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SOCIAL SUPPORT AND PTSD SYMPTOMS IN WAR-TRAUMATIZED WOMEN IN BOSNIA AND HERZEGOVINA

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SUMMARY

Objective: *To determine the correlation between social support and PTSD symptoms in women traumatized by the war and postwar social insecurity in Herzegovina.*

Subjects and methods: *The experimental group consisted of 187 randomly selected women living in Mostar, who were exposed to a wide spectrum of traumatic events during the war. The control group included 180 women living in the area surrounding Mostar who were not directly exposed to war destruction. Demographic data were obtained and a battery of psychological tests was used to measure the level of war traumatization and PTSD symptoms, along with the perception of social support.*

Results: *Women in the experimental group had significantly lower levels of perceived social support from friends ($t=2.91$; $p<0.05$) and coworkers ($t=2.30$; $p<0.05$). However, its protective significance for all levels of posttraumatic symptoms was strong, even stronger than social support from the family. Of all the sources of emotional social support, low level of perceived support from friends is the only significant predictor of PTSD.*

Conclusion: *The sources of social support which the traumatized women drew from family, friends and coworkers change their significance depending on their availability. These sources are a strong predictive factor of PTSD development.*

Key words: *social support – PTSD – women - war*

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INTRODUCTION

Many studies have shown that social support is one of the greatest resources in coping with stress and trauma (Wilson & Raphael 1993, Brewin et al. 2000, Ozer et al. 2003) and plays an important role in the process of recovery from PTSD (Hobfoll et al. 1995). In fact, social support is a vital protective shield, a "bandage" wrapped around a trauma-inflicted wound, making the recovery from trauma possible (House et al. 1994). Studies also indicate that sources of emotional support such as family, although equally important for both men and women, are more important for women's health, whereas social and professional status are more important for men (Denton & Walters 1999, Denton et al. 2004). The correlation between social support and PTSD level is stronger in persons exposed to war trauma than in persons exposed to civilian trauma. In their meta-analysis of risk factors, Brevin et al. state that social support is the strongest predictor of PTSD, even stronger than peritraumatic dissociation (Brevin et al. 2000). O'Brien and Hughes (O'Brien & Hughes 1991) state that the events following the exposure to traumatic stressors often determine whether PTSD-related symptoms will develop.

The beginning of the 1990ies war in Bosnia and Herzegovina caused widespread psychic trauma in the civilian population (Klaric et al. 2007). A decade of postwar transition brought unemployment, social insecurity, and poverty. Disruption of family and social surroundings caused by the war and postwar events reduced the sources of social support, especially affecting women.

Since family, social cohesion, and social support network decrease the traumatization level in an individual, we have assumed that low perception of social support would result in development of posttraumatic symptoms, especially if there is a lack of family support.

The aim of this study was to determine the correlation between social support and PTSD symptoms in the female population in Herzegovina who were exposed to various degrees of war devastation and postwar social instability in Herzegovina.

SUBJECTS AND METHODS

Participants

The study sample consisted exclusively of women. The inclusion criterion was age between 28 and 65, i.e. the women had to be at least 16 years of age at the beginning of war in Bosnia and Herzegovina. The exclusion criteria were previous or present psychiatric condition, serious health condition, and inability to provide informed consent to participation in the study.

The participants were divided into two groups. The first group consisted of women from Western Mostar, the part of the town that had been under direct heavy artillery fire for four years and remained politically, socially, and functionally divided after the war. The other, control group, consisted of women from urban areas in Western Herzegovina (Siroki Brijeg, Citluk and Ljubuski), which were not directly affected by war and destruction; however, these women were affected by constant news on war devastation and their loved ones were sent to the battlefield.

All of the women were informed on the purpose of the study and they gave their written informed consent.

The women were recruited using a systematic random sampling approach until a minimum target sample size of 180 women per group was reached. Four city quarters of Western Mostar adjacent to the line of separation were selected, and women living in even-numbered houses in every other street were contacted. Women from the three towns in Western Herzegovina were selected in the same manner.

Of 280 women contacted in Western Mostar, 11 did not meet the criteria and 82 refused to participate. Therefore, the experimental group consisted of 187 women (66.8% of contacted women). Of 265 women in three towns in Western Herzegovina, 8 did not meet the criteria and 77 refused to participate; thus, the control group consisted of 180 women, i.e. 67.9% of contacted women.

