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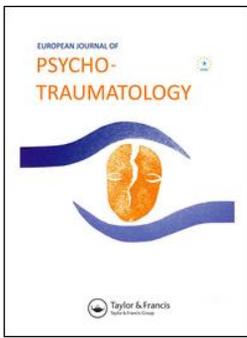
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CLINICAL RESEARCH ARTICLE

Complex PTSD among treatment-seeking veterans with PTSD

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ABSTRACT

Background: In the ICD-11 hierarchical classification structure, posttraumatic stress disorder (PTSD) and complex PTSD (CPTSD) are separate and distinct but also 'sibling' disorders, meaning that the diagnoses follow from the parent category of traumatic stress disorders.

Objective: The aim of this study was to examine the prevalence of CPTSD in treatment-seeking war veterans with PTSD more than 20 years after the exposure to cumulative war-related trauma(s). The second aim was to examine if there was an association between demographic and psychosocial variables and CPTSD or PTSD.

Method: A sample of 160 male war veterans with PTSD referred to the outpatient service of the PTSD Referral Centre at the Clinical Hospital Centre (CHC) Rijeka participated in a cross-sectional study. Psychiatric comorbidity was assessed using the Mini-International Neuropsychiatric Interview (MINI) and participants completed validated self-report measures: The Life Events Checklist for DSM-5 (LEC-5), International Trauma Questionnaire (ITQ).

Results: In total, 80.63% of the sample met criteria for a probable diagnosis of CPTSD. The study revealed that there was no significant difference in the length of deployment, in the intensity of the PTSD symptoms, types of trauma exposure and pharmacotherapeutic treatment between PTSD and CPTSD group. It was found that veterans with PTSD were more likely to be divorced and to participate in PTSD clubs. On the other hand, veterans with CPTSD were significantly more likely to have higher levels of functional impairment and comorbidity with general anxiety disorder (GAD) compared to the PTSD group.

Conclusions: This study supports the proposition that a prolonged trauma of severe interpersonal intensity such as war is related to high rates of CPTSD among treatment-seeking veterans, years after the war. The distinction between PTSD and complex PTSD may help the selection of person-centred treatment interventions that would target specific mental health and functional problems in patients.

TEPT complejo entre veteranos que buscan tratamiento con TEPT

Antecedentes: En la estructura de clasificación jerárquica de la CIE-11, el trastorno por estrés postraumático (TEPT) y el TEPT complejo (TEPT-C) son trastornos separados y distintos, pero también "hermanos", lo que significa que los diagnósticos se derivan de la categoría principal de los trastornos por estrés traumático.

Objetivo: El objetivo de este estudio fue examinar la prevalencia del TEPT-C en veteranos de guerra en busca de tratamiento con TEPT más de 20 años después de la exposición a trauma(s) acumulado(s) relacionado(s) con la guerra. El segundo objetivo fue examinar si había una asociación entre las variables demográficas y psicosociales y el TEPT-C o el TEPT.

Método: Una muestra de 160 veteranos de guerra, varones con TEPT derivados al servicio ambulatorio del Centro de Referencia del TEPT en el Centro Clínico Hospitalario (CCH) Rijeka, participó en un estudio transversal. La comorbilidad psiquiátrica se evaluó utilizando la Mini-International Neuropsychiatric Interview (MINI) y los participantes completaron las medidas validadas de autoinforme: La Lista de Verificación de Eventos Vitales para el DSM-5 (LEC-5 en su sigla en inglés), Cuestionario Internacional de Trauma (ITQ en su sigla en inglés).

Resultados: En total, el 80.63% de la muestra cumplió con los criterios para un diagnóstico probable de TEPT-C. El estudio reveló que no hubo diferencias significativas en la duración del despliegue, en la intensidad de los síntomas del TEPT, los tipos de exposición al trauma y el tratamiento farmacoterapéutico entre el grupo de TEPT y TEPT-C. Se descubrió que los veteranos con TEPT tenían más probabilidades de divorciarse y participar en clubes de TEPT. Por otro lado, los veteranos con TEPT-C tenían significativamente más probabilidades de tener mayores niveles de deterioro funcional y comorbilidad con Trastorno de Ansiedad General (TAG) en comparación con el grupo de TEPT.

