Change of Diagnosis of Post-traumatic Stress Disorder Related to Compensation-seeking

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Aim. To explore the change in the diagnosis of posttraumatic stress disorder (PTSD) related to the implementation of the new national regulation on compensation-seeking by war veterans in Croatia.

Methods. The study included 225 compensation-seeking war veterans who were psychiatrically assessed and diagnosed on three different occasions. The first diagnosis was made by a local psychiatrist when a veteran sought psychiatric help for the first time. The second psychiatric diagnosis was established during the veteran’s psychiatric treatment, and the third one was made by an independent expert team in charge of the psychiatric assessment for compensation purposes. The expert examination included structured diagnostic procedure and analysis of military service data. The diagnoses established on three different points were compared.

Results. There were significant differences between the diagnoses of mental disorders made at three different occasions in compensation-seeking war veterans. Six different diagnostic categories of mental disorders were confirmed. The diagnosis changed in 134 (59.5%) out of 225 veterans, mainly in the categories of PTSD and personality changes due to catastrophic experience, during their psychiatric treatment in the 2000-2002 period, when the new regulation for compensation was implemented. PTSD diagnosis remained unchanged at all three psychiatric assessments in only 7.5% of the veterans, whereas the diagnosis of a mental disorder remained unchanged in 37 (16.4%) veterans. Experts’ confirmation of PTSD or PTSD comorbid with other mental disorders positively correlated with the number of hospitalizations.

Conclusion. Inconsistencies in the diagnosis of PTSD could be related to the different diagnostic criteria and the course of illness. Psychiatric examination for compensation purposes should be independent and integrate all relevant data for making a complete assessment. Compensation-seeking policy, represented by new regulations, could be a source of bias in diagnostic outcome.

Key words: combat disorders; compensation and redress; stress disorders, post-traumatic; stress, psychological; veterans; war

The last century was marked by great wars and disasters, but it also witnessed a significant increase in the social awareness of human rights and suffering (1). Societies around the world have acknowledged traumatization by introducing compensation fees for the victims. Such social recognition of trauma victims and social support in the process of healing has a great importance in dealing with the traumatized population (2).

Post-traumatic stress disorder (PTSD) is a well-defined and reliably diagnosed disorder, linked with substantial distress and dysfunction (3). However, the secondary gain that may result in an overreporting of trauma symptoms in the persons seeking compensation or taking sick leave from work has raised questions about the relation between PTSD and disability (4). It is presumed that a desire to acquire or increase financial compensation for a psychiatric disability due to war trauma could introduce a response bias into patients’ reports of their symptoms and their work performance (5). Compensation-seeking could also be linked to malingering (6).

Delayed-onset PTSD, where symptoms appear more than 6 months after the traumatic event, creates a significant diagnostic problem, especially when linked with compensation-seeking and malingering (7). Nevertheless, some studies confirmed that certain individuals could be asymptomatic for several years after the trauma, ie, prior to seeking help (8,9). Studies among compensation-seeking war veterans indicate that they overreport the symptoms and that their compensation-seeking status influences the diagnosis, treatment, and outcome of their disease (4,10-13).

The legal regulation of compensation-seeking of Croatian war veterans was first established within the 1992 Law on the Protection of Military and Civil Persons Disabled in the War (14), including all immediate combat and civil victims with war trauma, as well as the persons with regular PTSD. The second regulation, the Law on Rights of War Veterans and their
Family Members from 2001 (15), allowed war veterans that had not been covered by the previous law to apply for compensation due to prolonged or delayed illness related to the war. This Law recognized the veterans with delayed-onset PTSD and personality changes due to traumatic exposure as eligible for substantial compensation fee, because these disorders could develop years after the initial trauma. Therefore, the Ministry of the Croatian Homeland War Veterans has appointed psychiatric expert teams in regional psychotrauma centers to assess the disability of war veterans due to mental illness for compensation-seeking purposes.

To evaluate the diagnostic process and treatment in different psychiatric institutions/departments in the Zagreb region between 1995 and 2002, we compared the previous diagnosis of the war compensation seekers and the diagnosis established by forensic psychiatry experts at the Zagreb Regional Center for Psychotrauma in 2002/2003.

