Social Support and Posttraumatic Stress Disorder in Combat Veterans in Croatia

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ABSTRACT

Recent studies have shown that greater social support after combat stress is associated with better psychological posttraumatic outcomes. By comparison of a group of veterans (n=71) who sought psychiatric help and were diagnosed with PTSD (clinical group) and a group of veterans (n=43) without PTSD (control group) we examined various components of structural and functional social support in war veterans in Croatia. The measures of social support were assessed for two time periods: a) immediately after the war, and b) at the present time. Results of two-way analysis of variance indicate that veterans without PTSD tend to report significantly higher number of persons who provide them different forms of social support than veterans with PTSD. Perceived family and friends support is higher in veterans without PTSD than in veterans with PTSD. Support received from friends and fellow soldiers decreases over time in both groups, whereas for the clinical group support of friends decreases significantly more.

Key words: social support, structural social support, functional social support, posttraumatic stress disorder, war veterans, combat trauma

Introduction

Exposure to major catastrophic events or tragic personal experiences may cause serious psychological problems in survivors1–3. One of pathological result following traumatic experience is the development of post-traumatic stress disorder (PTSD). After a traumatic event, victims are typically overwhelmed, confused, and in great need of support4. Studies of etiological factors for combat related PTSD indicate that various premilitary, military, and postmilitary variables are associated with development and/or deterioration of disorder5–7. Social support as one of the variables of the recovery environment is considered to be a protective membrane formed by significant others in order to isolate a traumatized person from further stress8. Previous studies of social support varied in conceptualization and definition of social support although most authors agree that social support is meta-construct comprising several components9–11. Thus, structural support refers to the number of relationships or social roles a person has, to the frequency of his/her contact with various network members, the density and complexity of relationships among network members, and so forth. Functional social support refers to the degree to which an individual believes that his/her needs for acceptance, sympathy, esteem, etc. are fulfilled. Most researchers in the field of social support agree that the structural and functional aspects of social support are different phenomena and as such should be studied and analyzed separately12. Among the all recovery factors studied, functional social support had the largest total effect on PTSD for both men and women13. Even in the case of survivors of severe trauma, such as prisoners of war, the lack of social support following war has been identified as a significant predictor of PTSD severity14. Positive effects of social support on psychological adjustment have been confirmed in the study on a sample of Israeli soldiers where more intense PTSD was associated with insufficient social support both in the second and third year after the war15. Quality and quantity of sup-
port change over time. The results of the study on social support of Vietnam veterans indicate a significant decline in the social network size as well as decline in various qualitative dimensions of social support (in particular emotional support) over time. In the studies of social support it is important to clarify the distinction between friend support and family support. Different populations (e.g., different age cohorts) may benefit from friend or family support to different extents. Schoonaart stresses that possibly the most effective support-givers may be similar others, i.e., fellow soldiers who have experienced the same or similar traumatic situations. Often war veterans feel that civilians can not understand what they have experienced and they turn to their fellow soldiers for social support. Considering the results of previous studies indicating relations between social support and favorable mental health outcome following combat stress, in the present study we hypothesized that Croatian war veterans without PTSD would have greater structural and functional social support than veterans suffering from PTSD in both time periods examined, both in the homecoming period and at the present time. The aim of this study was to examine the differences in social support between the group of Croatian war veterans who sought psychiatric help and were diagnosed with PTSD and the group of veterans without PTSD as well as changes in quantity and quality of support over time.

