

## COULD ALEXITHYMIA PREDICT SUICIDE ATTEMPTS – A STUDY OF CROATIAN WAR VETERANS WITH POST-TRAUMATIC STRESS DISORDER

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### SUMMARY

**Background:** To investigate the possibility if alexithymia could be used as a predictor of attempted suicide among patients suffering from post-traumatic stress disorder.

**Subjects and methods:** The study was based on 127 veterans from the 1991-1995 war in Croatia. All the patients involved in this study were previously diagnosed with PTSD. The questionnaires (socio-demographic questionnaire, Mississippi scale for combat related PTSD questionnaire, and 20-item Toronto Alexithymia Scale questionnaire) were administered by investigators.

**Results:** The results suggest that alexithymia was significantly associated with attempted suicide ( $P=0.020$ ). Furthermore, alexithymia remained a significant predictor of an attempted suicide even in the multivariate regression model, which yielded an odds ratio (OR) of 2.87 (95% confidence intervals 1.18-7.00).

**Conclusions:** These results point out that alexithymia can be considered as a potential risk factor for suicide in this population, suggesting that it may also be used as an indicator of worsening psychological status and attempted suicide in other population groups with higher alexithymia prevalence.

**Key words:** alexithymia – suicide - post traumatic stress disorder - PTSD

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### INTRODUCTION

Alexithymia is defined as difficulty with verbal expression of emotions and fantasy elaborations (Lesser & Lesser 1983). The term was formed following investigation of psychosomatic patients (Sifneos 1973), among drug users and patients with post-traumatic stress disorder (PTSD) (Krystal 1993).

Even though alexithymia is still not clearly defined as a diagnostic category in modern psychiatry, alexithymic characteristics can be found in patients with many facets of physical and mental morbidity. Besides, this concept prompted developmental theorists to expand our knowledge about how early physiologic experiences and bodily sensations acquire mental representations in forms of feelings and thoughts, which eventually result in expression of emotions (Krystal 1993). The capacity for mentalization is undermined in a significant proportion of individuals who have experienced trauma. In individuals in whom the capacity for mentalization is already weak, trauma may bring about a complete collapse. The collapse of mentalization in the face of trauma entails a loss of awareness of the relationship between internal and external reality (Fonagy & Target 2000). Alexithymia can also be seen as a tendency to experience psychological distress in the form of somatic symptoms

(Kušević & Marušić 2014). Finally, alexithymia was also described as a risk factor for all-cause mortality in a prospective study of male outpatients with major depression in Finland (Saarijarvi et al. 2006). Few studies demonstrated the importance of alexithymia among suicidal patients, but the results were not consistent (Sayar & Acar 2003, Hintikka et al. 2004, Iancu et al. 1999).

Alexithymia was also associated with PTSD, accounting for variance in PTSD symptoms and predicting numbing and hyperarousal symptoms, but not avoidance or reexperiencing symptoms (four PTSD symptom clusters) among nurses and ambulance personnel working in military facilities (Declercq et al. 2010). It has been suggested that emotion regulation difficulties are part of the complex sequelae of early-onset chronic interpersonal trauma or that PTSD in general has been related to emotion regulation difficulties (Ehring & Quack 2010). This is supported by the results from a prospective study of PTSD, which showed that firefighters who had high level of hostility and a low level of self-efficacy at baseline experienced a significant increase in measures of PTSD symptoms, alexithymia and other psychological morbidity during the two-year follow-up period (Heinrichs et al. 2005).

Estimated prevalence of PTSD in combat veterans varies between studies. A study among veterans from

Operations Enduring Freedom and Iraqi Freedom showed that 11-30% of returning veterans met screening criteria for PTSD (Hoge et al. 2004). Data for Croatian war veterans are scarce, but the prevalence of PTSD was estimated to be close to 17% for fully developed form of the disorder and 11% for the abortive form (Kušević 1999). With such high prevalence, it is important to keep in mind that PTSD is known to be associated with many different risk factors, increased mortality and suicidal ideation (Jakupcak et al. 2009, Jakovljevic et al. 2012, Loncar et al. 2014, Jaksic et al. 2015).

The aim of this study was to investigate the association between alexithymia and suicide attempt among 1991-1995 War veterans from Croatia suffering from post-traumatic stress disorder.

## SUBJECTS AND METHODS

War veterans from Croatian Homeland War 1991-1995 were included in this study. The study was performed at the Department of Psychological medicine, Clinical Hospital Centre Zagreb, Croatia. All the patients involved in this study were previously diagnosed with PTSD, which was established by the psychiatrist according to the diagnostic criteria listed in the International Classification of Diseases (ICD-10). This diagnosis was further confirmed using an interview according to ICD-10, and the symptoms intensity was assessed using Mississippi Scale for Combat-Related PTSD questionnaire (M-PTSD). This was performed at Department of Psychological medicine, upon inclusion of the patients. Patients with psychiatric comorbidity, like psychosis, anxiety-depressive disorder, depression and those with PTSD diagnosis established prior to the War were excluded from this study, as well as people with physical illness diagnosed prior to the War. Ethical approval was received from Ethical committee of Clinic for Psychological Medicine in Clinical Hospital Centre Zagreb, Zagreb and it conforms to the provisions of the Declaration of Helsinki in 1995 (as revised in Edinburgh 2000). Patients signed informed consent, and all the questionnaires were administered by investigators (socio-demographic questionnaire, Mississippi scale for combat related PTSD questionnaire, and 20-item Toronto Alexithymia Scale questionnaire).

