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Increase of Frequency of Post-Traumatic Stress Disorder in Disabled War Veterans during Prolonged Stay in a Rehabilitation Hospital

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Aim. To explore possible causative factors in the development of post-traumatic stress disorder (PTSD) in disabled Croatian war veterans.

Method. The sample comprised 42 disabled Croatian war veterans, aged 19 to 44 years, accommodated in the VaraZdinske Toplice Rehabilitation Hospital for the purpose of long-term physical rehabilitation. Manifestation of PTSD symptoms (Mississippi Scale for Combat-Related Post-Traumatic Stress Disorder) and anxiety levels (Spilberger's State Trait Anxiety Inventory) were tested in 1994 and 1999.

Results. Patients with PTSD symptoms had significantly higher anxiety levels then patients without PTSD symptoms. The percentage of patients manifesting PTSD increased from 19% in 1994 to 41% in 1999. Over the same period, the anxiety levels decreased in the patients with PTSD.

Conclusion. Anxiety and PTSD seem to share common etiologic grounds. Nevertheless, staying in the same homogenous group for a substantial period of time, in combination with inadequate social support and deficient psychological care, may contribute to the development of the PTSD symptomatology.

Key words: anxiety; comorbidity; Croatia; disabled; stress disorder, post-traumatic; veterans; war

Post-traumatic stress disorder (PTSD) was first defined in the third edition of Diagnostic and Statistical Manual of Mental Disorders (DSM-III) (1). Usually, PTSD symptoms start around six months after the event, although they can occur years or even decades later. The prevalence of PTSD among combat veterans is between 15% and 60% (2,3), and is two to four times higher in disabled combat veterans than in other veterans (4,5). Among the psychiatric disorders associated with PTSD, increased anxiety is the second most common disorder, immediately after depression and followed by alcoholism and phobic disorders (6).

War situations urge people to cling together. They form numerous small, medium, or large informal groups, whose psychological functioning is dominated by regressive phenomena – the regression meaning turning back to the earlier and more primitive forms of mental functioning and being halted at the previously fixated moments (7). When entering such an unfamiliar and insufficiently structured group, one inevitably goes through the stages of heightened anxiety before reaching adaptation (8). After the process of adaptation is accomplished, the anxiety alleviates, but the regression process persists. Finally, the regression of group members comes to a halt at certain primitive forms of psychological functioning. This process was especially manifest in informal groups formed by Croatian war veterans, which were characterized by intense feelings of loss (8). When entering such a group, the veterans felt helpless and threatened. Not knowing what was expected from them, they reacted with high anxiety and intense regression. In this way, the war circumstances promoted anxiety and regression not only in groups as a whole but also in individuals (9). Moreover, unexpected and often multiple combat injuries and consequent disability caused sufferings, which also induced strong anxiety and severe changes in self-image of the disabled veterans(10).

The aim of this study was to establish and monitor the prevalence of PTSD and anxiety levels in the group of disabled Croatian war veterans accommodated for rehabilitation in the Special Rehabilitation Hospital in Varaždinske Toplice over the five-year period. All the patients were admitted to the hospital during the first half of 1994 and stayed there continuously until 1999, except 14 of them who went home. The veterans persistently refused to return to their homes and families, even after they completed their physical rehabilitation and were financially secured by the state. Regular psychological support to the patients was organized only during the first year of their stay in the hospital, with the liaison psychiatric staff permanently available for individual and group psychotherapy. The patients also received adequate pharmacotherapy. After the first year, this type of psychiatric care was substituted with irregular psychological counseling and individual visits to local psychiatric institutions. It was expected for PTSD to diminish over time in most patients due to their prolonged and uninterrupted stay in the hospital.

Subjects and Methods

Subjects

The study included 42 disabled war veterans, who were accommodated at the Special Rehabilitation Hospital in VaraZdinske Toplice, Croatia, during the 1994-1999 period. All subjects were casualities of the 1991-1995 Serbian war against Croatia. All were paraplegic (Frankel's grade A; ref. 11), immobile, and dependent on others for help with various aspects of everyday life; some also had their legs amputated. Their participation in the study was voluntary. The psychiatric assessment of each patient for the study purposes started within 6 months after wounding. The study group was examined in 1994 and in 1999, both times within a month period. All the subjects were male, aged between 19 and 44, with a mean age of 28 years (SD=5.5) at the beginning of the study in 1994.

Methods

To establish the diagnosis of PTSD, a multidimensional, multi-model approach based on the Diagnostic and Statistical Manual of Mental Disorders – III (DSM-III) was employed (1). It included the Structured Clinical Interview for PTSD (SCID-P) (12) and Mississippi Scale for Combat-Related Post-Traumatic Stress Disorder (M-PTSD) (13). M-PTSD is a subjective psychometric questionnaire intended for the detection of PTSD in a population of combat veterans (13).

Anxiety was measured by Spilberger's State Trait Anxiety Inventory (STAI) (14). The goal of this questionnaire is to determine the existence or differences between a subject's current anxiety as a consequence of a particular situation and the subject's predisposition to anxiety as a trait of the subject's personality. The questionnaire consists of two scales: the STAI-S that measures present anxiety and the STAI-T that measures the predisposition to anxiety.