Method

Subjects

A total of 114 male war veterans in Croatia participated in this study. They were divided into two groups depending on whether or not they had sought psychiatric help after the war. The clinical group consisted of 71 Croatian war veterans. The criteria for inclusion in clinical group was seeking psychiatric treatment at Rijeka Regional Center for Psychotrauma and having PTSD diagnosis. In order to establish whether the participants have clinical diagnosis of PTSD we analyzed medical records which are commonly used for the registering of outpatients in the psychiatric outpatient service for soldiers set up in Clinical Hospital Center Rijeka. On average, participants in clinical group were in treatment for 6.18 years. The presence of PTSD symptoms was additionally assessed with the Mississippi scale as the psychometric measure of PTSD. Veterans with a comorbid diagnosis on Axis I and II were not included in our sample. Veterans who satisfied the criteria to participate in this study were contacted by telephone and were asked to participate in research which examines the consequences of combat trauma exposure. 120 combat veterans were contacted, 49 of them refused to participate in the study. There were various reasons for refusal. Some veterans reported a lack of interest or fear of possible misuse of the results. Some veterans explained their refusal simply by lack of time or by remote place of living. With combat veterans who accepted to participate in the study the examiner agreed the exact date of survey. Control group consisted of 43 subjects who had not sought psychiatric treatment after participating in the war (or even before in their lives) which was the only including criteria. Absence of PTSD symptoms was additionally assessed with the Mississippi scale for PTSD. Subjects from control group were sampled using the «snowball method» (one participant recruited one or more other respondents who recruited additional one or more respondents, etc.)39. The starting point was contact through the Nongovernmental Veterans’ Association in Rijeka. A great number of potential respondents (N=38) refused to participate in the study. The rate of refusal was based on the feedback of previous contact/participant and the reasons for refusal were explained by lack of time (most of them are employed). Some of them said that their participation in the war is in the past and they do not want to talk about that period. There were no between-groups differences on age and marital status. Groups differed significantly in occupational status ($\chi^2=80.14; \text{df}=3, p<0.01$) and education level ($\chi^2=26.30; \text{df}=2, p<0.01$). More participants in clinical group are retired, unemployed or on sick leave when compared with control group where more participants are employed. Similarly in clinical group more participants have elementary school whereas in control group more participants have high school or college education.

Measures

Demographic Data Questionnaire

Demographic Data Questionnaire provided information on age, duration of medical treatment, education, marital and occupational status. The questionnaire was created for the needs of this study.

Mississippi Scale for PTSD

To assess the presence of PTSD symptoms the Mississippi scale for combat-related PTSD (M-PTSD) was used20. It consists of 35 items derived from the DSM-III criteria for PTSD. Respondents answered on each item on a 5-point Likert-type response format (1=absolutely incorrect, 5=absolutely correct) and the answers were summed to provide a continuous measure of PTSD symptoms severity with a range of 35 to 175. A «cut-off» score value of 107 has been usually applied. M-PTSD has a satisfying internal coefficient reliability (Cronbach $\alpha$=0.94)20. Also, M-PTSD has already been used in research regarding Croatian veteran population21,22.

Social Support Resources Questionnaire (SSR)

To assess the structural social support as operationalised in this study (as size and characteristics of social network) the Social Support Resources Questionnaire23 was used. The instrument was designed to assess the total network size, five network sizes providing different modes of support (emotional support, socializing, practical assistance, financial assistance and advice/guidance) and to yield data on the structure, composition, and rela-
tionship quality of these networks. Several specific questions are asked to elicit up to ten network members for each mode of support (for example, »Who do you confide in and discuss personal feelings with?«, »Who do you talk to when you are not sure what to do?«), yielding up to fifty network members. Respondent could name the same person several times (e.g. same person could provide both emotional support and practical assistance). The first result (total network size) indicates the total number of people mentioned, including repetitions across categories (e.g., five people might be mentioned under emotional support, and then repeated for the other four modes of support, yielding a score of 25). The second result (network size) indicates the total number of different people mentioned, that is excluding repetitions (e.g., in the case noted above, the score would be 5). The other five results indicate the number of persons listed for each of five specific categories of support. Vaux23 reports of good internal reliability (Cronbach alpha = 0.76).

Social Support Appraisals Scale (SSA)

To assess the functional social support as operationalised in this study (as perceived emotional support and instrumental assistance provided by significant others) the Social Support Appraisals Scale24 was used. The Social Support Appraisals was based explicitly on Cobb’s conceptualization of social support and was designed to measure the degree to which a person feels cared for, respected, and involved by family, friends and significant others. In this study the translated and modified 24-items Social Support Appraisals Scale24 was used. For particular research purposes, the author approved the adaptation of items, thus for the purpose of this research the items were adapted in order to assess the perceived support of fellow soldiers. Factor analysis of the items indicated three factors and consequently the respondents’ answers given along the entire scale were used as three composite scores: 1) score on subscale of perceived social support of family, 2) score on subscale of perceived social support of friends and 3) score on subscale of perceived social support of fellow soldiers. For each subscale, the total score was calculated as the sum of appraisals on a 5-point Likert-type scale (0=completely referring to me, 4=completely referring to me).

Procedure

The research was carried out at the Center for Psychotrauma Rijeka in 2004. The respondents were acquainted with the purpose of the research and the confidentiality of information and subsequently asked to give their informed consent. The assessment was conducted by trained professionals. Subjects filled out the Demographic Data Questionnaire, SSA and Mississippi Scale individually, after receiving instructions. Due to the complexity of the SSR questionnaire, it was applied as a structured interview where the interviewer asked questions and recorded the respondents’ answers.

