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IMPACT OF CHRONIC POSTTRAUMATIC STRESS DISORDER ON THE QUALITY OF LIFE OF WAR SURVIVORS

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SUMMARY

Background: *Research data from studies of functional neuroanatomy and neurochemistry indicate various dysfunctions in certain areas of the brain in individuals who suffer from chronic Posttraumatic Stress Disorder. These abnormalities are involved in the evolution of symptoms of PTSD, deterioration of cognitive functions and decreased quality of life of the survivors. The intensity of these symptoms is in direct correlation with the degree of dysfunction in the central nervous system. The aim of our study, was to evaluate the subjective perception of the Quality of life in subjects suffering from chronic PTSD and to compare prior to treatment results to results three and six months after receiving therapy, as well as to analyze whether perception of the Quality of life change related to treatment. The study was conducted at the Psychiatric Clinic of the Sarajevo University Clinical Center.*

Subjects and methods: *The sample consisted of 100 male persons, with war trauma experiences, whose age range was between 35 and 60 years, who were seeking treatment at the Psychiatric Clinic, University of Sarajevo Clinical Center and met the criteria for the diagnosis of chronic PTSD (Posttraumatic Stress Disorder) according to ICD-10. (International Statistical Classification of Diseases and Related Health Problems, 10th Revision). The exclusion criterion was prior psychiatric illness (traumatization before the war) and less than 8 years of education. All subjects received out-patient treatment. Their treatment involved psychopharmacological and psychotherapeutic therapy. The subjects were assessed using the following instruments: Sociodemographic Questionnaire designed by the authors for registering the social and demographic characteristics of the subjects (age, years of education, current employment, and socioeconomic status) and Manchester Quality of Life Scale (MANSA) as a self-report scale. The subjects were assessed prior to treatment, and three and six months after beginning the treatment (follow-up).*

Results: *There was an increase in the mean values of subjective perception of Quality of Life between the first (3.2352), second (3.4447), and third test (3.6090). Differences between these mean values were not statistically significant between the first and second test, but significant between the second and third test. Also differences between sociodemographic characteristics prior to treatment and during six month follow-up were not statistically significant. A significant increase has been noted in the number of contacts with close friends between the first, second and third test. Also, we recorded a decrease in pertaining aggressive and criminal behavior between the three tests.*

Conclusion: *The results of our study indicate that subjects who are suffering from chronic PTSD have a lower subjective perception of their quality of life. Combined psychopharmacological and psychotherapeutic treatment over a period of six months lead to improvement in the perception of quality of life. This may indicate the need for longer treatment of individuals suffering from chronic PTSD. A significant increase has been noted in the number of contacts with close friends between the first, second and third test, reflecting positive treatment effects on everyday life functioning and coping skills.*

Key words: *chronic PTSD - quality of life*

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INTRODUCTION

Posttraumatic stress disorder (PTSD) is an anxiety disorder, currently defined by the coexistence of three clusters of symptoms (re-experiencing, avoidance and hyper arousal), persisting for at least one month in survivors of a traumatic event. These symptoms can be distressing and last for extended periods of time to the extent of significantly impairing the overall functioning of the survivors. These symptoms develop following the exposure to traumatic events (Brewin et al. 2000, Breslau & Kessler 2001). A range of symptoms in PTSD is not part of the diagnostic criteria, but is crucial for full understanding of certain patients, and for appropriate intervention. These include symptoms such as shame, guilt and social mistrust. There may also be impulsivity, hostility, dissociation and somatization symptoms. Particularly when traumas begin early in development, and occur multiple times, PTSD may take a complex form, with negative effects on personal relationships, and on affect and impulse modulation (van der Kolk et al. 1996). The prevalence of PTSD in the general population varies between 1 – 12.3 percent. Prevalence is two times higher in women. Many epidemiological studies have shown that posttraumatic stress disorder frequently presents as a chronic mental health disorder that is extremely susceptible to secondary traumatization. According to the National Co-morbidity Survey, fifty percent of all individuals who develop acute PTSD will develop chronic PTSD. One third of these individuals will have persistent symptoms after ten years (Kessler et al. 1995, Ozer et al. 2003). Factors postulated to affect the development of PTSD are pre-trauma factors, traumatic stressor

