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POSTTRAUMATIC STRESS DISORDER AND DEPRESSION REDUCED AFTER PSYCHOSOCIAL ASSISTANCE IN PRIMARY AND SECONDARY SCHOOLS IN POST-WAR BOSNIA HERZEGOVINA

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INTRODUCTION

War-related trauma in children which may be of diverse origin accumulates over time and can endanger social, moral, and healthy personality development of the child in many ways (1). The 1992-1995 war in Bosnia and Herzegovina (BH) has had extensive and long-lasting effects. In the aftermath of the war, thousands of individuals have numerous traumatic experiences (2, 3). Among the most affected groups were children from the front lines, witnesses of war, refugees, and displaced persons (2). Many children suffered or witnessed horrifying acts of violence and aggression. Young war victims, moved forcibly to escape their homes are frequently subjected to multiple traumatic events and severe losses, as well as ongoing stresses within the host country. Although young refugees and displaced persons are often resilient, many experience mental health difficulties. In Bosnia and Herzegovina, war-related trauma is still a major public health problem. The prevalence of post-traumatic stress disorder (PTSD) has been a largely neglected subject (4, 5). Teachers and parents were the first who started recognizing the symptoms of post-traumatic stress disorder in an alarmingly high number of children (10, 11). As a consequence, the children who lived in fosterive settlements during the war in BH were in urgent need for professional help (12). Research has shown that the effects of war experiences may be present many years after the exposure to traumatic events (12).

To assist victims of war catastrophes in BH together with the institutions of medical character, non-governmental organizations (NGOs) played an important role by systematically developing and conducting a number of projects for psychosocial assistance to the persons in need (13).

The first assistance of the international organization "Amica e.V. Freiburg, Germany was provided by shipping food, clothing and hygiene to Bosnia and Herzegovina and Croatia. In 1994, this organization established its permanent mission in the Tuzla Canton, whereas "Prijateljice" overtook and continues with started activities as a local non-governmental organization in 1998. In 1997, the "Prijateljice" started with the project implementation in schools located in the Tuzla Canton in order to assist children returned from abroad to follow-up local curricula. This assistance involved organization of additional hours for children that started their education in other European countries in order to overcome a transition period of accommodating to the subjects of national subjects, mathematics, as well as the education system in the Federation of BH in general.

Since a two-way direction of return process of BH population to their pre-war places of residence has intensified, the project has been modified in accordance to specific needs. As late as 2000, the project got the new content in order to support an idea of forming a unique school system in Bosnia-Herzegovina. Besides several aims to influence the implementation of the unique school system in Bosnia-Herzegovina. Besides several aims to influence the implementation of the unique school system in Bosnia-Herzegovina. Besides several aims to influence the implementation of the unique school system in Bosnia-Herzegovina.

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The aim of the study was to assess the effect of a part of large-scale psychosocial aid program for Bosnia and Herzegovina (14) launched in 1995 by the Humanitarian Association of "Prijateljice" (UHD "Prijateljice").

Participants and Methods

Study design

The project "Supporting to students during fitting in unique school system in postwar Bosnia and Herzegovina" is an initiative to provide education, on reconstruction of students, parents, teachers and school managers and sport in BH return to education.

Study groups were students aged 12-15 years, who survived war traumas, of three different nationalities (Serbs, Bosnians, and Croats) in primary and secondary schools that are involved in the project. Also parents, involved students, teachers and professors of involved students, and school managements of the schools where the project was implemented, have been involved in the project.

The project involves 400 students in ten schools which are paired due to the partnership in two BH post-war areas: Republic of Srpska (RS) and Federation of Bosnia and Herzegovina (FBiH).

The project team was consisted of four university educated professionals (two male and three females) in the field of pedagogy, which have regular monthly supervision with a certified supervisor.

On selecting both primary and secondary schools, we took into consideration places FBiH with as many as possible displaced students and in RS with as many as possible returned to their pre-war places of living.

Questionnaires between students of different nationalities were written, so upon recommendation of OSCE mission in BH the "School Project" team extended the project activities to the school.

In objectives of the School Project are to support to unique school system in BH concerning that students from one entity to another may freely continue with their schooling, not dropping a school year or passing national exams from certain subjects that differ from one entity to another.

