoms show significantly expressed internalisation ($p<0.001$) and higher level of stress ($X^2=23.528$, $p<0.001$), compared to children of parents without PTSD. There is statistically significant difference regarding the mean (M) of symptom groups among the analyzed groups of subjects related to the symptoms of intrusion ($p<0.01$) and symptoms of avoidance ($p<0.001$). Significantly expressed neurotism is present in children of parents with PTSD ($p<0.001$). **Conclusion:** The results show that children of parents with PTSD express a significant behavioral problems, higher level of neurotism, internalisations, posttraumatic stress reactions, symptoms of intrusion and avoidance as well as significantly higher level of stress compared to children of parents without PTSD. Key words: Psychosocial Problems, Children, Parents, Posttraumatic Stress Disorder.

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1. INTRODUCTION

Psychopathology of parents can significantly influence child's development. Many studies have indicated that psychopathology of parent's results in psychological effects on children (Rutter, Taylor & Hersov 1992; Rosebhesk & Fontana 1998; Hwang & Nilson 2000). Family dynamics in which parents are suffering from mental disorder can have a toxic effect on child because children become an integral element of this dynamics (Daneš 2006). Various traumatic experiences as specific symptoms can represent a specific impact of parental psychopathology within family milieu, including children, family, relations, parental image, status and role in the family and society (Thabet et al. 2008; Daneš & Horvat 2005). In the last period, a chronic multiple untreated trauma and its resistance to treatment aroused interest in families with persons suffering from posttraumatic stress disorder (PTSD). Through establishing everyday contacts with traumatized persons, children are secondarily traumatized and frustrated (Yehuda et al. 2007). Traumatized parents are less responding and show insufficient resistance. Harmony between parents and children is broken by trauma (Butollo 2000). Malignant contamination

transmitted to the closest ones by traumatized persons is generally confirmed today. The closest, especially children of traumatized persons, being continually frustrated in their efforts to establish contacts, become secondarily traumatized (Bean et al. 2008). A form of coping with adjustment and socialization among children depends on psychological and social organization. It is known that overprotected children are more emotionally unstable and hardly cope with frustrations and failure (Hwang & Nillson 2000). The aim of this study is to assess the expression of behavioral and psychological problems among children of parents with posttraumatic stress disorder (PTSD).

2. SUBJECTS AND METHODS

Two elementary schools from Tuzla municipality were randomly selected. This study was carried out during 2003 and 2004. A questionnaire used in the sample (200 children) consists of items including age, sex, earlier recorded mental and behavioral problems, family structure and parental consent for participation in the study. Children, aged 10 to 15 years, were enrolled in this study. Out of 200 children, the 182 children who live with both parents and have had parental consent for participation were included. Parents who gave their consent were assessed on the presence of PTSD symptoms by Harvard Trauma Questionnaire–HTQ version for Bosnia and Herzegovina (Mollica et al. 1998). The questionnaire consists of four sections: traumatic life events, subjective description of the most horrible traumatic events they have experienced, a head injury, and a section related to PTSD symptoms and ability to function in everyday life. The results are considered positive if a total score of PTSD symptoms was more than 2.5. A stratified sample of 100 children is formed from 200 children.

Children from complete families, with no earlier detected mental or behavioral problems nor psychiatric and psychological treatment offered, and whose parents do not have other somatic or mental disorders were examined. A group of 50 children with one parent having PTSD score >2.5 on HTQ is formed, as well as a group of 50 children whose parents have had PTSD score < 2.5.

Out of total sample of fathers, the PTSD symptoms were present in 78, no PTSD symptoms are found in 22, while 64 mothers showed PTSD symptoms and 36 mothers did not show PTSD symptoms. There was an equal number of male and female in both groups of children.