exposure and post-exposure factors. Pre-trauma factors include temperament, pre-existing anxiety or previous depression, characteristics of family or origin, socioeconomic status and early trauma history, including abuse in childhood (Brady et al. 2000). Traumatic stressor exposure includes the nature and characteristics of traumatic events. Post-exposure factors include social support, economic resources and additional stressors (Priebe et al. 2003). PTSD symptoms present the consequence of deregulation of a number of neurobiological systems that is caused by trauma. Deregulation of the serotonergic system influences the symptoms of avoidance, impulsivity, and aggression. Increased noradrenergic activity, mainly in the locus coeruleus, leads to hyper arousal and intrusive symptoms. Increased dopaminergic activity, particularly in the prefrontal cortex leads to deterioration of cognitive functions. Glutamatergic (GABA) activity is also involved in neural mechanisms producing fear, and memory loss associated with fear. Deregulation of opioid activity can cause analgesia, avoidance symptoms, and inhibition in chronic PTSD. One important implication of the deregulation of the hypothalamic-pituitary-adrenal axis (HPA) is the reduction of hippocampal volume, and cognitive deterioration that is characteristic for this disorder (Yehuda 1997, Heim et al. 1997). Computerized imaging techniques have found the following neuroanatomical changes in patients with PTSD: decrease in function and volume of the hippocampus in chronic PTSD (correlating with cognitive deterioration), decreased activity of the broca area and other frontal areas of the brain, increased activity of the amygdala, mesencephalon, and hypothalamus (Gurvits et al. 1996). The selective serotonin reuptake inhibitors (SSRIs), the serotonin and noradrenaline reuptake inhibitors (SNRIs), the serotonin antagonist and reuptake inhibitors (SARIs), and the noradrenergic and selective serotonergic antidepressants (NaSSAs) are used for treatment of PTSD and other anxiety disorders. The SSRIs represent the first line in the treatment of anxiety disorders because of their ability to inhibit reuptake of serotonin in presynaptic endings. There is much more information available on SSRIs and other newer antidepressants which are better tolerated, and in some studies (Fawcett et al. 1995, Zajecka 1996) they are also more effective than the older tricyclic antidepressants. The new generation of antipsychotics may be particularly useful and anticonvulsants have also increasingly been used in the treatment of PTSD. The role of psychotherapy in the treatment of PTSD should not be ignored. In treating post traumatic stress disorder (PTSD), psychotherapeutic approaches used are group psychotherapy, individual psychodynamically oriented therapy, supportive psychotherapy, cognitive-behavioral therapy, eye movement desensitization and reprocessing (EMDR), psychological debriefing and psycho education (Richards et al. 1994, Marks et al. 1998, Yalom 1975, Vesti et al. 1992). Most authors combine psychopharmacology, psychodynamic and cognitive-behavioral approaches because there is an opinion that psychopharmacotherapy may improve the effectiveness of other methods of treatment (Friedman 1998). Quality of life represents a subjective perception of an individual, a feeling of happiness and harmony. Apart from psychological, physical, financial, personal, and social wellbeing, quality of life also includes freedom, safety and the respect for human rights (Rapaport et al. 2005, Warshaw et al. 1993). Indicators of the quality of life include not only wealth and employment, but also the environment, physical and mental health, education, recreation and leisure time, and social belonging. Quality of life assessments are increasingly used in research on the mental health of war survivors and army veterans (Black et al. 2004, Ikin et al. 2009). The results of many studies on torture survivors, war trauma survivors and combat war veterans indicate the importance of interventions (medical, social, psychological, legal) to improve the quality of life in these groups of subjects. The quality of life of subjects suffering from chronic PTSD correlates with the type and intensity of traumatic events, the severity of psychological sequele, the extent of the dysfunction of the CNS, and with the principles of the multidisciplinary treatment and health service provision in a post war society with family, social and legal support (Ortmann et al. 1987, Pedersen 2002).

SUBJECTS AND METHODS

The sample consisted of 100 male persons, with war trauma experiences, whose age ranged between 35 and 60 years, who were seeking treatment at the Psychiatric Clinic, University of Sarajevo Clinical Center and met the criteria for the diagnosis of chronic PTSD (Post-traumatic Stress Disorder) according to ICD-10 (International Statistical Classification of Diseases and Related Health Problems, 10th Revision). All subjects agreed to sign informed consent for participation in the study. The exclusion criterion were prior psychiatric illness (traumatization before the war) and less than 8 years of education. All subjects received out-patient treatment.