**Subjects and Methods**

**Subjects**

The study included 212 men and 13 women who had experienced combat and war stress in the 1991-1995 war and were under expert examination for compensation-related purposes to confirm the diagnosis of PTSD and stress-related disorders, as required by the new Law. The mean age (± standard deviation) of subjects was 42.3 ± 7.4 years (median, 42 years; interquartile range, 11). The mean duration of their combat activity was 27.1 ± 18.7 months (range, 6-5 months), and 7-12 years passed (range, 12±1.4 years) since the time they had experienced combat traumas. When they were drafted for active military service, they were medically examined to exclude any health disorders. Most participants of this study were married (76%) and parents of two children (48%). With respect to education, 23% had only elementary and 65% had secondary level education. Regarding the working status, 51% were retired, 16% were on sick leave, and 24% were unemployed. Almost 12% of them had already received some financial compensation, mainly due to wounding, as regulated by the previous Law.

**Method**

We compared the psychiatric diagnoses made in war veterans at three different assessments. The first psychiatric diagnosis was made on the veteran's first visit to a local psychiatrist. The second diagnosis was made during the psychiatric treatment. The third diagnosis was established by an expert team in charge for psychiatric assessment for compensation purposes. There had been no diagnostic cross-validation between the local psychiatrists and experts.

**Data Collection**

All examinees were first subjected to a structured clinical interview with psychiatrists, which provided socio-demographic data (age, sex, education, qualification, employment, and marital status, number of children, place of residence, data about previous and current disturbances, traumatic experiences, and previous and current social functioning). The interview also included data on previous somatic and mental disturbances, heredity, previous traumatic experiences, combat-related experiences, post-war traumatic experiences, current symptoms, duration of symptoms, and intensity of treatment. In their assessments, the experts also took into account detailed data from military service of the subjects, as well as their previous medical documentation.

The PTSD diagnosis, as well as the comorbid diagnosis, was made according to the International Classification of Disorders (ICD-10) criteria (16) by two independent psychiatrists. Inter-rater reliability was 0.95. The subjects were asked to describe their traumatic experiences and were given enough time to talk about it and to present their former and current psychiatric symptoms. The current intensity of the disorder was assessed by Clinical Global Impression (CGI) scale (17). Clinician Administered Posttraumatic Scale (CAPS) (18) was applied by 3 trained psychiatric residents, with inter-rater reliability of 0.91. A clinical psychologist applied the Trauma Questionnaire (19), Mississippi Scale for Combat-related PTSD (20), and Minnesota Multiphasic Personality Inventory 201 (21). Scales had been previously validated for the Croatian population. The final diagnosis of a lifetime and current PTSD and other stress-related disorders was reached only in cases when all sets of criteria (psychiatric and psychological) were fulfilled.

**Statistical Analysis**

To determine the possible differences among the diagnosis established at the first psychiatric visit (first diagnosis), the diagnosis made during inpatient and outpatient psychiatric treatment (second diagnosis, on the basis of which a patient was referred to the expert examination), and the diagnosis established by independent expert examination (third diagnosis), we used chi-square test for dependent samples. The correlations between each of the three diagnoses, the number of hospitalizations, and the length of outpatient treatment (years) were analyzed by using Kendall's correlations for qualitative variables. Statistical analysis was performed with SPSS 9.0 software (SPSS Inc., Chicago, IL, USA), and p < 0.01 was considered statistically significant.

**Results**

The psychiatrists who assessed 225 patients found six different diagnostic categories of mental illness according to ICD-10: PTSD, partial PTSD, PTSD comorbid with other mental disorder, PTSD comorbid with personality change due to catastrophic experience, personality change due to catastrophic experience, and other mental disorders. PTSD, PTSD comorbid with other mental disorder, and personality change due to catastrophic experience had the highest compensation rate granted by Croatian regulations for war veterans (15).

The number of subjects with a particular category of stress-related disorder (PTSD, partial PTSD, PTSD comorbid with other mental disorder, PTSD comorbid with personality change due to catastrophic experience, personality change due to catastrophic experience) differed at the first, second, and third assessment (Table 1). The number of PTSD diagnoses also significantly differed at the first, second, and third diagnostic assessment of compensation seekers (Table 1).