The Child Behavior Checklist (CBCL) (Achenbach 1991) is used to assess behavioral problems in children. It consists of competency subscale and symptom and problem subscale. Competency subscale includes: activity, sociability and school. Symptom subscale includes 9 groups: 1-anxiety/depressivness, 2–unhappiness/depressiveness, 3–somatic problems/complaints, 4–social problems, 5–problems in thought process, 6–attention problems, 7–rules violation, 8–aggressive behavior and 9–other problems. Internalization is a sum of symptom scales 1+ 2+3 group, and externalization is a sum of symptoms scales 7+8 groups. Child Behavior Checklist was reported by parents. Impact of Event Scale (Horowitz, Wilner & Alvarez 1979) is used to assess the impact of event. It is a measure of subjective stress and response, consisting of two subscales: symptoms of intrusion and symptoms of avoidance. Level of stress scored from 0 to 19 is considered to be low, from 20 to 29 a mild, and from 40 to 75 a high level of stress. Children completed their questionnaire in the presence of school pedagogue who was previously informed about study and learned how to apply the scales. Hamburg Adolescent Neurotism and Extraversion Scale (HANES) (Buggle & Baumgartel 1965) is applied to assess neurotism among children, in which self-report method is used to determine personality traits such as: neurotism, emotional instability, extraversion and introversion. Sociodemografic questionnaire consists of data about sex, age, family structure and a number of family members.

The results expressed as mean and standard deviation were evaluated with χ2-test, ANOVA. The statistical analyses were performed by using SPSS for Windows 10.0. The level of statistical significance was set at $P < 0.05$.

Socio-demografic caracteristics	Sample groups: Children parents with PTSD symptoms		Children parents without PTSD symptoms		df	X^2	P
	N	%	N	%			
Number of members family						6.27	0.180
3 members	4	4.0	4	4.0	4		
4 membersna	29	29.0	39	39.0	4		
5 members	12	12.0	6	6.0	4		
6 members	4	4.0	1	1.0	4		
7 members	1	1.0	/	/	4		
Number of children in the familyi						8.42	0.038
1 child	4	4.0	5	5.0	3		
2 children	29	29.0	40	40.0	3		
3 children	13	13.0	4	4.0	3		
4 children	4	4.0	1	1.0	3		
Hausing situation						7.57	0.056
Apartment	8	8.0	18	18.0	3		
Their own hous	31	31.0	26	26.0	3		
Tenant	8	8.0	6	6.0	3		
Collective houing	3	3.0	/	/	3		
Ekonomic status family						1.60	0.658
Very good	4	4.0	4	4.0	3		
Good	36	36.0	40	40.0	3		
Bad	5	5.0	4	4.0	3		
Very bad	5	5.0	2	2.0	3		
Place of residence						2.43	0.096
City	38	38.0	44	44.0	1		
Willage	12	12.0	6	6.0	1		

Table 1. Socio-demografic caraceristics children of parents with posttraumatic stress disorder

Influence of psychological and physical status of parents on child	Sample groups				
	Children parents with PTSD symptoms		Children parents without PTSD symptoms		Total
	N	%	N	%	N %
Not at all or little	15	30.0	33	66.0	48 48.0
Moderate	18	36.0	11	22.0	29 29.0
Much	15	30.0	5	10.0	20 20.0
Very much	2	4.0	1	2.0	3 3.0
Total	50	100.0	50	100.0	100 100.0

Table 2. Distribution of subjects according to the influence of psychological and status of parents on child and group sample

Stress level	Sample groups				
	Children parents with PTSD symptoms		Children parents without PTSD symptoms		Total
	N	%	N	%	N %
Low stress level(0-19)	15	30.0	39	78.0	54 54.0
Moderate stress level(20-39)	26	52.0	8	16.0	34 34.0
High stress level(40-75)	9	18.0	3	6.0	12 12.0
Total	50	100.0	50	100.0	100 100.0

Table 3. Distribution of subjects according to level of subjective stress on Impact of Event Scale and sample groups

3. RESULTS

Out of total sample, most children (n=100) live in 4 to 5 members family. Significantly larger number of children of parents with PTSD have more brothers and sisters compared with children whose parents do not have PTSD (χ^2 = 8.42, df = 3, P < 0.05) (Table 1).

The largest number of children (n=33) of parents without PTSD reported that mental and physical status of their parents do not exert influence on them. The largest number of children (n=33) whose parents have PTSD reported that mental and physical status of parents have had moderate to strong impact on them. Significantly larger number of children in a group with parents suffering from PTSD compared to children whose parents have no PTSD reported on moderate to strong impact of mental and physical status of parents on them (χ^2 = 13.77, df = 3, P =<0.005) (Table 2).

On the Impact of Event Scale, children of parents with PTSD symptoms showed significantly higher level of stress compared to children of parents without PTSD symptoms (χ^2 = 23.52, df = 3, P<0.001) (Table 3).