Selection of students involved in the project

Every school (eight elementary and two secondary) one teacher was engaged who has a coordinating role. They formed a student groups in certain schools using the selection criteria in both Federation of BH and RS: students who experienced war atrocities during the war in Bosnia and Herzegovina, when they were forced to leave their homes under the threatening conditions, 3) students stayed at their homes during the war and war period, 4) and students who were prevented to return to their homes despite war was finished and 5) students who returned to their reconstructed homes with their parents after war finished in December 1995.

Project activities are considered as free activities, students are included per their wish and affluence, if it fits into when the activities are realized, either before or after regular classes and on weekends.

Participants

"School Project" was approved from both Ministries for Education, Culture and Sport of Tuzla Canton from Ministry of Education and Culture of Republic of Srpska. All procedures and aims of the project were read with the directors of the elementary and secondary schools involved in the "School Project". Parents were informed consenters for the children to participate in the study. All of the potential participants were invited. The study involved 400 students, who volunteered to participate in the research. Regarding national affiliation of 400 involved students, sample was divided into the two groups. The first group was consisted of 200 students, who were involved in the "School Project". The second group was consisted of 200 randomly selected students from the same schools and age-groups, but not involved in the project of the NGO. Out of 400 students involved in the School Project, 179 (44.75%) were from the Republic of Srpska (RS). There was statistically significant difference in the number of students on a basis of the entity origin ($P=0.230$).

Age-periodicity age was 13 for 5 years and there was no statistical significant difference in the average age of participants among groups in the sample ($F=0.712$, $P=0.476$).

Results

There was no significant difference in frequency of traumatic experiences among participants, except for destroyed houses, which trauma was involved in the School Project had significantly more often ($P=0.003$).

Table 1. Distribution of adolescents according to frequencies of trauma experiences amongst 400 adolescents in Bosnia and Herzegovina who had (n=200) and who had no assistance of Association Humanitarian Society in the School Project (n=200), ten years after 1992-95 war finished

Trauma	No psychosocial help n=200		Psychosocial help n=200		Chi-square	df	P*
	Yes	No	Yes	No			
Refugee abroad	62 (31.0)	131 (65.5)	74 (37.0)	61 (30.5)	1.673	1	0.198
Forced return	18 (9.0)	5 (2.5)	23 (11.5)	2 (1.0)	0.295	1	0.585
Forced to leave home during the war	145 (72.5)	26 (13.0)	167 (83.5)	20 (10.0)	0.149	1	0.708
Witness	65 (32.5)	70 (35.0)	79 (39.5)	11 (5.5)	0.278	1	0.604
Lost family member during the war	130 (65.0)	36 (18.0)	166 (83.0)	10 (5.0)	0.408	1	0.524
Witness killed	53 (26.5)	11 (5.5)	64 (32.0)	8 (4.0)	0.019	1	0.889
Father killed	27 (13.5)	5 (2.5)	32 (16.0)	2 (1.0)	0.090	1	0.777
Uncle killed	66 (33.0)	12 (6.0)	78 (39.0)	10 (5.0)	0.240	1	0.624
Grandfather(s) killed	40 (20.0)	3 (1.5)	43 (21.5)	1 (0.5)	0.223	1	0.634
Close relative killed	43 (21.5)	7 (3.5)	50 (25.0)	4 (2.0)	0.476	1	0.491
Close friend killed	10 (5.0)	5 (2.5)	15 (7.5)	2 (1.0)	0.084	1	0.829
Good friend killed in the war	29 (14.5)	6 (3.0)	35 (17.5)	8 (4.0)	0.421	1	0.518
Destroyed houses in the war	99 (49.5)	9 (4.5)	108 (54.0)	8 (4.0)	0.007	1	0.932
Lived in war zone at the time	149 (74.5)	15 (7.5)	164 (82.0)	10 (5.0)	0.506	1	0.478

* χ^2 test.

However, students involved in the School Project have experienced, on average, statistically more traumatic experiences (7.4) compared to their peers from the control group (5.0) (t -test=3.260, $P=0.001$).

In accordance with the DSM criteria, during the first measuring, PTSD was reported at total of 43.4% of participants in a total sample. Students involved in the School Project had a statistically significant higher prevalence of PTSD 46.1%, compared to the students (30.5%) who were not involved in the psychosocial project (Chi-square test=5.858, $P=0.016$).

