Original article

Comorbidity of Posttraumatic Stress Disorder and Alcohol Dependence

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Abstract

Aim: The aim of the research was to examine the extent to which alcohol dependence occurs in comorbidity with PTSD.

Methods: The study included 165 respondents hospitalized at the Department of Psychiatry in Osijek. All respondents were previously diagnosed with PTSD. The overall questionnaire was designed specifically for this study, and it included information about age, gender, education, psychological problems, the continuum of treatment, and questions about alcohol consumption.

Results: Most of the patients live with their wives and children: 34 (54%) of them from the 2004 study, and 40 (39.2%) of them from the 2014 study. Also, 72.1% of the patients who responded to the questionnaire have family support. The marital status of the patients differed significantly over the years (χ^2 test; $p = 0.007$). Results show that 35.2% consume alcohol daily. Furthermore, there are significantly more patients who don`t consume alcohol with the prescribed therapy (χ^2 test; $p = 0.042$).

Conclusion: More than one third of the patients diagnosed with PTSD have alcohol dependence. The number of people diagnosed with PTSD and alcohol dependence increased in 2014 when compared to the 2004 findings, including the number of divorces and the consumption of alcohol with the prescribed therapy.

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Introduction

Several years after the Croatian War of Independence ended, Croatia started to face its consequences, one of them being the rising number of war veterans, which totals up to around 27 000. A problem in particular are the disabled war veterans who suffer from posttraumatic stress disorder (PTSD). It is not just a private problem, but also a social one because veterans experience problems with the performance of daily work tasks, family problems, problems with relationships, and problems with everybody around them. In some cases, it is even possible to develop a dependence on alcohol or drugs (1). Long-term effects of trauma are present within the psychological, social, and biological level. Whether people will overcome their traumatic experiences or develop some of the pathological responses to trauma depends on the characteristics of their own trauma, personality characteristics, and the quality of social support (2).

Posttraumatic stress disorder

Posttraumatic stress disorder is defined as a pathological anxiety that usually develops after an individual experiences or witnesses severe trauma. Initially, a person responds with intense fear, helplessness and horror. Later, the disorder develops a response to an event marked by persistent reenactment of events and symptoms of emotional numbness, avoidance and hyperarousal. PTSD can be acute, chronic and delayed (3). War itself contains probably the largest number of some of the most powerful provoking factors. When people fight in war, they must give up on their moral standards which are necessary to sustain civilized life (4). The symptoms and the fully developed clinical picture of PTSD can occur immediately after a stressful event or shortly thereafter, but the initial symptoms and psychological problems may occur many years after the trauma had occurred. A person usually develops anxiety and depression immediately after experiencing a trauma. The most important characteristic of PTSD is constantly re-experiencing the traumatic event. The patient usually faces incentives from the environment, as well as some agonizing and unwanted memories of the traumatic event. These intrusive memories are accompanied by a corresponding painful, emotional reaction. The patient may suddenly begin to behave or feel as if the traumatic eventis re-occuring. They try to avoid thoughts or feelings associated with the trauma, or the activities and situations which can remind them of the trauma. PTSD can cause sleep disturbances, excessive tension, hypersensitivity, and some problems with concentration and reactions marked by excessive fear. Also, PTSD can cause aggressive reactions of variable intensity. The treatment of PTSD is a combination of drug treatment and psychotherapy. When a traumatic event is weaker, the intensity and the psychological reactions are less expressed, hence there is no need for therapeutic intervention, except for social support. In situations where the same person is experiencing several consecutive traumatic events, they require support from their families and friends, and only in certain situations an expert-centered aid. Group psychotherapy plays a central role in the psychiatric treatment of patients with PTSD (5). The aim of psychotherapy is to reduce the severity of symptoms and to gain more mature adaptive mechanisms. This provides better integration and reintegration into the family, as well as the social environment. During such group sessions, therapists work hard to establish trust, safety, and respect, and they encourage psychoeducation, altruism, acceptance, exposure of a traumatic experience and interpersonal learning (6).

Alcohol dependence

Alcoholism is a progressive, fatal disease characterized by a loss of control of drinking alcoholic beverages, an obsession with alcohol, and a denial of the link between alcohol consumption and deterioration of health and life chances (7, 8). Alcoholism can also be defined as a state with active signs and symptoms of excessive drinking of alcoholic beverages, including increased tolerance to alcohol and