All stress-related disorders were diagnosed in 130 (58%) out of 225 patients at the first visit. During the treatment, stress-related disorders were establish-

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>No. (%) of patients at assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTSD</td>
<td>93 (41) 100 (44) 43 (19)</td>
</tr>
<tr>
<td>Partial PTSD</td>
<td>12 (5) 5 (2) 6 (3)</td>
</tr>
<tr>
<td>PTSD with comorbid diagnoses</td>
<td>13 (6) 16 (7) 34 (15)</td>
</tr>
<tr>
<td>PTSD with personality change</td>
<td>9 (4) 66 (29) 0 (0)</td>
</tr>
<tr>
<td>due to catastrophic experience</td>
<td></td>
</tr>
<tr>
<td>Personality change due to</td>
<td>3 (1) 17 (8) 1 (0)</td>
</tr>
<tr>
<td>catastrophic experience</td>
<td></td>
</tr>
<tr>
<td>Other diagnoses</td>
<td>95 (42) 21 (9) 141 (63)</td>
</tr>
<tr>
<td>Total</td>
<td>225 (100) 225 (100) 225 (100)</td>
</tr>
</tbody>
</table>

*The first diagnosis was made at the first psychiatric appointment, the second diagnosis was made during the psychiatric treatment, and the third diagnosis was made at the expert examination.

PTSD – posttraumatic stress disorder

Chi-square = 250.359, df = 10, p < 0.001; 1st vs 2nd diagnosis: chi-square = 103.773, df = 5, p < 0.001; 2nd vs 3rd diagnosis: chi-square = 48.731, df = 5, p < 0.001; 1st vs 3rd diagnosis: chi-square = 198.402, df = 5, p < 0.001.
In higher proportion of the patients than at the first assessment, ie, in 204 patients (91%). In contrast, at the third assessment stress-related disorders were diagnosed in only 84 (37%) patients.

At the first assessment, two diagnostic categories predominated: PTSD (41%) and other mental disorders (42%). At the second assessment during the treatment, the number of veterans in the category of PTSD comorbid with personality change due to catastrophic event increased sevenfold, whereas the number of veterans with other mental disorders decreased to 8% (Table 1). The prevalence of PTSD remained almost the same.

At the third assessment, performed for compensation purposes, a pronounced decrease was observed in the number of veterans in the category of PTSD (17%), and the number of veterans with other mental disorders decreased to 8% (Table 1). The prevalence of PTSD remained almost the same.

At the third assessment, performed for compensation purposes, a pronounced decrease was observed in the number of veterans in the category of PTSD (17%) and the category of PTSD comorbid with personality change due to catastrophic event increased sevenfold, whereas the number of veterans with other mental disorders increased to 63%.

Between the first and the second diagnosis, there was no change in psychiatric diagnosis in 91 (40%) out of 225 patients (Fig. 1), whereas between the second and the third diagnosis, the psychiatric diagnosis remained the same in only 39 (17%) patients. PTSD diagnosis was established or confirmed at all three assessments in only 17 (8%) patients. The greatest changes in PTSD diagnoses occurred between the second and the third assessment (Fig. 1). Sixty three out of 100 patients diagnosed with PTSD at the second assessment were diagnosed with some other mental illness at the third assessment. Eighteen out of 100 patients with only PTSD at the second assessment were diagnosed with PTSD comorbid with other diagnosis at the third assessment.

There were 50% fewer subjects diagnosed with partial PTSD at the second assessment, with their number remaining unchanged between the second and third assessment. However, there was no direct confirmation between the first and third diagnosis (Fig. 1).

The number of subjects with PTSD comorbid with other disorders increased at the third assessment, and the diagnosis from the first assessment was confirmed at the third assessment in only 3 patients. It was mostly the patients with PTSD who were later diagnosed with this disorder at the third assessment. Although the number of subjects in the category of personality change due to catastrophic experience was higher at the second than at the first assessment, this diagnosis was confirmed at the third assessment only in a single case.

There were only 9 out of 225 patients in the category of PTSD comorbid with personality change due to catastrophic experience at the first diagnostic assessment. At the second assessment, made during the psychiatric treatment, the number of patients in this category increased to 66. This increase was mainly

Figure 1. Schematic presentation of the change in the psychiatric diagnoses. Scheme of diagnoses change.

A. The first diagnoses were done at the first psychiatric visit.

B. The second diagnoses, changed during the psychiatric treatment.

C. The third diagnoses were done during the expert examination.
due to a change of diagnosis of PTSD only or other mental disorders. Since diagnosis that included PTSD comorbid with personality change due to catastrophic experience did not exist in ICD-10, this comorbidity was not confirmed by experts at the third assessment.