Table 2. Prevalence of posttraumatic stress disorder (PTSD) and depression amongst Bosnia and Herzegovina students from both entities, involved (n=200) and not involved in psychosocial assistance - School Project (UHD "Prijateljice") (n=200)

Diagnosis	No psychosocial help n=200		Psychosocial help n=200		Chi-square	df	P*
	Yes	No	Yes	No			
PTSD A	155 (77.5%)	22 (11.0%)	177 (88.5%)	5 (2.5%)	5.826	1	0.016
PTSD B	45 (22.5%)	17 (8.5%)	62 (31.0%)	4 (2.0%)	4.804	1	0.028
Depression A	86 (43.0%)	16 (8.0%)	102 (51.0%)	0 (0.0%)	0.360	1	0.549
Depression B	6 (3.0%)	8 (4.0%)	14 (7.0%)	15 (7.5%)	15.561	1	<0.001

* χ^2 test.

*The first testing took place at the beginning of December 2005.

*The second testing took place at the end of May 2006.

In accordance with the DSM criteria, during the first measuring, depression was reported at total of 25.0% of participants in the total sample. Students involved in the School Project had a prevalence of depression 23.6%, which was not statistically significant compared to the students (22.2%) who were not involved in the psychosocial project (Chi-square test=0.360, $P=0.549$) (Table 2).

The second measuring showed 13.4% of students with PTSD in the group involved in the School Project, which is statistically significant reduction, according to McNemar test ($P=0.016$). In the group not involved in the School Project, there was also been reduction in the prevalence of PTSD to 23.6%, which is not statistically significant, according to McNemar test ($P=0.332$) (Table 3). In the second measuring, statistically more students who were not involved in the School Project (23.6%) had PTSD, compared to those that were involved 13.4% (Chi-square test=4.804, $P=0.028$).

Table 3. Distribution of students according to prevalence PTSD after first and second testing regarding involvement in the School project of psychosocial assistance in Bosnia and Herzegovina ten years after war 1992-95 finished

Involved in the psychosocial help	PTSD - second test			Chi-square	P**	McNemar's P	
	First test	Total					
		Yes	No				
YES	Yes	30	123	153	11.047	<0.001	
	No	13	168	181			
	Total	43	291	334			
NO	Yes	11	11	22	12.242	<0.001	0.532
	No	6	44	50			
	Total	17	55	72			

* χ^2 test, df=1.

*The first testing took place at the beginning of December 2005.

*The second testing was done at the end of May 2006.

The second measuring showed 1.8% of students with depression in the group involved in the School Project, which is statistically significant reduction, according to McNemar test.

Table 4. Distribution of students according to prevalence depression after first and second testing regarding involvement in the School project of psychosocial assistance in Bosnia and Herzegovina ten years after war 1992-95 finished

Involved in the psychosocial help	Depression - second test			Chi-square	P**	McNemar's P	
	First test	Total					
		Yes	No				
YES	Yes	4	32	36	5.411	0.020	<0.001
	No	2	248	250			
	Total	6	280	286			
NO	Yes	4	11	15	4.016	0.045	0.071
	No	4	52	56			
	Total	8	63	71			

* χ^2 test, df=1.

*The first testing took place at the beginning of December 2005.

*The second testing was done at the end of May 2006.

In the group not involved in the School Project, there was also been reduction in the prevalence of depression to 11.1%, which is statistically non-significant, according to McNemar test (Table 4). In the second measuring the prevalence of depression was statistically higher among not involved students in the School Project (11.1%), compared to those that were involved (1.8%) (Table 2).

DISCUSSION

During the second measurement in our research, the prevalence of PTSD and depression was significantly reduced in the group where the members of the School project team worked in compliance with their plan and program of psychosocial help and decrease of prevailing prejudices on acceptance and tolerance as well as on increase of aggressive features among children by counseling children, parents, teachers and school management in both entities, as well as establishment of "Students' clubs" as a legal part of schools in which they work. Our findings are similar to findings of other researches about effects of psychosocial support for war-traumatized children and adolescents (12, 19).

The PTSD and depression rate among studied participants were similar to other studies or reports of PTSD and depression rates among children and adolescents from Bosnia and Herzegovina (2, 5, 8, 14). Presence of PTSD and depression among the students of both entities in North-Eastern Bosnia did not differ statistically.