Conclusiones: Este estudio apoya la propuesta de que un trauma prolongado de intensidad interpersonal severa, como la guerra, está relacionado con altas tasas de TEPT-C entre los

HIGHLIGHTS
• Our study revealed high rates (80%) of a probable diagnosis of CPTSD among treatment-seeking war-veterans with PTSD.
• CPTSD was associated with higher levels of disorder-related functional impairment in comparison to PTSD.
• The distinction between PTSD and CPTSD may help the selection of person-centered treatment interventions that would target specific mental health and functional problems in patients.

veteranos que buscan tratamiento, años después de la guerra. La distinción entre el TEPT y el TEPT complejo podría ayudar a la selección de intervenciones de tratamiento centradas en la persona, que apunten a problemas funcionales y de salud mental específicos en los pacientes.

寻求治疗的退伍军人中的复杂PTSD

背景: 在ICD-11分类结构中, 创伤后应激障碍 (PTSD) 和复杂性PTSD (CPTSD) 是相互区别的 '姊妹'障碍, 就是说这二者的诊断来自创伤性应激障碍的一级类别。
目的: 本研究旨在考察在遭受累积性战争创伤后超过20年的寻求PTSD治疗的退伍军人中 CPTSD的患病率。第二个目的是检查人口统计和社会心理变量与CPTSD或PTSD之间是否存 在关联。
方法: 160名患有PTSD的退伍军人的样本被转介到临床医院中心 (CHC) 的PTSD中心门诊, 参 与了一项横断面研究。使用MINI对精神病合并症进行了评估, 参与者完成了经过验证的自 我报告量表:DSM-5的生活事件清单 (LEC-5) 和国际创伤调查表 (ITQ) 。
结果: 总共有80.63%的参与者符合可能诊断为CPTSD的标准。该研究表明, 服役时间长度, PTSD症状的强度, 创伤暴露的类型和药物治疗之间在PTSD和CPTSD组之间没有显著差异。 患有PTSD的退伍军人更有可能离婚并参加PTSD小组。另一方面, 与PTSD组相比, 患有 CPTSD的退伍军人更有可能具有更高水平的功能障碍和合并患有普通焦虑症 (GAD) 的合 并症。
结论: 该研究支持假设:战后多年后, 长时间的严重人际创伤 (例如战争) 与寻求治疗的退伍 军人中CPTSD的高发生率有关。 PTSD与复杂PTSD的区别可能有助于选择以人为中心的治 疗干预措施, 这些干预措施将针对患者的特定心理健康和功能问题。

1. Introduction

The recently published eleventh edition of the International Classification of Diseases, ICD-11 (World Health Organization [WHO], 2018), included the new condition, complex posttraumatic stress disorder (CPTSD), in addition to posttraumatic stress disorder (PTSD). CPTSD was first described by Herman (Herman, 1992a, 1993) as a posttraumatic condition characterized by disturbances in the domains of interpersonal relationships, somatization, affect regulation, dissociation, and sense of self. The syndrome has been alternately named Disorders of Extreme Stress Not Otherwise Specified (DESNOS) (Herman, 1992b; Pelcovitz et al., 1997). The clinical experience and the data from the field trials showed that nearly all of those who meet the criteria for DESNOS also meet criteria for PTSD (Roth, Newman, Pelcovitz, Van der Kolk, & Mandel, 1997), supporting the proposed ICD-11 formulation of CPTSD, which incorporates PTSD symptoms as a core component.

In the ICD-11 hierarchical classification structure, PTSD and CPTSD are 'sibling' disorders, meaning that the diagnoses follow from the parent category of traumatic stress disorders. The stressor acts as the 'gate' that allows consideration of a diagnosis of either PTSD or CPTSD (Cloitre, Garvert, Brewin, Bryant, & Maercker, 2013). The CPTSD diagnosis includes additional features of affect dysregulation, negative self-concept and disturbances in relationships (Cloitre, Garvert, Weiss, Carlson, & Bryant, 2014; Maercker et al., 2013; WHO, 2014). The addition of CPTSD to the ICD-11 is based on the evidence that individuals with the disorder have a poorer prognosis and may benefit from different treatments as compared to individuals with PTSD (Brewin et al., 2017).