The investigation was carried out by the psychiatric team of the Department for Psychological Medicine at the University Hospital Center of Zagreb. After being interviewed by a psychiatrist with at least 3-year experience in working with the psychological consequences of war, each patient completed the M-PTSD and STAI questionnaires. The PTSD diagnosis was reached separately for each subject if the criteria in both the interview and M-PTSD questionnaire were met.

The results were analyzed using non-parametric statistical tests (chi-square test, Mann-Whitney U-test). Statistical Package for the Social Sciences (Release 3) software was used for statistical data processing (15).

Results

At the beginning of the study in 1994, 10 (19%) of the total of 56 subjects met all the criteria for PTSD diagnosis, according to the DMS-III classification. In the period between 1994 and 1999, 14 subjects left the hospital and dropped out of the study. Two among them met the PTSD diagnosis criteria in 1994 (Fig. 1). In 1999, the investigation was performed again and included a total of 42 subjects, with 17 (41%) meeting the criteria for PTSD. A statistically significant increase (chi-square test, p<0.025) in the number of patients with PTSD between the first and second psychiatric examination was found. Both in 1994 and 1999, statistically significant differences in anxiety levels between the patients with PTSD symptoms and those without PTSD symptoms were found both as a trait (Mann-Whitney U test, p<0.001 in 1994, and p=0.021 in 1999) and as a state (Mann-Whitney U test, p<0.001 in 1994, and p<0.001 in 1999) (Table 1). The anxiety level was higher in the patients with PTSD. Interestingly, the patients with PTSD in 1999 manifested significantly lower anxiety levels than patients with PTSD in 1994 (Mann-Whitney U-test, p<0.001).

Discussion

Compared with other reports (16) the anxiety level values obtained in our subject sample were very high in 1994, as well as in 1999. Heightened anxiety can be ex-

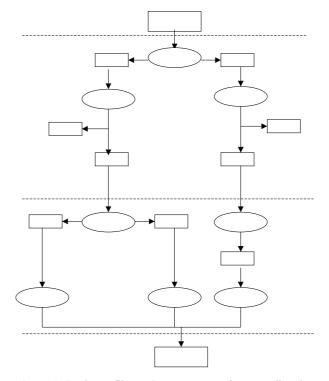


Figure 1. Study profile. PTSD, posttraumatic stress disorder; STAI, State Trait Anxiety Inventory; + or –, positive or negative diagnosis of PTSD.

plained to some extent by the process of adaptation to one's disability. Severe handicap such as in our subjects – paraplegia, immobility, dependency on others for help, and loss of body rts – causes abrupt changes in the self-image and consequently increases anxiety. Adaptation to the handicap, which begins with the denial of loss and ends with depression, is continually accompanied by the heightened anxiety (11-19). Still, the anxiety levels in the group of disabled Croatian war veterans with pronounced PTSD symptoms were significantly higher than in the group without PTSD. This is similar to the observations of other authors (20,21), who have established that the state of high anxiety is one of the most frequent comorbid diagnoses of the PTSD, especially in disabled combat veterans, and argued that anxiety and PTSD share common etiologic grounds.

		Patients with PTSD				Patients without PTSD		
Characteristic		range	median	quartile	pŞ	range	median	quartile
STAI-T	1994	43-47	62.5	56.5	< 0.001	29-53	45.5	41.75
	pŞ		0.053				0.963	
	1999	23-51	47.0	41.5	0.021	24-56	43.0	37.0
STAI-S	1994	49-47	58.0	53.75	< 0.001	34-53	43.5	38.75
	pŞ		0.097				0.913	
	1999	23-73	52.0	47.0	< 0.001	29-57	43.0	35.5

Table 1. Scores for State Trait Anxiety Inventory (STAI) with anxiety as a trait (STAI-T) and anxiety as a state (STAI-S) for patients with and without post-traumatic stress disorder (PTSD)

The specificity of our study population was their prolonged stay in the hospital, even after they had finished with their physical rehabilitation and had been granted war-veteran pension and other material support from the state. All but 14 of them systematically refused every possibility to return home, wanting to stay in the familiar surroundings of the hospital as long as possible. This can be contributed to the fact that the group cohesion alleviated their anxiety (decreased anxiety levels in the patients with PTSD between the first and second investigation). On the other hand, the group cohesion kept them on the regressive level of psychological functioning, allowing for the mutual induction and fixation of PTSD symptoms. Furthermore, the psychodynamic functioning of the group was negatively influenced by the out-group factors (inadequate psychological support in the hospital and support from the state including only financial but no social support). Such out-group factors induced the regression of the psychodynamic process in the group and fixation on the regressive psychological level. This probably induced the development of PTSD in the subjects without that disorder and fixation of the symptoms in the subjects that were ill at the beginning of the rehabilitation process.

We believe that our findings indicate insufficiency of merely consultative approach in organizing psychological care in rehabilitation facilities. This especially holds true in the case of war-disabled persons, when a prolonged treatment can be expected. Also, the inadequacy of social support that comprised only of financial and material support contributed to this situation. We believe that war-disabled persons can be expected to develop PTSD symptoms, if not soon after the traumatic experience, then during their stay in such a closed community as a readequate especially if habilitation hospital, psychotherapeutic care and social support are not provided.

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