### Statistical analysis

Data were analysed with descriptive and analytical methods; percentages were reported for categorical variables, while medians and interquartile ranges were used for numerical variables. Chi-square and Mann-Whitney test were used respectively, while the final analysis stage was performed with logistic regression, aiming to predict which of the predictor variables was the most strongly associated with attempted suicide. The data were analysed with SPSS version 13 (SPSS Inc, Chicago, USA), with significance set at  $P < 0.05$ .

## RESULTS

A total of 127 male patients were involved in this study. Average patient age was  $48.14 \pm 6.58$  years. Most patients completed secondary school, were retired, married and had three children (Table 1).

**Table 1.** Basic characteristics of the investigated sample

Characteristic	N	%
Education		
Primary school	20	15.7
Secondary school	92	72.4
College or University degree	15	11.8
Employment status		
Employed	5	4.0
Unemployed	20	16.1
Retired/ veteran retirement	70	56.5
Sick leave or other types of care	29	23.4
Marital status		
Married	92	72.4
Single	10	7.9
Divorced	19	15.0
Other	6	4.7
Number of children		
One	17	14.0
Two	34	28.1
Three	46	38.0
Four or more	24	19.8

**Table 2.** Logistic regression results which predicted a suicide attempt among war veterans

Characteristic	P	OR (95% CI)
Marital status		
Married (Ref.)	0.799	1.00
Single	0.462	2.34 (0.24-22.62)
Divorced	0.973	1.04 (0.01-11.47)
Other	0.419	1.63 (0.50-5.34)
Number of children		
One (Ref.)	0.989	1.00
Two	0.975	0.98 (0.21-4.50)
Three	0.975	1.02 (0.24-4.33)
Four or more	0.818	1.21 (0.24-6.14)
Education		
Primary school (Ref.)	0.396	1.00
Secondary school	0.180	0.45 (0.14-1.45)
College or University degree	0.558	0.59 (0.10-3.42)
Employment status		
Employed (Ref.)	0.614	1.00
Unemployed	0.846	0.77 (0.06-10.59)
Retired/veteran retirement	0.787	1.38 (0.13-14.59)
Sick leave or other types of care	0.544	2.12 (0.19-23.91)
Alexithymia	0.021	2.87 (1.18-7.00)

Attempted suicide was reported in 37 patients (29.1%). Majority of them reported a single attempt (24; 66.7% among those who responded to this question). The breakdown according to basic characteristics listed in Table 1 indicated that neither of them as significantly associated with attempted suicide; education ( $\chi^2=0.41$ ;  $P=0.814$ ), employment ( $\chi^2=2.54$ ;  $P=0.468$ ), marital status ( $\chi^2=1.74$ ;  $P=0.628$ ) and number of children ( $\chi^2=0.02$ ;  $P=0.999$ ).

A total of 52 (40.9%) cases of psychiatrist-based diagnosis of alexithymia were established. Even a simple cross-tabulation of attempted suicide with established alexithymia diagnosis suggested significant association; a total of 31 (34.4%) cases of alexithymia were in the group that had not reported attempted suicide, while there were 21 cases (56.8%) of those with established alexithymia diagnosis in the attempted suicide group ( $\chi^2=5.40$ ;  $P=0.020$ ). A multivariate analysis confirmed this result, suggesting that the presence of alexithymia conveyed increased risk of attempted suicide with an odds ratio of 2.87 (Table 2).

## DISCUSSION

The results of this study suggest that alexithymia can be considered as a risk factor for attempted suicide among war veterans with post-traumatic stress disorder. However, it should also be noted that the main result of this study, which was replicated in a multivariate analysis, did suggest rather marginal strength of association, despite relatively high odds ratio on 2.87. This finding confirms some previous attempts to understand the significance of alexithymia (Shipko et al. 1983), and suggests that further studies in other groups and countries should be undertaken in order to more firmly and clearly establish alexithymia as a risk factor that could be used in everyday clinical work.

Suicide remains a substantial issue for war veterans, both in Croatia and other countries as well. Earlier reports of our research team suggest the role of comorbidity (Marčinko et al. 2006), spirituality and religiosity (Nadj et al. 2008), spiritual well-being and cortisol (Mihaljević et al. 2011) in the process of suicidality for Croatian war veterans suffering from PTSD. The societal burden of suicides may be considerable (Kuehn 2009), perhaps even similar to the extent of wartime casualties for certain conflicts. The occurrence of suicides may also be aggravated by the economical issues and galloping recession (Lineberry 2009), further raising the need for proper medical and societal actions to reduce the suicide toll.

It should be noted that this study suffers from several important limitations. Firstly, the sample size for this study was relatively small, thus raising the possibility of random error. Secondly, this study suffers from a certain time lag, since exposure to stressful events occurred nearly 20 years prior to study preparation. Following, this finding might even be specific

for some cultures and societies, meaning that further studies should be performed in order to more clearly establish alexithymia and a reliable and usable risk factor. Nevertheless, it seems that within this sample alexithymia was associated with attempted suicide, suggesting that a potentially useful clinical indicator could be used in the prevention of suicide among patients suffering from post-traumatic stress disorder.

## CONCLUSIONS

According to the results of this study it can be pointed out that alexithymia can be considered as a potential risk factor for suicide in the population of War veterans from Croatian Homeland War. Alexithymia may also be used as an indicator of worsening psychological status and attempted suicide in other population groups, which have higher prevalence of alexithymia comparing to general population, but this needs to be further investigated. The importance of alexithymia screening in everyday clinical practice can be seen through eventual prevention of suicide within the group of combat veterans suffering from PTSD and also other population groups with higher alexithymia prevalence.

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