Although the differential diagnosis between the two disorders is determined by the symptom profile, the types of events associated with higher risk for ICD-11 CPTSD are expected to be sustained, repeated, or multiple forms of traumatic exposure (Cloitre et al., 2013; Ford & Courtois, 2014; Gilbar, Hyland, Cloitre, & Dekel, 2018; Herman, 1992a; Van der Kolk, 1987). Typically, CPTSD is associated with prolonged interpersonal trauma particularly with multiple forms of childhood interpersonal trauma (Cloitre et al., 2013, 2014; Frewen, Zhu, & Lanius, 2019; Karatzias et al., 2019, 2017; Knefel, Garvert, Cloitre, & Lueger-Schuster, 2015; Knefel & Lueger-Schuster, 2013; Van der Kolk, Ford, & Spinazzola, 2019). Exposure to severe trauma in childhood is associated with dissociation (e.g. D'andrea, Ford, Stolbach, Spinazzola, & van der Kolk, 2012; Terock et al., 2016) and a growing body of research shows that those with CPTSD have significantly higher levels of dissociative experiences compared to those with PTSD (Hyland, Shevlin, Fyvie, Cloitre, & Karatzias, 2019; Powers et al., 2019; van Dijke, Ford, Frank, & van der Hart, 2015). Cloitre et al. (2013) found that CPTSD resulted in significantly greater functional impairment than PTSD. Recent research has identified a number of psychosocial and demographic factors as risk factors for CPTSD. Individuals with CPTSD are more likely to be unemployed, unmarried, living alone (Hyland et al., 2017a; Karatzias et al., 2017) and of younger age (Karatzias et al., 2019). Females are twice as likely as males to be diagnosed with PTSD and CPTSD (Karatzias et al., 2017). CPTSD is associated with a greater number of co-morbid disorders (Perkonigg et al., 2016) and significantly higher levels of psychosocial impairment (Elklit, Hyland, & Shevlin, 2014; Karatzias et al., 2017; Murphy, Elklit, Dokkedahl, & Shevlin, 2016) than is ICD-11 PTSD. In clinical samples, preliminary evidence suggests

that CPTSD is a more commonly observed condition than PTSD (Karatzias et al., 2018).

The aim of this study is to examine the prevalence of CPTSD in treatment-seeking veterans with PTSD more than 20 years after the exposure to cumulative war-related trauma. It is hypothesized that CPTSD is more prevalent than PTSD in this patient group. The second aim is to undertake an exploratory investigation to examine if there is an association between demographic and psychosocial variables and CPTSD or PTSD.

2. Methods

2.1. Participants and procedures

Participants were male war veterans (N = 160) recruited from a pool of patients who were referred to the outpatient service of the PTSD Referral Centre at Clinical Hospital Centre (CHC) Rijeka from 1 October 2018 until 31 March 2019 (response rate = 94%). The inclusion criteria for the study were as follows: active participation in 1991–1995 Homeland War; previous diagnosis of war-related PTSD, established with the Harvard Trauma Questionnaire (HTQ): Croatian Version (Allden et al., 1997); male gender, aged under 65. The treatment at the Rijeka PTSD Referral Centre includes different treatment techniques (group and individual psychotherapy, pharmacotherapy, and sociotherapy). The selection of these techniques depends on the intensity and the nature of the symptoms, comorbidity, personality structure, psychological impact of the trauma, and other factors. Outpatient treatment is delivered through the intensive program of the day-care hospital, long-term group psychotherapy and low-level treatment groups such as Clubs for PTSD.

The research consisted of two parts, clinical interview and self-report questionnaires. The study was approved by the Ethics Committees of the Faculty of Medicine, University of Rijeka and CHC Rijeka. Written informed consent was obtained from all participants after detailed information about the study was provided to them.

2.2. Measures

2.2.1. The Life Events Checklist for DSM-5 (LEC-5)

The Life Events Checklist for DSM-5 (LEC-5, Weathers et al., 2013) is a self-report measure assessing possible traumatic events that occurred throughout a participant's lifetime. The LEC demonstrates adequate psychometric properties as a stand-alone assessment of traumatic exposure, particularly when evaluating the consistency of events that actually happened to a respondent (Gray, Litz, Hsu, & Lombardo, 2004; Weathers et al., 2013). For the purposes of the study,

the total score of different types of lifetime trauma was calculated as the sum of traumatic events experienced directly ('happened to me' and 'witnessed it') resulting in possible scores ranging from 0 to 17. Additionally, the total score of interpersonal types of trauma was calculated as a sum of personally ('happened to me' and 'witnessed it') experienced trauma on the following traumatic events: physical assault, assault with weapon, sexual assault, other unwanted or uncomfortable sexual experiences, combat or exposure to a war-zone, captivity, serious injury and/or harm and/or death you caused to someone else.