The subjects were assessed using the following instruments: Sociodemographic Questionnaire designed by the authors for registering the social and demographic characteristics of the subjects (age, years of education, current employment, socioeconomic status) and Manchester Short assessment of Quality of Life (MANSA), as a self -report scale (Priebe et al. 1999). The questionnaire contains 16 items. It has 10 questions with responses in Likert format (1, 2, 3, 6, 7, 8, 11, 12, 13, 14, 15 and 16), ranging from 1 to 7. Lower scores indicate a lower level of subjective perception of the Quality of Life. The Satisfaction Scale is designed as follows: (1) Couldn't be worse, (2) Displeased, (3) Mostly Dissatisfied, (4) Mixed, (5) Mostly satisfied, (6) Pleased, (7) Couldn't be better and four questions with

Yes/No answer (4, 5, 9 and 10). The subjects were assessed at three points: Pre-treatment, three months and six months follow-up. All subjects were treated with a combination of pharmacotherapy and psychotherapy. For pharmacotherapy patients received: antidepressants (fluoxetin, sertralin, paroxetin, citalopram, mirtazapin, and venlafaxin), mood stabilizers (lamotrigin, carbamazepine), and antipsychotics: risperidone, olanzapine, levomepromazine, haloperidol, promazin). The following methods of psychotherapy were used: Supportive psychotherapy, insight psychotherapy, and supportive-expressive psychotherapy in individual, group and family settings. The medications and method of psychotherapy were chosen as were indicated for each subject individually.

RESULTS

The age of subjects was between 35 and 60 years. The majority of the respondents were aged between 53-60 (51%), the lowest age group represented were those between 35-40 years of age (12%).

The majority of subjects had completed 8 years of education (39%), while only one subject (1%) had completed 16 years of education. The analysis of the results obtained by the social and demographic questionnaire in three points (pre-treatment, after 3 and 6 months follow-up), show no statistically significant differences in the following parameters: current employment status and socioeconomic status. Before treatment current employment status was 29% which increased by the end of the treatment to 31%. Two patients (2%) who got a job before the third test were of the age group between 35-40 years, one with 12 years of education, and another with 14 years of education. Forty per cent were unemployed before treatment, and after 6 months, at the end of treatment 36% were unemployed. Before treatment 31% of subjects were retired, during the second test, retirement had risen to 32%, and, by the third test, at the end of the treatment 33% were retired. Socioeconomic status before treatment was very poor 39%, moderate 20%, while at the end of treatment it was very poor for 35% and moderate for 22% of subjects. Table 1 presents social and demographic characteristics of the subjects in the three tests.

Table 1. Sociodemographic characteristics of subjects in three tests

Sociodemographic characteristics	N	N	N	χ^2
Gender	Male 100	Male 100	Male 100	
Test	1st test %	2nd test %	3rd test %	
Age (years)	35-40 (12)	35-40 (12)	35-40 (12)	
	41-46 (17)	41-46 (17)	41-46 (17)	χ^2=0.000
	47-52 (20)	47-52 (20)	47-52 (20)	p>0.05
	53-60 (51)	53-60 (51)	53-60 (51)	
Years of education	Percentage	Percentage	Percentage	
8 years	39	39	39	
11 years	29	29	29	χ^2=0.000
12 years	26	26	26	p>0.05
14 years	5	5	5	
16 years or more	1	1	1	
Currently employed	Percentage	Percentage	Percentage	
Yes	29	29	31	χ^2=0.378
No	40	39	36	p>0.05
Retired	31	32	33	
Socioeconomic status	Percentage	Percentage	Percentage	
Very bad	39	38	35	
Bad	35	36	37	χ^2=0.417
Moderate	20	20	22	p>0.05
Good	6	6	6	
Very good	0	0	0	

Abbreviation: 1st test: before treatment, 2nd: 3-months follow up, 3rd: 6-months follow up. p>0.05 in three tests show statistically non-significant differences