behavioral changes (9). Alcohol causes reduction of concentration, vision, the ability to differentiate between the light stimuli, as well as alertness and attention. Alcoholics are used to drinking alcohol in order to cover up their negative feelings of anger, guilt and depression. The consequences of a long-term alcohol consumption are manifested through fatal damagings to many organ systems, as well as mental disorders. Gradually, alcohol dominates their thoughts, feelings and actions (10). The diagnosis of alcohol dependence can only be set if three or more of the following criteria are observed during the previous year: a strong desire or urge to drink, difficulties in self-control if a person tries to quit drinking, a physiological state of abstinence, an evidence of tolerance, such as increasing the amount of alcohol required to achieve effects which were previously caused by a small amount, a progressive negligence of alternative pleasures, or interests caused by drinking and continuation of alcohol consumption despite clear evidence of its adverse effects. The goal of the treatment is to establish and maintain permanent abstinence from alcohol, as well as to change the lifestyle and the value systems which led to excessive alcohol consumption in the first place. The treatment should include the patient's family, because alcoholism is often a family problem (3).

Comorbidity of posttraumatic stress disorder and alcohol dependence

Additional diagnoses may affect the patients' treatment during their stay in the hospital, namely in terms of the need for diagnostic tests, nursing care, and monitoring. Additional diagnoses may also affect the already provided nursing care and cause a significant increase in costs and a longer stay in the hospital (11). Posttraumatic stress disorder can occur in comorbidity with other mental and/or physical disorders. Comorbidity occurs in 80% of the cases (12). PTSD often co-occurs with alcoholism, depressive disorders, addictions to psychoactive substances, and personality disorders (13). There wasn`t much therapy and rituals for the majority of Croatian veterans as for the veterans of other wars. The lack of social care and support, especially the latter notion, left many Croatian war veterans unexperienced in terms of returning and, in actuality, unable to ever fully return from the war (4).

A nurse working with PTSD patients has an important role in the preservation of their personal and social integrity. The most important interventions are psychosocial support, education, and counseling. Education and psychosocial support help the patient and his/her family to deal with the disease and to change the patient's lifestyle, namely in a way to cope with the changes in the pattern of daily activities, which ultimately contributes to improving the quality of life. Although the development of PTSD depends on many factors, the education of nurses plays an important role both in its treatment and prevention. Through education we raise the level of knowledge of traumatized people about the disorder itself, its symptoms, and the subsequent behavior. Nurses provide support to patients and they encourage patients to talk with their families and friends about traumatic experiences (14).

The aim of the research of comorbidity of posttraumatic stress disorder and alcohol dependence was to examine the extent to which alcohol dependence occurs in comorbidity with PTSD.

Objective and methods

The study was structured retrospectively, namely on the basis of the criteria for inclusion of the PTSD-diagnosed subjects listed in the medical documentation. PTSD was previously diagnosed by a psychiatrist. The study included 165 patients hospitalized at the Department of Psychiatry in Osijek. 63 patients were hospitalized in 2004, whereas 102 were hospitalized in 2014. In the medical documentation of the subjects diagnosed with PTSD, all comorbidity was sought and the focus was on the diagnosis of alcoholism.

The general form was designed for the purpose of this research, and it included information about age, gender, education, job and marital

status, family structure, the existence of physical illness, some lasting psychological problems, the continuity of treatment, and questions about alcohol consumption and the war.

Ethical permission for the study was sought and provided by the Clinical Hospital Centre in Osijek. The research was conducted in an ethical and responsible manner, and is in full compliance with all relevant codes of experimentation and legislation.

Statistical methods

To describe the frequency distribution of the variables, descriptive statistical methods were used. All variables were tested to normality distribution with the Kolmogorov-Smirnov test. The middle values of continuous variables were expressed as an arithmetic mean/average and standard deviation for normally distributed variables, as well as the median and the range of variables which are not normally distributed. To determine the difference between two independent samples, the t-test was used, and for more than two samples, the ANOVA Kruskal Wallis test was used. To determine the difference between the proportions, the $\chi 2$ test was used. All P values were two-sided. The level of significance was set at α = 0.05. For the statistical analysis, the statistical program SPSS (version 16.0, SPSS Inc., Chicago, IL, USA) was used.

Results

The average age of the patients examined was 41.67 years in 2004, and 51.16 in 2014. In 2004, was 63 patients, and 29 of them (46%) belonged to the 29-39 age group. In 2014, was 102 patients, and 54 (52.9%) were in the age group of 51 and over. All patients in 2004 were male. In 2014, 98 patients (96.1%) were male, and only 4 (3.9%) were female.

Most of the patients have completed high school education. Out of a total of 165 patients, 129 (78.2%) had high school education. In 2004, 17 (27%) patients were unemployed, 16 (25.4%) were employed, and 30 (47.6%) were retired. During 2014, 23 (22.5%) patients were unemployed, 16 (15.7%) were employed, and 63 (61.8%) were retired.

The marital status of the patients examined varied significantly over the years (χ^2 test; p = 0,007). The collected data are presented in Table 1.