Out of total sample, the girls showed significantly higher level of stress then boys (χ^2 =13.33, df = 3, P <0.01). With regard to group symptoms of the impact of event, children of parents with PTSD have had significantly intensified symptoms compared to children of parents without PTSD (Table 4).

There was no significant difference in the intensity of symptoms of the impact of event between girls and boys (P > 0.5). The mean of level of activity (M = 31.30; SD =6.3), social functioning (M =7.07, SD =1.76) and school functioning (M = 3.82, SD =0.97) was within normal values in both groups of children. There was no significant difference in a level of activity, social and school functioning between group of children of parents with PTSD and group of children of parents without PTSD (P >0.05), nor between girls and boys (P >0.05). With regard to symptoms expression on the Child Behavior Checklist, a significant difference was found between children of parents with PTSD and children of parents without PTSD (Table 4).

Regarding sex, a significantly grater tendencies toward delinquent behavior was found in boys then in girls (M±SD 3.24± 4.02: M±SD 2.92 ±2.98, P >0.01). The mean of symptoms internalization – externalization was within normal values in both groups of subjects (M±SD 59.20±58.34: M±SD 53.97±53.29, P >0.05). Also, the aver-

Symptoms	Sample groups				F	P
	Childrenparents with PTSD symptoms		Childrenparents without PTSD symptoms			
	M	SD	M	SD		
Group symptoms intrusion	10.14	7.23	4.92	7.38	12.75	0.001
Group symptoms intrusion	16.06	10.28	7.56	8.53	20.21	0.000
Level of stress	26.22	15.57	11.44	14.42	24.23	0.000

Table 4 . Distribution of subjects according to symptoms on the Impact of Event Scale and sample groups

Symptoms	Sample groups				F	P
	Childrenparents with PTSD symptoms		Children parents without PTSD symptoms			
	M	SD	M	SD		
Activity	31.30	6.3	31.36	5.7	0.30	0.584
Social competence	43.75	5.60	43.46	7.1	0.05	0.823
School competence	40.42	6.9	42.12	6.9	1.56	0.214
Anxiety/depression	60.70	9.55	55.60	6.97	9.29	0.003
Withdrawal/depression	58.16	7.63	53.30	4.16	15.62	0.000
Somatic probems	58.48	7.88	52.92	4.78	18.17	0.000
Socialproblems	59.60	8.68	55.18	6.33	8.45	0.005
Trought problems	57.32	9.29	51.88	4.21	14.22	0.000
Attention problems	56.48	7.61	52.62	3.88	10.20	0.002
Rules violation/ Delinquent behavior	57.38	8.00	52.56	3.65	15.02	0.000
Aggressive behavior	58.74	8.81	53.94	6.95	9.15	0.003
Internalization	59.20	7.53	53.96	4.26	18.27	0.000
Externalization	58.34	8.22	53.29	5.02	13.74	0.000
Total T scor	58.34	6.92	53.53	3.91	18.22	0.000

Table 5. Distribution of subjects according to symptoms on Child Behavior Check List and sample groups

Symptoms	Sample goups				F	P
	Childrenparents with PTSD symptoms		Childrenparents without PTSD symptoms			
	M	SD	M	SD		
N-1	7.18	1.62	4.82	1.85	45.67	0.000
N-2	6.76	1.92	5.28	2.38	11.28	0.001
N-3	6.88	1.72	4.96	2.07	25.28	0.000
E-1	6.66	1.67	7.12	1.56	2.02	0.158
E-2	4.82	2.12	4.64	1.80	0.21	0.649
E-3	5.64	2.06	6.12	1.66	1.64	0.204
L	6.06	2.15	6.30	2.25	0.29	0.587

Table 6. Distribution of subjects according to Neurotism and Extraversion-Introversion Scale and sample groups N1-neurotism-Hanes 1, N2-neurotism-Hanes 2, N3-total neurotism (N1+N2), E1-extraversion-Hanes 1, E2-extraversion-Hanes 2, E3-total extraversion (E1+E2), L-sincerety/untruthfulness

age values of behavioral problems on all examined dimensions were within the reference range. The symptoms of neurotism measured by HANES were within normal values in both groups of children. However, children of parents with PTSD symptoms compared to children of parents without PTSD symptoms showed a significantly higher level in total neurotism, value of neurotism HANES (Table 5).

Out of total sample, the boys were presented with more expressed symptoms on the dimension of socially passive behavior compared to girls (P <0.05).