Our results indicate significant increase in "Overall satisfaction with life today" between the first and the second test, mean value of the first test was (2.49), second test (2.88). P<0.05, and a non-significant increase in mean value between the second and third tests; the second test mean value was 2.88 and the third test mesn was 2.96; p>0.05. Satisfaction with work or unemployment was rated with a mean value of (2.05) at the beginning and with a mean value (2.88) at the end of the study. The difference in mean values between the first and second test was significant P<0.05, but not significant between the second and third tests p>0.05. Satisfaction with financial situation showed a significant increase between the first and second, as well as between the second and third tests; p<0.05. Satisfaction with number of friendships showed a non-significant increase between the first and second tests, but a significant increase between the second and third tests;

p<0.05. Satisfaction with activities during free time showed a significant increase between the first and second tests, p<0.05, but a non-significant increase between the second and third tests p>0.05. Satisfaction with family relations showed a non-significant increase between the first and second tests, p>0.05, but a significant increase between the second and third tests p<0.05. There was a non-significant increase in response to item No 15 (satisfaction with one's physical health): starting from a mean value (2.96) at the first test to a mean value (3.04) in the third test. Responses to the item No 16 (satisfaction with psychological health) also reflected a non-significant increase between the first test with mean value (2.42) and the third test with mean value (3.15). Analysis of the responses to items No 15 and No 16 indicates that chronic PTSD affects both the physical and the psychological health of the subjects. Table 2 presents MANSA responses (mean values) in the three tests.

Table 2. Mansa responses in three tests mean values

N	Items	M 1st test	*SD*	M 2nd test	*SD*	*M* 3rd test	*SD*	*t-test* 1^{st}-2^{nd}	*t-test* 2^{nd}-3^{rd}
98	Item1: Overall satisfaction with life today?	2.49	0.51	2.88	0.70	2.96	0.56	t=4.4578 p<0.05	t=0.8835 p>0.05
97	Item 2: Satisfaction with work or education. If unemployed or retired how satisfied are you with that?	2.05	0.71	3.00	0.53	2.88	0.62	t=10.563 p<0.05	t=1.449 p>0.05
98	Item3: Satisfaction with financial situation	2.16	0.49	2.60	0.45	2.73	0.42	t=6.5473 p<0.05	t=2.0907 p<0.05
95	Item 6: Satisfaction with number friendships	3.15	0.53	3.29	0.65	3.68	0.60	t=1.627 p>0.05	t=4.2972 p<0.05
98	Item 7: Satisfaction with activities in the free time	3.10	0.53	3.56	0.49	3.69	0.67	t=6.3089 p<0.05	t=1.5504 p>0.05
96	Item 8: Satisfaction with accommodation	4.08	0.60	4.05	0.53	3.97	0.54	t=0.3672 p>0.05	t=1.0359 p>0.05
96	Item11: Satisfaction with personal safety	4.08	0.50	4.08	0.48	4.20	0.38	t=0.4241 p>0.05	t=1.9205 p>0.05
95	Item12: Satisfaction with the people you live with/ satisfaction with living alone	4.63	0.52	4.63	0.41	4.63	0.47	t=0.000 p>0.05	t=0.000 p>0.05
96	Item13: Satisfaction with sexual life	2.45	0.65	2.45	0.48	3.00	0.72	t=0.000 p>0.05	t=6.2275 p>0.05
95	Item14: Satisfaction with family relations	5.21	0.49	5.21	0.38	4.91	0.59	t=0.000 p>0.05	t=3.5961 p<0.05
96	Item15: Satisfaction with physical health	2.96	0.48	2.96	0.72	3.04	0.52	t=0.000 p>0.05	t=0.8826 p>0.05
95	Item16: Satisfaction with mental health	2.42	0.69	2.42	0.55	3.15	0.74	t=0.000 p>0.05	t=7.717 p>0.05

Abbreviation: N: number of subjects, M: mean, SD: standard deviations,
1st test: before treatment, 2nd: 3-months follow up, 3rd: 6-months follow up.

A significant increase has been noted in the number of contacts with close friends between the first (39.6%), second (67.4%), and third (80.6%) test. We recorded a significant decrease in positive answers pertaining to aggressive and criminal behavior between the three tests, p<0.05. Table 3 presents MANSA responses in the three tests to the four questions with yes/no answers.

Table 3. Mansa responses in three tests on four questions with yes/no answers

N of subjects	Item	% answers yes 1st test	% answers yes 2nd test	% answers yes 3rd test
98	Item 4: Do you have a close friend? YES/NO	66.8	70.8	65.4
98	Item 5: Have you seen a close friend in the course of last week? YES/NO	39.6	67.4	80.6
94	Item 9: Involved in criminal activity in the past year? YES/NO	5.6	0	1
95	Item 10: Victim of assault in the past year? YES/NO	4.7	0	1

$\chi 2$=26.734; p<0.05 Abbreviation: N: number of subjects, 1st test: before treatment, 2nd: 3-months follow up, 3rd: 6-months follow up

There was an increase in the mean values of subjective perception of Quality of life between the first (3.2352), second (3.4447), and third (3.6090) test. Differences between these mean values are statistically non-significant between the first and second tests, but significant between the second and third tests. Table 4 presents MANSA (mean values) for Quality of life in three tests (prior to treatment, and at three and six months follow-up).