2.2.2. The international trauma questionnaire (ITQ)

The International Trauma Questionnaire (ITQ) is a self-report measure of the ICD-11 diagnoses of PTSD and CPTSD (Cloitre et al., 2018). Respondents rate how much they have been bothered by the individual symptoms. Responses are rated using a 5-point Likert scale, anchored by 'Not at all' (0) to 'Extremely' (4). A probable diagnosis of PTSD requires the endorsement of one of the two symptoms from the symptom clusters of (1) re-experiencing in the here and now, (2) avoidance, and (3) sense of current threat. Endorsement of at least one indicator of functional impairment associated with these symptoms scored ≥2 ('Moderately') is also required. A probable diagnosis of CPTSD requires PTSD criteria are met and one of the two symptoms from each of the three Disturbances in Self-Organization (DSO) clusters: (1) affective dysregulation, (2) negative self-concept and (3) disturbances in relationships. The functional impairment must be identified where at least one indicator of functional impairment is endorsed related to the PTSD symptoms and one indicator of functional impairment is endorsed related to the DSO symptoms. Endorsement of a symptom or functional impairment item is defined as a score ≥2 ('Moderately'). For the purposes of analysing the intensity of symptoms, the average score on each cluster is reported with the possible range from 0 to 4. Initial evidence supports the psychometric properties of the ITQ in different settings (Frewen et al., 2019; Ho et al., 2019). In our sample, the internal reliability measured by Cronbach's alpha was 0.77 for PTSD scale and 0.89 for CPTSD scale. The ITQ was translated into Croatian according to the WHO criteria, which include reverse-translation. All participants completed the ITQ in relation to war trauma because they considered it the experience that troubles them most.

2.2.3. Mini-international neuropsychiatric interview (MINI)

Comorbid psychiatric disorders were diagnosed using the Croatian version of MINI for DSM-5 (Sheehan, 2015; Sheehan et al., 1997) that enables researchers to

assess the 17 most common psychiatric disorders in DSM-5.

2.3. Analysis

Descriptive statistics of tested variables are presented as frequencies/percentages or means and standard deviations for parametric measures. Prevalence rates for PTSD and CPTSD were calculated and thus two groups of participants were created. In order to test for differences between groups for categorical variables Pearson chi-square was used. In cases with cells with count <5 Yates correction was applied. Fischer exact test was reported for cells with count = 0. For testing the between-group differences for continuous variables *t*-test for independent samples was used. For the assessment of correlations between continuous variables Pearson correlation coefficients were calculated. Statistical significance was set as $p < 0.05$. Statistical analysis was performed with Statistica software, version 12 (Dell Inc. Inc., Tulsa, OK, US).

3. Results

3.1. Sociodemographic characteristics

A total of 160 war veterans participated in the study, all male and all Croatian citizens. The mean age of the sample was 52.12 (SD = 6.06, range 42–65). The majority had high school education (76.88%) and were married or cohabitating (71.25%). At the time of the study, 22.15% were employed while the majority was retired (63.29%). One-third of the sample perceived their economic status as low (30.63%) and two-thirds (67.50%) as medium. The average deployment duration was 31.36 months (SD = 19.00, range 2–70), they reported an average of 8.38 (SD = 3.34, range 2–17) lifetime trauma and the average of 2.81 (SD = 1.27, range 1–7) interpersonal lifetime trauma as reported on the Life Events Checklist for DSM-5 (LEC-5). Majority of the sample was involved in the outpatient programmes for PTSD treatment (76.25%) and almost half of them had been previously hospitalized due to PTSD (46.88%). The average self-reported number of psychotropics per participant was 2.69 (SD = 1.24, median = 3, range 0–5) and the average number of other drugs was 1.40 (SD = 1.39, median = 1, range 0–4). On average, they had been in ambulatory treatment for the last 16 years (SD = 7.53, range 0–27).