Table 1. Marital status of patients

			Marital status					Total
			Married	Single	Divorced	Widow	Cohabitation	
Year	2004	Quantity	52	6	3	0	2	63
		%	82,5 %	9,5 %	4,8 %	0,0 %	3,2 %	100,0%
	2014	Quantity	59	15	23	3	2	102
		%	57,8 %	14,7 %	22,5 %	2,9 %	2,0 %	100,0%
Total		Quantity	111	21	26	3	4	165
		%	67,3 %	12,7 %	15,8 %	1,8 %	2,4 %	100,0%

The study shows that there is 14.5% of the patients without children, whereas 20.6% of the patients have one child. Patients with more than one child relate to the following numbers: 41.2% (two children), 17.3% (three children), 3.6 % (four

children), 1.2% (five children), and 1.2% (six children).

Most of the patients live with their wives and children: 34 (54%) of them from the 2004 study, and 40 (39.2%) of them from 2014 study. The number of the patients who live with their parents increased: only 2 (3.2%) patients lived with their parents in 2004, while in 2014, 14 (13.7%) lived with their parents. The number of patients who live alone also increased. During 2004, only 9 (14.3%) patients lived alone, while during 2014, 26 (25.5%) lived alone (χ^2 test; p = 0,032). Results have shown that 72.1% of the patients examined have family support.

The largest number of patients, 130 (78.8%), lived in their own houses or apartments. In 2004, 2 (3.2%) patients lived with their parents, while in 2014 the number increased to 16 (15.7%) (χ^2 test; p = 0,010). Also, in 2014, 16 patients lived with parents (15.7%). During 2004, 2 (3.2%) patients were tenants, while in 2014 there were 12 (11.8%) of them living as tenants.

During 2004, 33 (52.4%) patients lived in the city, whereas in 2014, 53 (52%) more patients lived in the countryside. Overall, out of 165 patients, 83 (50.3%) lived in the countryside.

If we look at the patients' answers to the question of age at the beginning of the war, the arithmetic mean approximated to 28.27 years; the minimum value was 16 years, while the maximum one was 55 years. If we look at the patients' period of involvement during the war, they participated actively for approximately 3.61 years. The minimum value of the war service was less than a year, while the maximum value was 6 years.

Out of 165 patients in 2004 and 2014, 124 (75.2%) have not suffered from injuries during the war. Also, 158 (95.8%) have not experienced the loss of a close person during the war.

Out of 165 patients, 132 (80%) had no problems with the law. Within the remaining 20% of the patients, the majority (14 of 33) consumed alcohol daily.

The data regarding the distribution of patients, considering their alcohol consumption, are presented in Table 2. The majority of the patients (159 = 96.4%) do not consume alcohol with drugs. During 2004, 5 (7.9%) patients consumed alcohol with the prescribed therapy, whereas in 2014, 20 (19.6%) patients consumed alcohol with the prescribed therapy. Results show that there are significantly more patients who don`t consume alcohol with the prescribed therapy (χ^2 test; p = 0,042).

Table 2. Distribution of respondents considering alcohol consumption

			Alcohol consumption				Total
			Every day	Several times a week	Several times a month	Do not consume alcohol	
Year	2004	Quantity	15	0	0	48	63
		%	23,8%	0,0%	0,0%	76,2%	100,0%
	2014	Quantity	43	3	7	49	102
		%	42,2%	2,9%	6,9%	48,0%	100,0%
Total		Quantity	58	3	7	97	165
		%	35,2%	1,8%	4,2%	58,8%	100,0%

None of the patients from the 2004 study were psychiatrically treated before the war. The 2014 study, however, shows that 3 (2.9%) patients were psychiatrically treated before the war.

In the 2004 study, 16 (25.4%) patients were shown to have had some medical problems (χ^2 test; p = 0,011), whereas the number increased to 46 (45.1%) in the 2014 study. During 2004, diabetes mellitus, epilepsy and hypertension were the most common medical problems. During 2014, 20 (43.3%) patients had hypertension, whereas 9 (19.6%) suffered from diabetes mellitus and gastritis. During 2004, 15 (23.8%) patients have been diagnosed with alcohol dependence co-occurring with PTSD, and in 2014 there were 43 (42.2%) patients. There were other co-morbidities which are presented in Table 3.