Table 4. Mansa mean values for quality of life in three tests

Quality of life	N	*M*	*SD*
1st	100	3.235	0.9273
2nd	97	3.444	0.8585
3rd	97	3.609	0.9783

1^{st}-2^{nd} – t=1.6403; p>0.05; 2^{nd}-3^{rd} – t=23.9492; p<0.05
Abbreviation: N: number of subjects, M: mean, SD: standard deviations

DISCUSSION

Results of this study indicate that the survivors suffering from chronic PTSD are mostly dissatisfied with their quality of life. Satisfaction with employment and financial status was rated as unsatisfactory at the beginning and as mostly dissatisfied at the end of the study. The current employment status of the subjects was very low. Only 29% of subjects were employed at the beginning of the study while only 31% were employed at the end of the study. Thirty one per cent of the subjects were retired at the beginning of the study with an increase at the end of the study to 33%.

There were 40% of unemployed subjects at the beginning of the study which decreased to 36% at the end of the study. This indicates that there is no rehabilitation in the absence of comprehensive compensation for chronic PTSD survivors. Our results confirm that chronic PTSD impairs the functioning of the survivors, and that care should be taken to avoid current social traumatization, including employment and improvement of economic status. In our study 39 % of subjects had a very poor social and economic status at the beginning of the treatment, with 35% at the treatment end. It is very important to stress the existence of clear satisfaction in relationships with family members, which indicates a significant source of protective family factors for PTSD survivors and their quality of life. A significant increase has been noted in the number of contacts with close friends between the first, second and third test, and also we recorded a significant decrease in positive answers pertaining to aggressive and criminal behavior between the three tests. This reflects better social adaptation, impulse control and ability for intellectual processing of frustrating situations in the course of treatment. This reflects the effect of psychotherapy and pharmaco-therapy on the development and use of adequate and healthy coping strategies which represent one of the main prerequisites for recovery (Tata-Arcel et al. 1998; Bravo-Mehmedbašić et al. 2003). Numerous somatic and psychological co-morbid conditions frequently follow chronic PTSD, and these present further obstacles to successful treatment. The negative impact of PTSD on quality of life is evident in our results, and in accordance with earlier findings based on investigations with PTSD survivors (Kuehner et Buerger 2005; Kučukalić et al. 2007). Also the negative impact of PTSD on quality of life is registered in the analysis of the relationship between symptoms and quality of life in veterans treated for post-traumatic stress disorder (Schnurr et al. 2006). To explore quality of life is important for better identification of the factors which affect the life of PTSD survivors. Our results confirm the protective effects of treatment, but indicate also obstacles for successful treatment of PTSD survivors such as unemployment, low social and economic status, and the lack of participation by responsible institutions in solving the social-economic and legal status of this population group. Similar results were found in the research by (Ljubotina et al. 2007) in which it is stated that even 10 years after the traumatization, PTSD symptoms among war veterans remained intense and that undergoing therapy over one year did not produce significant improvements, except on the intrusions dimension. Veterans were highly sensitive to the manner in which their primary social environment and society as a whole react to their problems.

CONCLUSION

The results of our study indicate that the survivors suffering from chronic PTSD are mainly dissatisfied with their quality of life. After six months of combined psychotherapy and pharmacotherapy, we achieved a significant increase in the subjects' subjective perception of their life quality. There was a notable increase in social communication and involvement in the social contacts of the subjects. A significant increase has been noted in the number of contacts with close friends between the first, second and third tests. There was a significant decrease in aggressive and criminal behavior. This reflects improvement in social adaptation and impulse control as a consequence of treatment. Assessment of quality of life in patients treated for chronic PTSD provides tools for better evaluation of psychosocial treatment as well as the development of preventative programs. Our results also indicate the need for longer treatment programs, and the unpredictability of outcomes in spite of the fact that the survivors are receiving help from trained professionals. Subjects with chronic PTSD will improve their quality of life while using combined psychotherapy and pharmacotherapy, which will assist the persons with chronic PTSD to develop adequate, adaptive coping strategies in facing with and adequate resolution of everyday problems. However the involvement of the social community through responsible institutions is necessary due to these patients' social, economic and legal problems.

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