Our research showed that in the first testing among studied population there were no significant statistical differences in the report of certain traumatic experiences between the group involved in the "School Project" and the control group except in cases where students' houses were destroyed. The group of students involved in the school project reported statistically more houses destroyed. All investigated students had a number of traumatic experiences during the war, especially loss of their close family members, which has been described in the literature (2, 5, 7, 8, 10, 14, 19).

Our research has certain limitations taking into account a number of civil war traumas that the children were exposed to. Measurement of PTSD and depression level ten years after the war cannot be an assurance that the obtained results are only based on war trauma consequences. The level of PTSD and depression can increase or decrease over a period of time for unknown reasons (5). It is still known about these children, what social experiences they had and additional traumas after the war considering the fact that BH is in its transition period with constant changes of social framework.

Findings in the research can be used for recommendations in enhancement and improvement of primary and secondary educational system that besides the regular teaching should also have aspects of psychosocial support for the traumatized students. Awareness of trauma of students can help teaching staff and school management to develop more efficient approaches in their working with these students instead of a repressive approach. This School project that justified its existence can be an example for development of new similar projects that should be included in all existing primary and secondary schools if possible. Schools and other institutions ought to strive as many as possible projects to be implemented in schools and out-of-schools in order to assist youth to easier overcome consequences of no favorable war in their development. There is a need to implement health promotion and preventive programs for adolescents.

Further research is needed to better understand the psychological effects of war trauma on young war victims, and the natural course of posttraumatic symptoms, so as to improve interventions targeted to this vulnerable population (13).

CONCLUSION

This study suggests that psychosocial assistance to students within the Humanitarian Association of "Prijateljice" resulted with significant reduction of PTSD and depression.

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INTRODUCTION

War-related trauma in children which may be of diverse origin cumulates over time and can endanger social, moral, and healthy personality development of the child in many ways (1). The 1992-1995 war in Bosnia and Herzegovina (BH) has had a tremendous impact on civilians. In the aftermath of the war, thousands of inhabitants have numerous traumatic experiences (2,3). Among the most affected groups were soldiers from the front lines, prisoners of war, refugees, and displaced persons (2). Many children suffered or witnessed horrifying acts of violence and aggression. Young war victims, moved forcibly to escape their homes, are frequently subjected to multiple traumatic events and severe losses, as well as ongoing stressors within the host country. Although young refugees and displaced persons are often resilient, many experience mental health difficulties, including PTSD, depression, anxiety, and grief (4-7). Childhood loss in childhood as a precipitant for symptoms of PTSD, depression, anxiety, and grief (4-7). Childhood loss in childhood as a precipitant for symptoms of PTSD, depression, anxiety, and grief (4-7). Childhood loss in childhood as a precipitant for symptoms of PTSD, depression, anxiety, and grief (4-7).

To assist victims of war, emphasis in BH together with the institutions of medical character, non-governmental organizations (NGOs) played an important role by systematically developing and conducting a number of projects for psychosocial assistance to the persons in need (13).

The first activities of the international organization "Amica e V" Freiburg, Germany were provided by shipping food, clothing and hygiene to Bosnia and Herzegovina and Croatia. In 1994, this organization established its permanent mission in the Tuzla Canton, whereas "Prijateljice" overtook and continues with started activities as a local non-governmental organization (1996). In 1997, the "Prijateljice" started with the project implementation in schools located in the Tuzla Canton. In order to assist children returned from abroad to follow-up local curricula, this assistance involved organization of additional hours for children that started their education in other European countries in order to overcome a transition period or accommodating to the subjects of national curricula, mathematics, as well as the education system in the Federation of BH in general.

Since a two-way division of return process of BH population to their pre-war places of residence has intensified, the project has been modified in accordance to beneficiaries' needs. As one of 2003, the project got the new content in order to support an idea of forming a unique school system in Bosnia-Herzegovina. General aim is to influence the implementation of the unique school system in Bosnia-Herzegovina. Besides general there are three specific aims: 1) Reduction of prejudices, acceptance of differences, and reduction of aggressive characteristics among children; 2) Linking of children, parents, teachers and school management in both entities; and 3) Formation of Systems. Clubs as a legal school part.

The aim of the study was to assess the effect of a part of large-scale psychosocial aid program for Bosnia and Herzegovina (10) launched in 1996 by the Humanitarian Association of "Prijateljice" (UHD Prijateljice).