Methods

The research was conducted between June 2004 and February 2005. The fieldwork was performed by 13 nurses and medical technicians previously instructed by the psychologists and by the head of the research on the application of the questionnaires. Fieldworkers contacted women for the research, in accordance with the previously established plan. The women who agreed to participate in the research were given a battery of questionnaires and explanations on how to fill them out at home. All of the women received a contact phone number that they could use at any time to reach the head of the research, in case they needed additional information related to the research or professional help. After receiving a phone call from the women who completed the questionnaires, the fieldworkers returned to collect the questionnaires and delivered them to the head of the research.

Questionnaires

In order to obtain general demographic data we used The General Demographic Questionnaire.

To determine the level of traumatization and the presence of posttraumatic symptoms, we used the first and the fourth module of the Harvard Trauma Questionnaire (HTQ): Bosnia-Herzegovina Version (Allden et al. 1998a). This instrument measures various traumatic experiences and emotional problems which are considered to be directly correlated with trauma. The HTQ was developed in 1998, through collaboration of the Harvard Program in Refugee Trauma, mental health associations and experts from Bosnia and Herzegovina and Croatia. The HTQ is modified to adapt to various environments and it has been used in many studies. It is especially suitable for multicultural environments (Wilson & Keane 2004).

The HTQ is used in the form of a structured interview. The first HTQ module (the list of possible traumatic events) contains questions referring to experiences and traumatic events which the residents of Bosnia and Herzegovina were exposed to during various stages of the war (during the war, during the refugee period and postwar period). It consists of 46 possible traumatic events presented in form of "yes" and "no" questions. This section does not have scores.

The fourth HTQ model contains a list of 40 statements on psychosocial difficulties caused by trauma. The first 16 statements are derived from DSM-IV criteria for PTSD. These symptoms are grouped around three clusters of symptoms: re-experiencing of a traumatic event, avoidance and arousal symptoms. The rest of the statements refer to participants' perception of the degree to which the trauma affected their everyday abilities. The answers to each question are scored as follows: 1 = not at all, 2 = very little, 3 = quite, 4 = very much. The total result is the mean value of all 40 statements. The cutoff score for PTSD is 2.5, i.e., the mean value of the symptoms higher than 2.5 indicates the presence of PTSD. This result is comparable with the results of patients clinically diagnosed with PTSD. The internal consistency of the instrument was high (Cronbach α=0.88 for traumatic events, 0.95 for traumatic symptoms, 0.94 for the symptoms of perceived functionality and 0.97 for the total score).

The Social Support Appraisals (SS-A) scale, modified for the needs of this study, measures the level of perceived and available social support from the family, friends, and coworkers. The instrument consists of 24 statements and the answers are grouped in five categories, rated 0-4 ("does not apply to me", "slightly applies to me", "neither", "mostly applies to me" and "completely applies to me") (Vaux et al. 1986). The internal consistency of the questionnaire applied in the study was high for the three sub-scales (Cronbach α=0.79-0.86).

Statistical analysis

Internal consistency was determined using Cronbach's α for all questionnaires applied in the research. The result distributions are presented and basic descriptive parameters (arithmetic mean ± standard deviation) were calculated. The differences between the groups were tested with $\chi 2$ test for nominal variables (frequencies) and t test for interval variables. The correlation between the variables was assessed with Pearson's correlation coefficient and contingency coefficient, with Φ-coefficient for nominal variables. The level of statistical significance was set at $P<0.05$. Regression analysis was used to determine the predictability of the results of dependent variables on the basis of the sum of independent variables.

RESULTS

Demographic data and incidence of PTSD

The $\chi 2$ results indicate that the experimental and control group of women significantly differ regarding marital status, economic status and ethnic affiliation. The women in the experimental group were less often

married and more often widowed or divorced. The experimental group had more women of lower economic status, while the control group had more women of middle-income or high economic status.