Out of 160 participants, 129 (80.63%) met criteria for a probable diagnosis of CPTSD while 31 (19.37%) met the criteria of a probable diagnosis of PTSD. Sociodemographic characteristics of two groups are presented in Table 1. All of the participants were male veterans of the Homeland war in Croatia. The average age of CPTSD group was 51.98 (6.13) and the average duration of deployment was 29.77 (18.74)

Table 1. Sociodemographic characteristics based on diagnostic status.

	PTSD N = 31	CPTSD N = 129		
	X(SD)	X(SD)	t	p
	52.74 (5.81)	51.98 (6.13)	0.63	0.53
Age	N (%)	N (%)	χ2	p
Educational level			1.49	0.47
Elementary school	4 (12.90)	20 (15.50)		
High school	26 (83.87)	97 (75.19)		
Higher education	1 (3.22)	12 (9.30)		
Work status			0.22	0.90
Employed	6 (20.69)	29 (22.48)		
Unemployed	5 (17.24)	18 (13.95)		
Retired	18 (62.07)	82 (63.57)		
Marital status			7.95	0.05
Married/cohabitating	21 (67.74)	93 (72.09)		
Single	2 (6.45)	22 (17.05)		
Divorced	6 (19.35)	7 (5.43)		
Other	2 (6.45)	7 (5.43)		
Economic status			4.00	0.14
High	1 (3.23)	2 (1.55)		
Medium	25 (80.64)	83 (64.34)		
Low	5 (16.13)	44 (34.11)		

months. The average age of PTSD group was 52.74 (5.81), with the average deployment duration 37.33 (19.09) months. Participants from both groups were mostly married, had high school education, were of medium economic status and were mostly retired. The only significant association between diagnostic status and sociodemographic characteristics was for marital status (χ2 = 7.95, p < 0.05). Adjusted standardized residuals were the greatest for the divorced status. Veterans with PTSD were significantly more likely to be divorced compared to the CPTSD veterans, 19.35% vs. 5.43%.

3.2. War-related characteristics and posttraumatic symptoms

Data on war deployment, lifetime trauma, interpersonal trauma, time of first referral, as well as scores on clusters of symptoms, are presented in Table 2.

Participants did not significantly differ in the intensity of PTSD clusters of symptoms based on their diagnostic status. However, veterans with CPTSD perceived that the PTSD symptoms had a greater impact on the impairment of functionality compared to the veterans with PTSD and the same is true for the impact of CPTSD symptoms on functionality. As expected, CPTSD group scored significantly higher on affective dysregulation, negative self-concept and disturbances in relationship scales as well as DSO score compared to the PTSD group.

Additional analysis of the LEC-5 showed that the most common types of traumatic experiences apart from 'combat or exposure to a war – zone' were 'fire and explosion' (80.63%) and 'assault with weapon' (73.13%). Less common were 'captivity' (10.63%), 'other unwanted or uncomfortable sexual experiences' (5.00%) and 'sexual assault' (4.38%). There was no

Table 2. War-related characteristics and posttraumatic symptoms based on diagnostic status.

	PTSD N = 31	CPTSD N = 129		
	X(SD)	X(SD)	t	p
Deployment (months)	37.33 (19.09)	29.77 (18.74)	1.96	0.05
Lifetime trauma	8.52 (2.97)	8.23 (3.44)	0.42	0.67
Lifetime interpersonal trauma	2.84 (1.19)	2.78 (1.29)	0.22	0.83
Time of first referral (years)	16.13 (7.26)	15.94 (7.63)	0,13	0.90
Re-experiencing in the here and now	3.13 (0.78)	3.21 (0.71)	0.53	0.60
Avoidance	3.05 (0.66)	3.15 (0.64)	0.77	0.44
Sense of current threat	3.06 (0.78)	3.34 (0.53)	1.87	0.07
PTSD score[a]	3.08 (0.56)	3.23 (0.42)	1.40	0.17
PTSD functional impairment	2.28 (0.85)	2.91 (0.63)	4.65	<0.01
Affective dysregulation	2.35 (0.80)	2.98 (0.61)	4.11	<0.01
Negative self-concept	1.16 (0.84)	2.79 (0.79)	10.11	<0.01
Disturbances in relationships	1.74 (1.01)	2.94 (0.68)	6.25	<0.01
DSO score[b]	1.75(0.65)	2.90 (0.60)	9.47	<0.01
CPTSD functional impairment	1.60 (0.81)	2.81 (0.70)	8.42	<0.01

[a]Sum of Re-experiencing in the here and now, Avoidance and Sense of current threat.
[b]Sum of affective dysregulation, Negative self-concept and Disturbances in relationship.

significant difference in the frequency of specific trauma experienced by PTSD and CPTSD group.