PARTICIPANTS AND METHODS

School project

The project "Supporting to students during living in unique school system in postwar Bosnia and Herzegovina" had an objective to provide education and socialization of students, parents, teachers and school managers and support to BH reform in education.

Target groups were students aged 12-15 years, who survived war traumas, of three different nationalities (Bosniaks, Serbs and Croats) in primary and secondary schools that are involved in the project. Also parents of involved students, teachers and professors of involved students, and school managements of the schools where the project was implemented, have been involved in the project.

The project involves 480 students in ten schools which are owned due to the partnership in two BH postwar entities: Republic of Srpska (RS) and Federation of Bosnia and Herzegovina (FBH). Project team was composed of four university educated professionals (one male and three females) in the field of pedagogy, which have regular monthly supervisions with a certified supervisor.

When selecting both primary and secondary schools, we took into consideration places FBH with as many as possible displaced students and in RS with as many as possible returnees to their pre-war places of living. In such situation relationships between students of different nationalities were searched, in order recommendation of OSCE mission in BH the "School Project" team extended the project activities to this school.

Main objectives of the School Project are to support to unique school system in BH considering that students moving from one entity to another may really continue with their schooling, not finishing a school year or passing additional exams from certain subjects that differ from one entity to another.

Selection of students included in the project

In every school (eight elementary and two secondary) one teacher was engaged who has a coordinating role. Teachers formed a student groups in certain schools using the selection criteria in both Federation BH and RS: a) students who experienced war atrocities during the war in Bosnia and Herzegovina, when they were forced to leave their homes under life threatening conditions; b) students stayed at their homes during the war and afterward (wounded, c) and children who were prevented to return to their homes despite war was finished and d) students who returned to their reconstructed homes with their parents after war finished in December 1995.

All project activities are considered as free activities, students are included per their wish and aspirations, it is free free time when the activities are realized, either before or after regular classes and on weekends.

Participants

The "School Project" was approved from both Ministries for Education, Culture and Sport of Tuzla Canton and from Ministry of Education and Culture of Republic of Srpska. All procedures and aims of the project were discussed with the directors of the elementary and secondary schools involved in the "School Project". Parents gave written informed consent for the children to participate in the study. All of the potential participants were informed that participation was voluntary and that they could withdraw from the study at any moment. The study involved 408 students, who volunteered to participate in this research. Regarding national representation of 408 involved students, sample was divided into the two groups. The first group was consisted of 236 students, who were involved in the "School Project"; the second group was consisted of 172 randomly selected students from the same schools and age-group, but was not involved in the project at the NGO. Out of 236 students involved in the School Project, 178 (75.2%) were from the Republic of Srpska (RS). There was no statistically significant difference in the number of students on a basis of the entity origin ($P=0.230$). Average participants' age was 13.6±1.3 years and there was no statistical significant difference in the average age of participants among groups in the sample (t -test=0.213, $P=0.475$).

Measuring instruments

During the test period, members of the team "School Project" were present in a classroom. We have utilized a questionnaire for basic personal and socio-demographical data concerning age, sex, loss of family members, experiences from home and home-country, needs expressed by students. In addition, 20 questions about suicide experiences during the war (14) were included. Even though students were able to read questions without significant supervision, we got after involved and made interventions to assist them in order to reduce a risk of repeated stress and non-identified trauma exposure. It has been explained to every participant that if he or she does not want to answer any of the questions, they are not obliged to. The second questionnaire was the scale of Children Posttraumatic Reactions, which measures PTSD symptoms, including forced pictures, weak concentration, and bad dreams. The questionnaire has 18 questions and score of 7 positive answers is a crucial for diagnosing the PTSD (15).

The first questionnaire was the Depression Inventory - CDI, which is consisted of 27 questions that measure an existing level of depression among children in an age group 7-17 years (16). Info items were asked to evaluate their feelings in the last two weeks, by using the obtained statements. The prevalence of depressive symptoms and depression among students has been determined on a basis of CDI cut-off 4 score 35.5 (17). Two testing periods were conducted. The first testing period took place at the beginning of December 2005, whereas the control testing took place at the end of May 2006. Testing in both occasions was conducted by the same examiners, at the same time and under the same conditions.