Completely opposite results were obtained in the category of other mental disorders, which included other anxiety disorders and depressive disorders. These diagnoses were directly confirmed in only 17 patients at all three assessments. In other patients, diagnosis of mental disorder changed twice: at the second assessment diagnosis of other mental disorders mainly changed into PTSD or PTSD comorbid with personality change due to catastrophic experience, whereas at the third assessment it changed from PTSD and PTSD comorbid with personality change due to catastrophic experience back into other mental disorders.

The change in psychiatric diagnoses of many of our subjects that occurred between 2000 and 2002, mostly in 2001, correlated with the implementation of the new regulation on compensation-seeking for war veterans due to delayed or prolonged illness (Fig. 2). Diagnosis of PTSD became more frequent, peaking in 2001. The same pattern, only higher, was found for PTSD comorbid with personality change due to catastrophic experience. The number of diagnoses of personality change due to catastrophic experience peaked in 2002, with simultaneous decrease in the number of PTSD and PTSD comorbid with personality change due to catastrophic experience. These three diagnostic categories have been most valued by the new compensation-seeking regulations and bring highest scores related to disability and compensation (14).

![Figure 2. Increase in the number of veterans with posttraumatic stress disorder (PTSD) and PTSD comorbid with other diagnoses in 2001. Closed circles – PTSD; closed squares – PTSD with personality change due to catastrophic experience; closed triangles – personality changes due to catastrophic experience; open triangles – PTSD with comorbid diagnoses; open squares – partial PTSD; open circles – other diagnoses.](image)

There was a statistically significant correlation between the first and the second diagnosis \( r = 0.218 \) and between the first and the third diagnosis \( r = 0.134 \); Table 2). Correlation between the diagnostic procedures performed during the first visit, treatment, and expert examination did not exist. Expert examination confirmed the diagnosis of PTSD alone or comorbid with other diagnosis more often if the number of hospitalizations was higher \( r = 0.255 \).

Table 2. Correlation between the first, the second, and the third psychiatric diagnosis, number of hospitalizations, and the duration of outpatient treatment of 225 war veterans (Kendall’s tau-b coefficients)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Diagnosis</th>
<th>first</th>
<th>second</th>
<th>third</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>first</td>
<td>1.000</td>
<td>0.218*</td>
<td>0.134†</td>
<td></td>
</tr>
<tr>
<td>second</td>
<td></td>
<td>0.218*</td>
<td>1.000</td>
<td>-0.008</td>
</tr>
<tr>
<td>third</td>
<td></td>
<td>0.134†</td>
<td>-0.008</td>
<td>1.000</td>
</tr>
<tr>
<td>Hospitalizations (n)</td>
<td></td>
<td>0.016</td>
<td>0.072</td>
<td>-0.255*</td>
</tr>
<tr>
<td>Outpatient treatment duration (years)</td>
<td>0.195†</td>
<td>-0.041</td>
<td>0.031</td>
<td></td>
</tr>
</tbody>
</table>

* \( p < 0.001 \)
† \( p < 0.005 \)

**Discussion**

Our study showed inconsistencies between the first two psychiatric diagnoses and the third one established by independent expert evaluation of PTSD and other stress-related mental disorders for compensation purposes in war veterans. The diagnoses made by psychiatrists treating the subjects changed between 2000 and 2002 toward the diagnoses with higher compensation rates, which corresponded with the new compensation regulation coming into force in 2001.

From a diagnostic point of view, differences in assessment between treating psychiatrists and experts could arise due to application of different classifications, use of psychometric instruments, and availability of military documentation. The diagnostic procedure was standardized at the expert assessment, but it was inconsistent in the previous psychiatric assessments. Furthermore, there was no diagnostic cross-validation between different psychiatrists.

Application of different assessment criteria, ICD-10 and DSM-IV, could also be one of the reasons for diagnostic differences (16,22). The experts performing the evaluation for compensation purposes used only ICD-10, because it is the official nomenclature in Croatia (15). According to the medical documentation, it seemed that, at previous assessments, some psychiatrists used DSM-IV or other broader assessment criteria, or performed only a clinical interview.