3.3. Psychiatric comorbidity

In the overall sample, the most common psychiatric comorbid disorders were depressive disorder, panic disorder and generalized anxiety disorder (GAD). 25.63% participants had a recurrent major depressive disorder (PTSD = 32.25%, CPTSD = 24.03%) and 5.63% had a past major depressive disorder (PTSD = 12.90%, CPTSD = 3.87%). Panic disorder was present in 23.75% (PTSD = 22.58%, CPTSD = 24.03%) of the sample and GAD in 11.88% (PTSD = 0, CPTSD = 14.73%). None of the participants had bipolar disorder or an eating disorder. The PTSD group was significantly more likely to have had past major depressive disorder compared to the CPTSD group ($\chi2 = 3.84$, $p < 0.05$), while the CPTSD group was significantly more likely to have had GAD compared to the PTSD group ($\chi2 = 5.18$, $p < 0.05$).

3.4. Treatment

Nearly half of the participants from both groups had been hospitalized (PTSD 41.93%; CPTSD 48.06%) and the majority of them have participated in outpatient programs for PTSD treatment (PTSD 74.19%; CPTSD 76.74%). One-third of the PTSD group (30.00%) had been in long-term therapy compared to one-fifth (20.20%) of the CPTSD group. However, groups based on diagnostic status differed significantly only in their participation in PTSD clubs ($\chi2 = 4.13$, $p < 0.05$), as veterans with PTSD (16.13%) were more likely to participate in that type of treatment, as compared to the veterans with CPTSD (5.43%).

The two groups did not differ significantly in the number of medications prescribed or in the types of psychotropic medication. Most participants in both

groups reported the intake of three psychotropic drugs and of one other type of drug. Almost 80% of participants reported the intake of at least one anxiolytic (76.88%) and 53.13% of an antidepressant. Approximately one-third of participants had an anti-epileptic (mood stabilizer) (33.13%), hypnotic (31.25%) and/or antipsychotic (26.25%) prescribed.

Even though the average time of seeking help was similar for both groups (Table 2), additional analysis showed significant correlations between the time of the first referral and affective dysregulation and DSO score. The average time that had passed since their first referral was approximately 16 years for both groups, with some veterans seeking help as early as 1991; with latest help seeking in 2018. The veterans with earlier referral had higher intensity of affective dysregulation symptoms ($r = 0.20$, $p < 0.05$) and overall DSO symptoms ($r = 0.17$, $p < 0.05$).

4. Discussion

Our research revealed high rates (80.63%) of the probable diagnosis of ICD-11 CPTSD among Croatian treatment-seeking war-veterans with PTSD. The result is not surprising as active participation in war is usually accompanied by a prolonged and repeated exposure to interpersonal traumatic stressors that heighten the risk for this disorder. Furthermore, patients with PTSD 24 years after the war are certainly a population with chronic and enduring symptoms and personal suffering, which also increases the risk for development of the DSO symptoms. This result is in concordance with the results from other studies conducted in treatment-seeking samples from different but predominantly Western countries (Cloitre et al., 2018; Hyland, Brewin, & Maercker, 2017b; Hyland et al., 2017a; Karatzias et al., 2016; Nickerson et al., 2016). Although a different measurement for assessment was used (the Structured Interview for Disorder of Extreme

Stress – SIDES-SR), a high prevalence (43%) of CPTSD was found in a similar sample, in a study conducted 10 years before this one (Nemčić-Moro, Frančišković, Britvić, Klarić, & Zečević, 2011). The results of that study contributed to the ongoing argument about the controversial diagnosis of Enduring Personality Change after Catastrophic Event (WHO, 1992) that contained an obligatory criterion of exclusion of PTSD symptoms. The rising clinical experience and research in the field of psychotraumatology resulted in the acknowledgement that most of the patients with DSO symptoms as the consequence of trauma exposure concurrently suffer from PTSD symptoms. The acknowledgement justified the inclusion of the new diagnostic category of CPTSD in ICD-11, which comprises both of the symptom categories.