Statistical analysis

Statistical tests included Student's t -test, Spearman's correlation coefficient and chi-square (χ^2) test. McNemar test was used for analysis of reduction of PTSD and depression (involvement after five months of School Project assistance). Level of significance of differences was set to 0.05 (18).

Results

There was no significant difference in frequency of traumatic experiences among participants, except for displaced houses, which interventions involved in the School Project had significantly more often ($P=0.028$).

Table 1. Distribution of adolescents according to frequencies of trauma experiences amongst 408 adolescents in Bosnia and Herzegovina who had ($n=336$) and who had no assistance of Association Humanitarian Society in the School Project ($n=72$), ten years after 1992-95 war finished

Trauma	No. (%) adolescents		Total $n=408$	Chi-square test	df	P**
	psychosocial help $n=336$	no psychosocial help $n=72$				
Refugee shelter	62 (18.3)	12 (16.7)	74 (18.1)	0.133	1	0.718
Forced returnees	18 (5.4)	5 (6.9)	23 (5.6)	0.281	1	0.596
Forced to leave home during the war	143 (42.8)	24 (33.3)	167 (40.9)	2.688	1	0.102
Returnees	65 (19.3)	10 (13.9)	75 (18.4)	1.177	1	0.278
Last family member during the war	150 (44.6)	39 (50)	186 (45.8)	0.686	1	0.408
Mother killed	3 (1.3)	1 (1.4)	4 (1.3)	0.014	1	0.890
Father killed	21 (6.0)	3 (3.9)	24 (7.8)	0.280	1	0.597
Uncle killed	66 (19.6)	12 (16.7)	78 (19.1)	0.340	1	0.560
Grandfather killed	40 (11.9)	5 (6.9)	45 (11.0)	1.487	1	0.223
Close relative killed	43 (12.8)	7 (9.3)	50 (12.3)	0.322	1	0.470
Close person killed	10 (3.0)	5 (6.9)	15 (3.7)	2.637	1	0.104
Close friend killed in the war	30 (11.4)	6 (8.3)	36 (11.0)	0.644	1	0.423
Destroyed house in the war	99 (29.3)	9 (12.3)	108 (26.5)	8.767	1	0.003
Last someone close to me	149 (44.4)	35 (48.6)	184 (48.1)	0.436	1	0.506

* χ^2 test.

However, students involved in the School Project have experienced, on average, statistically more traumatic experiences 7.4 compared to their peers from the control group 5.0 (t -test=3.280, $P=0.001$).

In accordance with the DSM criteria, during the first measuring, PTSD was recorded at total of 43.4% of participants in a total sample. Students involved in the School Project had a statistically significant higher prevalence of PTSD 46.1%, compared to the students (30.8%) who were not involved in this psychosocial project (chi-square test=5.856, $P=0.016$).

Table 2. Prevalence of posttraumatic stress disorder (PTSD) and depression amongst Bosnia and Herzegovina students from both entities, involved ($n=336$) and not involved in psychosocial assistance - School Project UHD "Prijateljice" ($n=72$)

Diagnosis	No. (%) students with PTSD and depression		Total $n=408$	Chi-square test	df	P**
	psychosocial help $n=336$	no psychosocial help $n=72$				
PTSD-A	155 (46.1%)	22 (30.5%)	177 (43.4%)	5.856	1	0.016
PTSD-B	45 (13.4%)	17 (23.6%)	62 (15.2%)	4.804	1	0.028
Depression A	86 (25.6%)	16 (22.2%)	102 (25.0%)	0.360	1	0.549
Depression B	6 (1.8%)	8 (11.1%)	14 (3.4%)	15.561	1	<0.001

* χ^2 test.

A-The first testing took place at the beginning of December 2005.
B-The second testing took place at the end of May 2006.

In accordance with the DSM criteria, during the first measuring, depression was recorded at total of 25.0% of participants in the total sample. Students involved in the School Project had a prevalence of depression 25.6%, which was not statistically significant compared to the students (22.2%) who were not involved in this psychosocial project (Chi-square test=0.360, $P=0.549$) (Table 2).

The second measuring showed 13.4% of students with PTSD in the group involved in the School Project, which is statistically significant reduction, according to McNemar test ($P=0.001$). In the group not involved in the School Project, there is also been reduction in the prevalence of PTSD to 23.6%, which is not statistically significant, according to McNemar test ($P=0.332$) (Table 3). In the second measuring, statistically more students who were not involved in the School Project (23.8%) had PTSD, compared to those that were involved 13.4% (Chi-square test=6.806, $P=0.008$).