Table 1. Demographic characteristics and presence of posttraumatic stress disorder in women included in the study

	No. (%) women			
	Experimental group (n=187)	Control group (n=180)	$\chi 2$	*P*
Marital status			8.74	0.033
Married	139 (74.3)	146 (81.1)		
Single	18 (9.6)	21 (11.7)		
Widowed	20 (10.7)	11 (6.1)		
Divorced	10 (5.3)	2 (1.1)		
Education			4.05	0.256
Elementary	29 (15.5)	26 (14.4)		
High	131 (70.1)	114 (63.3)		
Higher	14 (7.5)	18 (10.0)		
University	13 (7.0)	22 (12.2)		
Employment status			0.24	0.623
Employed	96 (51.3)	98 (54.4)		
Unemployed	91 (48.7)	82 (45.6)		
Economic status			24.00	<0.001
Low	42 (22.7)	11 (6.1)		
Medium	119 (64.3)	127 (70.9)		
Good	24 (13.0)	41 (22.9)		
Ethnic affiliation			49.73	<0.001
Croatian	146 (78.1)	178 (98.9)		
Bosnian	23 (12.3)	0 (0)		
Serbian	11 5.9)	1 (0.6)		
Other	7 (3.7)	1 (0.6)		
PTSD			36.09	<0.001
PTSD present	53 (28.3)	8 (4.4)		
No PTSD symptoms	134 (71.7)	172 (95.6)		

PTSD is significantly more prevalent in the experimental group than in the control group (Table 1).

The women from Western Mostar (the women in the experimental group) survived a significantly higher number of traumatic events ($t=15.91$; $P<0.001$) and showed a greater number of posttraumatic symptoms ($t=8.42$; $P<0.001$).

Social support

There was not any significant difference between the two groups of women regarding social support from the family. However, women in the experimental group had significantly lower support from friends and coworkers (Table 2).

In order to examine the effect of social support on the prevalence of posttraumatic symptoms, a series of regression analyses was performed with traumatic psychiatric symptoms as dependent variables and three sources of social support as independent variables. The correlations between the three sources of social support and the HTQ results were presented first.

In the experimental group, all three sources of social support had a significant negative correlation with PTSD and the groups of symptoms measured with the HTQ (Table 3). In the control group, social support from the family had a negative correlation with all the variables of psychic symptoms obtained by the HTQ,

while social support from friends had a significant negative correlation with all the variables except PTSD. Social support from coworkers did not have any significant correlations with any of the groups of symptoms (Table 3).

Table 2. The results of the social support questionnaire in women in the experimental and control group

Social support	Score (arithmetic mean±SD) Experimental group (n=154)	Control group (n=77)	t	P
Social support from family	27.97±5.37	28.30±4.59	0.63	0.532
Social support from friends	25.54±4.83	26.92±4.20	2.91	0.004
Social support from coworkers	19.78±7.27	21.49±7.01	2.30	0.022

Table 3. The correlations of the three social support sources (family, friends, coworkers) and the results of the HTQ in the experimental and control group

	Experimental group N=187			Control group N=180		
posttraumatic symptoms according to the HTQ	family support	friends support	coworkers support	family support	friends support	coworkers support
symptoms of posttraumatic stress disorder	-.28**	-.32**	-.33**	-.30**	-.25**	-.04
symptoms of perceived personal functionality	-.35**	-.34**	-.33**	-.40**	-.28**	-.06
total result of traumatic symptoms	-.33**	-.35**	-.34**	-.37*	-.28**	-.05
presence of PTSD	-.21**	-.27**	-.20**	-.16*	-.13	.01

Pearson Correlation; ** $p < 0.01$; * $p < 0.05$;

In order to examine which sources of social support are significant predictors of particular symptoms, a series of regression analyses was performed for each group of women separately.

The results obtained in the experimental group showed that all measures of traumatic symptoms measured with the HTQ, including the presence of PTSD, along with the control of effects of traumatization degree, could be predicted to a certain extent based on social support. The best predictor of all groups of posttraumatic symptoms in the experimental group is low social support from coworkers rather than from family, and the only significant predictor of PTSD was low social support from friends (Table 4). The situation was different in the control group. The obtained results showed that all measures of traumatic symptoms, including PTSD, could be predicted on the basis of low social support from the family. The stronger the support, the less prevalent are traumatic symptoms. The prevalence of PTSD in the control group could not be predicted on the basis of social support (Table 4).