Table 3. Comorbidities

	Year	
Disorder	**2004**	**2014**
Acute stress reaction	0	4
Anxiety depressive disorder	3	3
Bipolar affective disorder	0	2
Depression	1	0
Depressive episode	3	2
Depressive disorder	9	0
Antisocial personality disorder	1	0
Emotionally unstable personality	0	2
Gambling	0	1
Crisis situation	1	6
Intentional self-harm	0	1
Chronic depressive disorder	1	1
Alcohol addiction	15	43
Delirium	1	0
The emotional unstable personality structure	1	0
Panic disorder	1	0
Persistent delusional disorder	0	2
Personality disorder	1	14
Adjustment disorder	1	3
Returning depressive disorder	4	32
Psychosis paranoides	0	1
Reactio psyhotica	0	2
Psychosis	4	0
Schizophrenia	1	0
Delusional disorder	1	0

Discussion

This research compared the medical documentation of the patients diagnosed with PTSD on the basis of the studies conducted in 2004 and 2014. Some of the results were expected. Almost half of the patients in 2004 were between 29 and 39 years, while in 2014, most of patients were over 51, from which we can conclude that the population is aging. The

majority of the patients examined were married. The reassuring fact is that they also have family support, which is very important for posttraumatic stress disorder. The results associated with this fact relate to the fact that more than half of the patients live with their spouses and children. During hospitalization, the inclusion is very important, particularly the inclusion of family in the therapeutic treatment. Families can ease the situation and motivate the patients to make progress. In all situations, nurses must support the patient's active role and prepare him/her for independent living (15).

A surprising result, however, is the increased number of divorced patients in 2014. There were 23 divorced patients compared to 2004 when there were only 3 divorced patients. In 2004, all 3 divorced patients had been diagnosed with alcoholism. In 2014 there were 23 divorced patients, 14 of which had been diagnosed with alcoholism. All divorced patients who have been diagnosed with alcoholism consumed alcohol daily. Such people are usually, but not necessarily, on their own, and it is harder for them to cope with the situation. Problematic drinking is one of the potential and negative health outcomes of the divorce (16). Marital dissolution can lead not only to increases in the quantity of the alcohol consumed (17), but also to increases in drinking-related problems (18). Possible explanations for this phenomenon involve mediation by divorce-related stress, decreases in family obligations, and changes in the social network and socializing behaviors (19). However, as with other mental health outcomes, individuals are likely to vary in the way the divorce affects their drinking behavior. It is obvious that alcoholism has a greater impact on marital status than PTSD.

In this study, most of the patients had no problems with the law, but the majority of those who do also suffer from alcohol dependence. This confirms the results of the previous studies which have shown that among the evaluated offenders, 57% was associated with addiction to alcohol and/or drugs, as opposed to 43% of the crimes associated with other mental disorders (20). The aim of one of the research was to analyze the impact of alcoholism in expressing and controlling aggression in war veterans with chronic PTSD. The studied sample included 240 war veterans with chronic PTSD. The results show that deprivation, aggression ($p < 0.001$) and opposition ($p < 0.05$) were more expressed in the respondents diagnosed with PTSD and alcoholism, as opposed to those whose PTSD diagnosis was not associated with alcoholism. In the patients who have been diagnosed both with PTSD and alcoholism, there is a statistically significant and predominant aggression apparent on all subscales, especially in comparison to subjects who have been diagnosed only with PTSD (21).

This study shows that more than one third of the patients diagnosed with PTSD suffer from alcohol dependence. These findings are related to the majority of negative results connoted with divorce, problems with law, etc. In 1999, there was research on co-morbidity of PTSD and alcohol dependence which concluded that 52.2% of the patients examined were taking medium and large amounts of alcohol during the war. PTSD is often associated with chronic alcoholism for the purpose of self-healing (22, 23). In general, men drink more often than women. However, habits, and the intensity of alcohol drinking differ throughout the world and are influenced by a number of factors, such as gender, age, and various social and economic factors. In Croatia, 81.3% of the male population and 51.2% of the female population drink frequently. Alcohol addiction is slightly more common in middle aged people who experience lower incomes and who are less educated. As for the level of education, alcoholism is more common in people with higher education, situated in an urban environment, whereas in rural areas alcoholism is predominantly associated with a lower education level (10). Taking all of the previously mentioned findings into consideration, the fact that this study has shown an increased number of alcohol-consuming patients with the prescribed therapy poses a serious issue. Such outcomes can have many negative effects on health, and in no way can contribute to improving mental health.

Conclusion

Based on the study and the results, we can conclude that most of the patients diagnosed with PTSD have family support. More than one third of the patients diagnosed with PTSD suffer from alcohol dependence. The number of people diagnosed with PTSD and alcohol dependence increased in 2014 when compared to the 2004 study, as well as the number of patients who consume alcohol with the prescribed therapy. The situation is the same with the number of the divorced patients in 2014 when compared to the 2004 study, and most of the divorced patients suffer from alcohol dependence. Whereas most of the patients have no trouble with the law, the majority of those who do also suffer from alcohol dependence have troubles with the law.

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Disclosure

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Competing interests. None to declare

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