Table 3. Distribution of students according to prevalence PTSD after first and second testing regarding involvement in the School project of psychosocial assistance in Bosnia and Herzegovina ten years after war 1992-95 finished

Involved in the psychosocial help	PTSD- second test		Total	Chi-square test	P**	McNemar's P	
	Yes	No					
YES	32	123	155	13.047	<0.001	<0.001	
NO	17	168	185				
Total	49	291	340				
NO	Yes	11	11	22	13.332	<0.001	0.132
NO	No	6	44	50			
Total	17	55	72				

* χ^2 test, df=1.

First test: The first testing took place at the beginning of December 2005.
Second test: The second testing was done at the end of May 2006.
The second measuring showed 1.8% of students with depression in the group involved in the School Project, which is statistically significant reduction, according to McNemar test.

Table 4. Distribution of students according to prevalence depression after first and second testing regarding involvement in the School project of psychosocial assistance in Bosnia and Herzegovina ten years after war 1992-95 finished

Involved in the psychosocial help	Depression - second test		Total	Chi-square test	P**	McNemar's P	
	Yes	No					
YES	4	82	86	3.417	0.060	<0.001	
NO	2	148	150				
Total	6	230	236				
NO	Yes	4	12	16	4.018	0.045	0.037
NO	No	4	52	56			
Total	8	64	72				

First test: The first testing took place at the beginning of December 2005.
Second test: The second testing was done at the end of May 2006.

In the group not involved in the School Project, there was also been reduction in the prevalence of depression to 11.1%, which is statistically non-significant, according to McNemar test (Table 4). In the second measuring the prevalence of depression was statistically higher among not involved students in the School Project 11.1%, compared to those that were involved 1.8% (Table 2).

DISCUSSION

During the second measurement in our research, the prevalence of PTSD and depression was significantly reduced in the group where the members of the School project team worked in compliance with their plan and program of psycho-social help and decrease of prevailing prejudices and acceptance and tolerance as well as in decrease of aggressive features among children by connecting children, parents, teachers and school management in both entities, as well as establishment of Students' clubs as a legal part of schools in which they work. Our findings are similar to findings of other researchers about effects of psychosocial support for war-traumatized children and adolescents (13, 16).

The PTSD and depression rate among studied participants were similar to other studies or reports of PTSD and depression rates among children and adolescents from Bosnia and Herzegovina (2,5,8,14). Presence of PTSD and depression among the students of both entities in North-Eastern Bosnia did not differ statistically.

Our research showed that in the first testing among studied population there were no significant statistical differences in the report of certain traumatic experiences between the group involved in the "School Project" and the control group except in cases where students' houses were destroyed. The group of students involved in the school project reported statistically more houses destroyed. All investigated students had a number of traumatic experiences during the war, especially loss of their close family members, which has been described in the literature (2,5,7,8,10,14,19).

Our research has certain limitations taking into account a number of post war traumas that the children were exposed to. Measurement of PTSD and depression five ten years after the war cannot be an assurance that the obtained results are only based on war trauma consequences. The level of PTSD and depression can increase or decrease over a period of time for unknown reasons (5). It is little known about these children, what social experiences they had and additional traumas after the war considering the fact that BH is in its transition period with constant changes of social framework.

Findings in this research can be used for recommendations in enhancement and improvement of primary and secondary education system that besides the regular teaching should also have aspects of psycho-social support for the traumatized students. Awareness of trauma of students can help teaching with and school management to develop more efficient approaches in their working with these students instead of a repressive approach. The School project that justified its existence can be an example for development of new similar projects that should be included in all existing primary and secondary schools if possible. Schools and other institutions ought to envisage as many as possible projects to be implemented in schools and out-of-schools in order to assist youth to easier overcome consequences of no favorable war in their development. There is a need to implement health promotion and preventive programs for adolescents.

Further research is needed to better understand the psychological effects of war trauma on young war victims, and the natural course of posttraumatic symptoms, so as to improve interventions targeted to this vulnerable population (13).

CONCLUSION

This study suggests that psychosocial assistance to students within the Humanitarian Association of "Friends" resulted with significant reduction of PTSD and depression.

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