While assessing structural and functional social support in two time periods, the sequence of assessment was rotated in both groups in order to equalize the effect of the first assessment upon the second one. Thus, half of the respondents of each group first assessed the social support in the period immediately after the war while another half first assessed the social support at the present time. The period immediately after the war was defined as a period of one month upon their return from the battlefield. For those respondents who had been deployed repeatedly on the battlefield, that period was defined as a period of one month since their last deployment. The present time period was defined as a period of one month calculated retroactively from the date of survey.

Statistics

Statistical analyses were performed using the statistical package SPSS 11 for Windows operating system. To determine the differences between clinical and control group, ten two-way analyses of variance with repeated measurements on one factor (time; immediately upon return from the battlefield and in the last month) were performed. The t-test for independent samples was used to test differences between groups at each period examined and t-test for dependant variables was used to test the differences for each group for two time periods. The independent variables were group affiliation and time. The dependent variables included different components of structural and functional social support.

Results

Structural Social Support

The results obtained from two-way ANOVA revealed differences between the two groups in all seven components of structural social support (Table 1). Respondents without PTSD reported significantly larger number of persons who provide various forms of support (emotional support, socializing, practical assistance, financial assistance and advice/guidance) than respondents suffering from PTSD. Two-way ANOVA results indicate that the social network size has not changed over time in both groups except for the number of persons who provide emotional support. The number of persons who provide emotional support was significantly higher in the period immediately after the war than in a last month period. Furthermore we used t-test to check differences for each group for two time periods. There was a tendency in control group to list more persons providing emotional support in the period immediately upon return from the battlefield than in the last month period (t = 1.87; p = 0.07). There was no significant difference in the number of persons providing emotional support in two examined time periods in the clinical group (t = 1.19; p = 0.24)

Functional Social Support

The results obtained from two-way ANOVA indicate that the perceived social support from family was signifi-
significantly higher in the control group than in the clinical group (F=17.25; p<0.001). Perceived social support from friends was also higher in the control group than in the clinical group (F=18.46; p<0.001). Furthermore, perceived social support from friends was significantly higher upon returning from the battlefield than now (F=38.25; p<0.001). The significant interaction effect for this variable was also observed, i.e. although perceived social support from friends is lower now than in the period after their return from the battlefield in both groups, perceived social support from friends is significantly more decreased in participants who suffer from PTSD (F=25.42; p<0.001).

Perceived social support from fellow soldiers in both groups was significantly higher in the period immediately after returning from the battlefield than in the last month (F=64.34; p<0.001). The results of two-way analyses of variance carried out for three components of functional social support are shown in Table 2.

**Discussion**

In the present study, we examined various components of social support in combat veterans with PTSD and in combat veterans without PTSD. Two time periods were examined: the period immediately after returning from battlefield and the last month period. Combat veterans without PTSD reported significantly higher number of persons providing them different forms of social support comparing to veterans with PTSD. In contrast to Keane et al.\textsuperscript{16} findings that emotional support in veterans with PTSD decreases over time (while emotional support in veterans without PTSD increases over time), the results of our research indicate a decrease in the number of persons providing emotional support in the group of veterans without PTSD. One possible explanation for this result might be the different effects of acute and chronic stressors on social support. While acute stressors mobilize social support, chronic stressors inflict great damage to social network by gradually eroding perceived and received social support\textsuperscript{18}. In the case of acute stressor (adaptation to civilian life), it is possible that significant others act spontaneously without any request for help. Veterans who do not have PTSD at the present time perceived larger emotional support immediately after the war but the perceived emotional support decreased over time. Even though participants from the control group have never requested any psychiatric treatment, it is possible that they have suffered from at least some PTSD symptoms that have diminished due to emotional support received from their close ones. As stated previously, in the present study functional social support...
In addition, the post-war period Croatia underwent important transition changes including economic ones that affected greatly the way of life in general.

The results indicate that the perceived social support from fellow soldiers in both groups was higher immediately upon return from the battlefield than it is now. This result is expected since following the end of war veterans return back to their families and their communities of origin. The reestablishment of civil relationships torn during deployment and reintegration into community are also one of targeted goals in the psychotherapy treatment of combat veterans and one of important predictors of recovery.