DISCUSSION

The results showed that women in the experimental group, compared with women in the control group, had lower perception of social support from family and coworkers. Given the individual trauma and social surroundings of women in the experimental group, this finding was not surprising. The war caused immense material and emotional damage and broke many bonds and friendships. Since social support relies on mutual trust and closeness to other people (Matud 2004, Hobfollet al. 1995, Solomon et al. 1988), a weak social

network cannot provide enough help to its suffering members. In addition, ethnic antagonism is still present in Mostar, and given the fact that 21.9% women in the experimental group belonged to ethnic minorities, as opposed to the control group that was ethnically homogenous, the cause of reduced social support from friends and coworkers become more obvious.

Table 4. The results of regression analyses of traumatic symptoms measured by the HTQ as dependent variable and social support as independent variable in women included in the study

Experimental group		Control group	
PTSD symptoms			
	Beta		Beta
Social support from coworkers	-.24***	Social support from family	-.24**
Social support from family	-.16*		
Social support from friends	-.16*		
R = 0.42***		R = 0.33***	
Symptoms of perceived personal functionality			
	Beta		Beta
Social support from coworkers	-.24***	Social support from family	-.35***
Social support from family	-.24***		
R = 0.46***		R = 0.42***	
Total result of traumatic symptoms			
	Beta		Beta
Social support from coworkers	-.25***	Social support from family	-.31***
Social support from family	-.21**		
Social support from friends	-.16*		
R = 0.46***		R = 0.39***	
Presence of PTSD			
	Beta		Beta
Social support from friends	-.18*		
R = 0.31***		R = 0.18	

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; only statistically significant predictors are shown

Even though social support from family and friends plays a significant protective role in the development of posttraumatic and PTSD symptoms, social support from coworkers becomes especially significant for women in the experimental group. Moreover, it becomes a predictor of the number and intensity of posttraumatic symptoms, while perception of social support from friends is a significant predictor of PTSD. This finding emphasizes the importance of wider social context for severely traumatized persons, especially where ethnic division during and after the war caused disruption of bonds among friends and coworkers. Every relationship that was preserved in such circumstances becomes especially important. These results can be understood in light of studies which showed that the network of social support and security, integration of severely traumatized individuals into society, social cohesion and restoration of value system in a war-devastated environment ease the effects of war traumatization in an individual (Arcel et al. 2003, Astin et al. 1993, Hobfoll et al. 1995).

The difference in protective significance of social support from family, friends and coworkers for the women who participated in our study points to the fact that significance of particular sources of social support depends on posttraumatic context of an individual. When individual tramatization is lower and the structure of society is not so disintegrated by war, social support from family and social support from friends become significant protective factors, while social support from coworkers is not that significant. The significance and protective strength of particular sources of social support in our study are based on a common pattern in which women find social support from family more important than other sources of

social support in preserving their mental health. This is in accordance with results from previous studies (Denton & Walters 1999, Denton et al. 2004).

If there is a severe individual traumatization and social disintegration, as in the cases of women in the experimental group, the entire families are often traumatized (Figley 1998, Solomon et al. 1992). Since individual psychic and behavioral effects of trauma reflect on every level of family structure and functionality (Galovski & Lyons 2004, Franciskovic et al. 2007, Klaric et al. 2008), such families are more often the source of a new stressful experience than the source of security and trust for the traumatized member. The experimental group consisted of a significantly higher number of women of low economic status and higher number of widowed and divorced women. This particular fact clarifies the picture of highly traumatized postwar families of women in this group. Such families could hardly present favorable surroundings for recovery of the sense of safety and self-confidence in their traumatized members (Blaxter 1990, Denton & Walters 1999, Denton et al. 2004). Given the context of general social distrust, broken social bonds, and low economic resources, this might be the reason why social support from friends and coworkers had strong protective role against all posttraumatic symptoms (stronger than family support) in the experimental group of women.

It must be emphasized that our research has certain limitations. The groups of women differed in marital and economic status and ethic affiliation, which was a consequence of the war and postwar events. A large number of war casualties and broken families in Mostar region resulted in a greater number of widowed and divorced women in the experimental group. Destroyed economy and infrastructure of the city resulted in low postwar economic status of these women. Ethnic division is another result of the war and migrations in these areas.

CONCLUSION

These results once again emphasize the importance of social support in posttraumatic recovery and show that the significance of particular sources of social support depends on the context of the traumatized persons and the availability of social resources.

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