4. DISCUSSION

This study found that children of parents with PTSD symptoms show a higher level of withdrawal, more problems in thought process, more somatic problems, and more expressed delinquent and aggressive behavior then children of parents without PTSD symptoms. They too express grater difficulties to maintain attention and concentration, more anxiety and depressiveness, and more disturbances in social relations. Keppeel-Benson & Olendick (1993) and Hasanović et al. (2006) found similar results in their studies with traumatized children and adolescents. Children from this study compared to children from the above mentioned studies were not directly exposed to traumatic events. Also, this study found that a level of neurotism on all subscales was higher among children of parents with PTSD symptoms compared to children of parents without PTSD. Children of parents with PTSD symptoms showed more neurotic traits accompanied with symptoms of psychosomatic reactions. Increased neurotism is found in children who express symptoms of PTSD (Daneš & Horvat, 2005). The results of this study showed that the obtained values are related to behavioral problems among children, and the values of neurotic traits were within normal values, which might be explained with the fact that sample consisted of children of school age who did not manifest behavioral and psychological problems, and were not in psychological or psychiatric treatment. Yehuda, Halligan & Bierer (2001) in their study with adult subjects whose parents were Holocaust survivors found that parental exposure to trauma is particularly related to the prevalence of depression and PTSD in children. In this study, the symptoms of posttraumatic stress reactions were also significantly more expressed in children whose parents have PTSD then in children whose parents do not have PTSD. Children of traumatized parents showed significantly expressed symptoms of intrusion (P<0.01) and avoidance (P<0.001) compared to children of non-traumatized parents. Results of this study are in accordance with conclusions of Yehuda, Hollder & Bierer study (2001) that PTSD of parents might be a risk factor for PTSD development in children. Namely, children who were born after the war in Bosnia and Herzegovina were enrolled in this study, thus they were not directly exposed to the war-traumatic events. In certain way, parental exposure to traumatic events and parental symptoms of PTSD within specific relations such as family relations act as traumatic events responsible for the occurrence of symptoms of posttraumatic stress reactions in children. Correlation was found between the values of symptoms of posttraumatic stress reactions and a level of stress present among children of psycho-traumatized parents. Children of parents with PTSD symptoms showed significantly moderate to high level of stress compared to children of parents without PTSD. It can be said that parental trauma and symptoms of PTSD in parents were stressful for children. A stressing impact of parental psychopathology on children is found in the studies of other types of mental disorders (Chicceti & Toth, 1995). Studies showed the presence of direct connection between PTSD symptoms in parents and children response (Rosenheck & Fontana 1998; Dansby & Marinelli, 1999). Moderate to high level of stress that is found in this study among children of parents with symptoms of PTSD has confirmed the recent studies related to children's response to parental symptoms of PTSD (Solomon, Kotler & Mikulincer, 1988; Schwartz, Dohrenwend & Levav, 1994). With regard to activity, school and social functioning, children of parents with PTSD did not differ from children of parents without PTSD. The obtained result might be explained with those children of traumatized parents attempt to easier cope with stress and symptoms of posttraumatic reactions related to parental trauma through the activities, studying and social involvement. Antelman and Cagginla (1980) reported that stressful conditions represent an attempt to reduce or eliminate stress through intensified or adequate activity as a form of self-therapy. The girls in this study have shown a higher level of stress then boys, while there was no difference in the intensity of symptoms of posttraumatic reactions between girls and boys. To possibly explain the results obtained, it can be said that indirect traumatization is equally stressful for boys and girls. One limitation of our study was a small sample of children. Other limitation of this study beside parental trauma was that children could be influenced by continual exposure to TV mass-graves photos and other TV scenes related to previous war in Bosnia and Herzegov-

ina, a variable which could not be controlled in this study.

Our results indicate that parental PTSD and parental traumatization can represent the factors for vulnerability of children, development of posttraumatic stress reactions, psychological and behavioral problems among children.

The importance of this study is that early detection of deviation in child development may help prompt and adequate interventions with the aim to prevent development of PTSD and mental disorders in adulthood.

5. CONCLUSION

The children of parents with PTSD express a significant behavioral problems, higher level of neurotism, internalisations, posttraumatic stress reactions, symptoms of intrusion and avoidance as well as significantly higher level of stress compared to children of parents without PTSD.

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