**Methodological limitations**

When interpreting the results of this study, certain methodological limitations should be considered. Relatively small sample and relatively high rate of refusal reduce the possibility of generalization of the obtained results. Also, the specific rates for each of various refusal reasons were not accounted for which might bias the results of the study. Moreover, due to high refusal rate of potential respondents it was difficult to match respondents from each group. The established demographic differences between veterans with and without PTSD are an expected and frequent finding in studies in war-related PTSD. The method used for control group recruitment by definition is biased since it implies that the participant has at least one social contact with another participant and he might be indirectly linked to the recruiter, however it was the only method available since recruiter, however it was the only method available since

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**Table 2**

<table>
<thead>
<tr>
<th>Functional social support component</th>
<th>Clinical group – after war</th>
<th>Control group – after war</th>
<th>Clinical group – now</th>
<th>Control group – now</th>
<th>F</th>
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<tr>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
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<tr>
<td>Perceived social support from family</td>
<td>24.62</td>
<td>5.70</td>
<td>28.23</td>
<td>5.08</td>
<td>23.32</td>
</tr>
<tr>
<td>F&lt;sub&gt;over time&lt;/sub&gt;=2.22</td>
<td>F&lt;sub&gt;interaction&lt;/sub&gt;=2.07</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived social support from friends</td>
<td>25.60</td>
<td>5.91</td>
<td>27.26</td>
<td>3.72</td>
<td>19.66</td>
</tr>
<tr>
<td>F&lt;sub&gt;over time&lt;/sub&gt;=25.42**</td>
<td>F&lt;sub&gt;interaction&lt;/sub&gt;=25.41**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived social support from fellow soldiers</td>
<td>26.86</td>
<td>5.27</td>
<td>26.63</td>
<td>4.50</td>
<td>21.22</td>
</tr>
<tr>
<td>F&lt;sub&gt;over time&lt;/sub&gt;=64.34**</td>
<td>F&lt;sub&gt;interaction&lt;/sub&gt;=2.94</td>
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</table>

**p<.001.*p<.01

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Support is defined as perceived emotional support and instrumental assistance from three different sources. The hypothesis that veterans without PTSD would have better functional social support than veterans with PTSD has been confirmed for two of the three perceived social support variables. Control group had higher levels of perceived family support than the clinical group. In other words, respondents who did not develop PTSD following their return from the battlefield assessed themselves as being more loved and cared about by their families than did the respondents suffering from PTSD. This is one of expected results due to impact of PTSD symptoms on social functioning, in particular emotional numbness and hyperarousal. However, it is possible that veterans suffering from PTSD had already developed more various combat-related stress symptoms immediately upon their return from the battlefield that prevented them from getting more social support leading to further chronication of the symptoms. PTSD symptoms such as reduced capacity for identification, modulation and expression of emotions as well as capacity of an individual to confide in other persons could have an impact on perceived availability of support in veterans with PTSD.

Methodological limitations should be considered. Relatively small sample and relatively high rate of refusal reduce the possibility of generalization of the obtained results. Also, the specific rates for each of various refusal reasons were not accounted for which might bias the results of the study. Moreover, due to high refusal rate of potential respondents it was difficult to match respondents from each group. The established demographic differences between veterans with and without PTSD are an expected and frequent finding in studies in war-related PTSD. The method used for control group recruitment by definition is biased since it implies that the participant has at least one social contact with another participant and he might be indirectly linked to the recruiter, however it was the only method available since we have no access to army draft lists. Also, the present study is retrospective and cross sectional by its nature. Retrospective studies reveal difficulties in accurately recalling events occurring in the distant past (in this study respondents had to go back some ten years in the past), especially in recalling details of events occurring under conditions of extreme stress. The above said applies to both of our groups. In addition, the results of clinical
group might be biased because of current PTSD. Moreover, the question is180group respondents from these two groups differ in certain personality traits that may influence their choice to seek help from others in stressful situations. It is possible that respondents from clinical group had already developed severe posttraumatic symptoms immediately after the war that might have affected their interpersonal relationships and their perceived support availability. It is also possible that lack of support in that period has affected development and chronicity of PTSD symptoms.

The aim of the study was to examine the differences in social support between the group of Croatian war veterans who sought psychiatric help and were diagnosed with PTSD and the group of veterans without PTSD as well as changes in quantity and quality of support over time. The results show that veterans who suffer from PTSD have significantly lower levels of social support than veterans without PTSD in all seven components of structural social support and in two out of three components of functional social support. Support from friends and fellow soldiers decreases over time for both groups. The results support previous findings on the relevance of social support as one of the variable of the trauma recovery environment. Treatment interventions for individuals who suffer from combat related PTSD should be directed not only to reducing PTSD symptoms but to strengthening social support as well. Strengths of this study were inclusion of many facets of social support and the inclusion of non PTSD veterans.

**REFERENCES**