The findings regarding the differences between PTSD and CPTSD are exploratory in nature and some findings may have been influenced by the low number of participants in the PTSD group. Nevertheless, comparison of the sociodemographic characteristics indicated that the only significant association with probable CPTSD was the one of the marital status. Previous studies have reported that individuals with CPTSD were more likely to be unemployed, unmarried and living alone (Hyland et al., 2017a; Karatzias et al., 2017) and of younger age (Karatzias et al., 2019), as well as to have minority status, lower education and lower self-reported socioeconomic status (Perkonigg et al., 2016). The veterans with self-reported PTSD symptoms were significantly more likely to be divorced as compared to the veterans with CPTSD symptoms, which was quite surprising at first glance. As there was no significant difference between PTSD and CPTSD groups in the numbers of those who were married or living alone, this result could be explained in part by the exhausting DSO symptoms that prevent patients from actively engaging in relationships, even when it is a matter of divorce. Other reasons could be sociocultural factors related to stress disorders. Previous research confirmed a clear relationship between PTSD and the quality of partner relationships (Lambert, Engh, Hasbun, & Holzer, 2012; Taft, Watkins, Stafford, Street, & Monson, 2011), so the appropriate measurement of global relationship satisfaction should be applied for a more detailed insight into the quality of the partner relationship.

Further comparison of the war-related characteristics between PTSD and CPTSD group revealed that the cumulative length of deployment was similar in both groups. The length of deployment per se does not imply a higher risk for CPTSD, particularly without information on the length of continuous deployment and the length of time spent between deployments. The level of traumatization measured by the total score of different types of trauma exposure was also without a significant difference in the

groups. CPTSD is thought to be particularly associated with, although not a necessary consequence of, a sustained exposure to repeated or multiple types of traumatic stressors (Karatzias et al., 2017; Scott et al., 2013). The LEC-5 gives information on the type of traumatic event and the levels of exposure but, unfortunately, information on how many times a person has been exposed to the same stressor cannot be obtained. Some of the participants were exposed dozens or hundreds of times to the same trauma (repeated trauma) and some were exposed to a trauma over a longer period (prolonged trauma) but, regrettably, we could not obtain information about the frequencies of these experiences. Additional analyses of the types of trauma measured by the LEC-5 did not show a difference in exposure between PTSD and CPTSD groups. Although the ICD-11 proposes an association with specific types of stressors as risk factors rather than a requirement for development of CPTSD (Cloitre et al., 2018), considerable research has found childhood trauma to have significant impact on various outcomes in adulthood, particularly CPTSD (e.g. Frewen et al., 2019; Karatzias et al., 2019; Van der Kolk et al., 2019). The LEC-5 takes no explicit account of childhood trauma, which represents one of the major limitations of this measure.

This study did not determine any significant difference in the intensity of the self-reported PTSD symptoms between the PTSD and CPTSD groups, which was an interesting finding. Wolf et al. (2015) reported contrary results indicating that those with high severity PTSD symptoms also had high severity CPTSD symptoms, while those with low severity PTSD symptoms exhibited low severity CPTSD symptoms. They concluded that the groups differed by the symptom severity and voiced their doubts about the distinctions between CPTSD and PTSD as proposed by the ICD-11. The proposal to have PTSD and CPTSD side-by-side as sibling disorders is responsive to clinician preferences. It is consistent with the overall ICD-11 classification plan for mental disorders to be presented in a 'flatter' horizontal rather than a vertical structure. Furthermore, increasing empirical evidence supports the proposed ICD-11 model of separate PTSD and CPTSD (Brewin et al., 2017; Cloitre et al., 2013; Elklit et al., 2014; Hyland et al., 2017a; Karatzias et al., 2017; Knefel et al., 2015; Shevlin et al., 2018).

Although the level of the PTSD symptoms as measured by the ITQ was similar in both groups, the veterans with probable CPTSD perceived that the PTSD symptoms had a greater impact on the severity of functional impairment and the same was true for the impact of DSO symptoms. This finding is consistent with previous studies which indicate that CPTSD is associated with higher levels of functional

impairment related to the disorder (Cloitre et al., 2013; Elklit et al., 2014; Hyland et al., 2018a; Karatzias et al., 2018, 2017; Murphy et al., 2016).