Many studies in PTSD suggest the use of various sets of diagnostic instruments (23-26), as none of the assessment methods alone is enough to confirm the diagnosis of PTSD (27). The Croatian regulation on compensation-seeking explicitly requires the application of two psychometric tests (15), which were used at the third, expert assessment of our veterans. However, these tests were not applied at the first and second assessment, which may be the reason why the first two psychiatric diagnoses were less precise than the diagnosis established at the third, expert evaluation.
The experts performing the examination for compensation purposes had at their disposal military documents with detailed description of the participation of veterans in the war and their trauma exposure. These military documents were not always presented or available to psychiatrists performing the first and the second assessment, which may also have decreased their possibility to make a fully objective evaluation of traumatic experience of their patients.

The differences in the diagnosis between the first and the third (expert) assessment could also be related to the changes in the course of illness. According to some epidemiological studies, recovery from early PTSD has been estimated to involve 50-60% of the patients (28,29). On the other hand, the recovery from prolonged PTSD may be incomplete, causing vulnerability to relapse upon re-exposure (30,31). Delayed-onset PTSD may also occur many years after the trauma (32,33). None of our 225 patients was found to be healthy. The experts performing the third assessment found a decrease in the number of PTSD and other stress-related disorders, but an increase in the diagnosis of other mental disorders. The diagnosis of PTSD remained stable at all three assessments in only 8% of the patients, whereas the diagnosis of any mental disorder was stable in 37 (16%) patients. For some patients, clinical picture or diagnosis of mental disorder could have changed over time. According to our observations, when PTSD symptoms (intrusion, avoidance, and arousal) were no longer fully active, some depressive and anxiety symptoms/disorder still continued to persist. Although the time interval from trauma to expert evaluation was quite long, ie, 7-12 years, further follow-up could provide even deeper insight into the oscillations of the symptoms and the role of retraumatization.

Some authors have suggested that clinicians’ perception of veterans with PTSD could influence diagnostic evaluation, especially when the patients have prolonged symptoms and are resistant to treatment (34). Our results have also shown that psychiatrists used to change the diagnosis of the patients in longer treatment into a more favorable diagnosis for compensation seeking. The experts also confirmed the diagnosis of PTSD alone or comorbid with other diagnosis more often if the number of hospitalizations was higher.

The patient’s exaggeration of the symptoms could also play a significant role in a psychiatrist’s judgment. Compensation seekers more frequently overreport their PTSD symptoms in comparison with the severity or chronicity of their disorder (11,35-37). Such overstatements could influence clinician’s judgment, and could be responsible for psychiatric overdiagnosing of the stress-related disorders (10,12, 38,39). The relation between the presentation of symptoms, treatment outcome, and rehabilitation and compensation-seeking behavior has been recognized in the clinical and psychometric studies of PTSD (40,41). In our study, we also observed the tendency of overdiagnosing PTSD and other diagnoses that bring a higher compensation rate around the time of introduction of the new regulation. The psychiatrists often found two of the diagnoses with the highest compensation rates, PTSD and personality changes due to traumatic experience, as coexisting in the same patient regardless of the fact that, according to ICD-10, this comorbidity was not possible (15). Diagnosing stress-related mental disorders that allow compensation seeking could be influenced by two factors: clinician’s judgment, which may be biased especially in the case of a patient in longer treatment, and the patient’s exaggeration of the symptoms. Both of these factors could have been provoked by the expectation of the new compensation regulation for war veterans with prolonged/delayed PTSD to come into force in 2001.

The majority of patients in our study were unemployed, around 40 years of age, and with a family. We could speculate whether these social factors also influenced the psychiatrists’ judgment and/or patients’ behavior.

The limitations of this study were primarily related to the sample size and characteristics of our patients and the lack of diagnostic cross-validation among different psychiatrists. In addition, the expert evaluation process was only in its beginnings, and a larger group of compensation-seekers still had to be assessed. To discuss the results considering the time course from the first to third evaluation is also difficult, and a longer follow up is need to reach more reliable conclusions.

In conclusion, the differences among psychiatrists in their diagnostic assessments could result from different diagnostic procedures and/or criteria they used as well as the course of illness during time. Objective evaluation of stress-related disorders for compensation-seeking purposes should include independent psychiatric examination and application of strict consensus criteria in the diagnostic and assessment procedure. Expert evaluation should include a set of various assessment methods and documentation of the traumatic experience, if possible. The final diagnosis should be reached on the basis of integration of each assessment findings.

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