The most prevalent psychiatric comorbid disorders in the overall sample were major depressive disorder, panic disorder and GAD, which is consistent with numerous studies that have demonstrated that PTSD is associated, and comorbid, with many other disorders, particularly anxiety and depression (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Pietrzak, Goldstein, Southwick, & Grant, 2011; Rytwinski, Scur, Feeny, & Youngstrom, 2013; Steel et al., 2009). The prevalence of the current comorbid disorders was similar in the PTSD and the CPTSD group, with the exception of GAD, which was significantly more likely to be present in the CPTSD group. Previous research indicated that depression was more strongly related to the DSO symptoms and CPTSD (Gilbar et al., 2018; Hyland, Shevlin, Fyvie, & Karatzias, 2018b; Nemčić-Moro et al., 2011) while anxiety disorders were more strongly related to PTSD (Hyland et al., 2016). Other studies revealed an essentially equivalent association of anxiety to the PTSD and DSO clusters of symptoms (Gilbar et al., 2018; Karatzias et al., 2016). These confounding results emphasize the need for further work in exploring the relationship between PTSD and CPTSD, as well as other psychiatric disorders particularly depression and anxiety. As previous studies confirmed significantly higher levels of dissociative experiences among CPTSD participants (Hyland et al., 2019; Powers et al., 2019; van Dijke et al., 2015), it would be interesting and possibly insightful to see if there were such symptom-level differences between PTSD and CPTSD groups in this research, but unfortunately, they were not captured in analyses. Dissociation warrants further research to determine a potential link with the presence of adult CPTSD and/or the dissociative subtype of PTSD.

Considering the level of treatment in which participants were engaged during their treatment, the groups differed only in participation in PTSD clubs: the veterans with self-reported PTSD symptoms only were more likely to participate in that type of treatment than the veterans with probable CPTSD. PTSD clubs usually function as a homogenous low-level treatment group relying mainly on the healing effects of group cohesion, mutuality among members and strong attachment among combatants. Lesser engagement of the CPTSD group can be explained by the specific clinical features of CPTSD, particularly AD and DR. The two groups did not differ significantly in the number and types of medications prescribed and in the average time of first referral. This finding suggests that the DSO symptoms were often overlooked and undertreated in clinical setting. Further

analysis revealed that the veterans with earlier referral to the psychiatric treatment had a significantly higher intensity of the AD symptoms and the overall DSO symptoms, suggesting that CPTSD is a more chronic and more severe disorder requiring a longer course of treatment that should include resolving greater numbers and types of symptoms and addressing more severe functional impairment (Cloitre et al., 2011, 2012, 2013).

This study, however, is subject to certain limitations that need to be addressed. The methodology was cross-sectional, which prevents the causal explanation of the correlations with CPTSD and PTSD. The relatively small sample, consisting of a male treatment-seeking population with a history of war-related trauma, limits the generalizability to the wider trauma population. The use of self-report measures, although very common in trauma studies, entails the risk of a reporting bias. It is quite possible that fewer patients would receive a diagnosis of PTSD and CPTSD if a structured instrument was applied. The major limitation of the used measures is that they do not provide information on the traumatic experiences during childhood and on dissociative experiences which showed high correlation with CPTSD in the previous research. Unequal sample sizes in the groups were partially compensated by the homogeneity of the groups considering gender, age, educational level, work and socioeconomic status. However, a small number of participants in PTSD group together with multiple comparisons which were not controlled for could have generated some chance findings. Nevertheless, the study has several strengths. Firstly, this is one of the rare studies conducted on a non-Western sample exposed to war-related trauma that explores the ICD-11 PTSD and CPTSD constructs. Secondly, the study has revealed the presence of long term and enduring CPTSD symptoms in war veterans, years after the war ended. It has also shed some light on the possible correlates to CPTSD, such as greater functional impairment, in comparison with patients with PTSD symptoms only.

Conclusion: This study supports the proposition that prolonged trauma of a severe interpersonal intensity such as war is related to CPTSD symptoms, years after the war ended. The distinction between PTSD and complex PTSD may help the selection of person-centred treatment interventions that would target specific mental health and functional problems in patients.

Disclosure statement

No potential conflict of interest was reported by the authors.

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