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The structure of PTSD symptoms according to DSM-5 and IDC-11 proposal: A multi-sample analysis

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ABSTRACT

Posttraumatic stress disorder (PTSD) symptoms structure is a subject of ongoing debate since its inclusion in DSM-III classification in 1980. Different research on PTSD symptoms structure proved the better fit of four-factor and five-factor models comparing to the one proposed by DSM-IV. With the publication of DSM-5 classification, which introduced significant changes to PTSD diagnosis, the question arises about the adequacy of the proposed criteria to the real structure of disorder symptoms. Recent analyses suggest that seven-factor hybrid model is the best reflection of symptoms structure proposed to date. At the same time, some researchers and ICD-11 classification postulate a simplification of PTSD diagnosis restricting it to only three core criteria and adding additional diagnostic unit of *complex*-PTSD. This research aimed at checking symptoms' structure according to well-known and supported four-, five-, six- and seven-factor models based on DSM-5 symptoms and the conceptualization proposed by the ICD-11 as well as examining the relation between PTSD symptoms categories with borderline personality disorder. Four different trauma populations were examined with self-reported Posttraumatic Diagnostic Scale for DSM-5 (PDS-5) measure. The results suggest that six- and seven-factor hybrid model as well as three-factor ICD-11 concept fits the data better than other models. The core PTSD symptoms were less related to borderline personality disorder than other, broader, symptoms categories only in one sample. Combination of ICD-11 simplified PTSD diagnosis with the more complex approach (e.g. basing on a seven-factor model) may be an attractive proposal for both scientists and practitioners, however does not necessarily lower its comorbidity with borderline personality disorder.

1. Introduction

Posttraumatic stress disorder (PTSD) describes chronic and disabling reaction to extreme stress and may last for years if untreated [1–3]. As valid differential diagnosis seems crucial for adequate treatment planning, it is important to closely examine the empirical support for the diagnostic criteria. The structure of PTSD has been a subject of discussion ever since the first inclusion of PTSD in the DSM (the DSM-III in 1980) due to the strong overlap of PTSD with other anxiety and mood disorders [4]. The continuous debate about PTSD symptoms structure is reflected in the high number of studies and revisions of diagnostic criteria in subsequent editions of the DSM (DSM-III – three clusters: re-experiencing, emotional detachment, increased arousal and avoidance; DSM-IV – three clusters: re-experiencing, avoidance/numbing, hyperarousal; DSM-5 – four clusters: re-experiencing, avoidance, changes in cognitions and mood and increased arousal [5–7]).

Initial studies on the structure of the 17 DSM-IV symptoms suggested four-factor models with three of them being re-experiencing, hyperarousal, and avoidance, and numbing suggested as the fourth factor by King et al. [8] and broad dysphoria by Simms et al. [9]. Elhai et al. [10], on the other hand, proposed a five-factor model comprising re-experiencing, avoidance, numbing, dysphoria and anxiety arousal.

Current conceptualization of PTSD in DSM-5 includes 20 symptoms, with posttraumatic negative cognitions and alterations in mood (D3–4) and reckless, self-destructive behavior (E2) as new ones. These symptoms were clustered in line with King et al.'s [8] model derived from a former version of DSM and 17 symptoms of PTSD [6]. Therefore, a question about the adequacy of the proposed new PTSD symptom clusters arises.

In our previous research within diverse trauma populations we examined the fit of most popular models, finding the strongest empirical support for the "negative cognitions and numbing" model, which bases on the model proposed by Elhai et al. [10], with

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additional factor for cognitive and mood changes [11]. Recently three new models were presented:

- Liu et al.'s [12] proposal of a six-factor anhedonia model including re-experiencing (B1–B5), avoidance (C1–C2), negative affect (D1–D4), anhedonia (D5–D7), dysphoric arousal (E1–E2, E5–E6) and anxious arousal (E3–E4);
- Tsai et al.'s [13] six-factor model consisting of externalising behaviours and re-experiencing (B1–B5), avoidance (C1–C2), numbing (D1–D7), externalising behaviours (E1–E2), anxious arousal (E3–E4) and dysphoric arousal (E5–E6);
- Armour et al.'s [14] proposal of a seven-factor hybrid model that divides the current DSM-5 criteria into re-experiencing (B1–B5), avoidance (C1–C2), negative affect (D1–D4), anhedonia (D5–D7), externalising behavior (E1–E2), anxious arousal (E3–E4) and dysphoric arousal (E5–E6).

The latter model was supported in studies done by Wang et al. [15] and Seligowski and Orcutt [16] which showed a better fit compared to other models [17], whereas Tsai et al.'s [13] model of externalising behaviours showed the weakest fit to the empirical data [17]. In parallel with more complex models, suggestions of simplifying the structure of PTSD symptoms occur [18,19], expressed in proposals for ICD-11 classification limiting symptom categories to the core three – re-experiencing, avoidance and anxious arousal – and to only six symptoms (two per criterion, e.g. B2 & B3, A1 & A2, E3 & E4).

Apart from the internal structure, another well-documented weakness of the PTSD definition is PTSD's comorbidity with major depressive disorder (MDD) [20], generalized anxiety disorder [21] and personality disorders [22], in particular borderline personality disorder (BPD; [23]). Taking all the controversies about PTSD's definition into consideration [24], the ICD-11 proposal divides stress reaction into two different diagnostic units: PTSD and *complex* PTSD (CPTSD). The former consists of 6 basic symptoms grouped into three core categories listed above, less overlapped with other disorders' symptoms [25–27]. The latter also includes affect dysregulation, negative self-concepts and interpersonal problems – criteria similar to negative alterations in cognitions and mood as well as alterations in arousal and reactivity clusters of DSM-5 (see the direct comparison between ICD-11 and DSM-5 clusters correlations shown by Karatzias et al. [28]). These two ICD-11 constructs refer specifically to single traumas and more severe, prolonged trauma experiences, respectively [24,29–31]. Latent profile analysis done by Cloitre et al. [29] and Knefel et al. [32] support such a distinction between two types of stress reaction. The three-factor structure of PTSD symptoms in ICD-11 was confirmed in different trauma populations [33] with some exceptions when a one-factor [34] or two-factor model (re-experiencing/avoidance and hyperarousal) [35,36] showed better fit to the data.

CPTSD criteria overlap with some of the symptoms typical for BPD patients; however, according to Cackowski et al. [37], BPD patients with PTSD still show higher dysregulation of affect, more intrusions and dissociation as well as more suicidal attempts and self-mutilation than those only diagnosed with BPD, justifying the existence of both diagnoses. Cloitre et al. [38] empirically distinguished four classes of individuals according to different patterns of PTSD, CPTSD and BPD severity:

- individuals with a low level of PTSD, CPTSD and BPD symptoms;
- individuals with a high level of PTSD symptoms and low level of CPTSD and BPD symptoms;
- individuals with high levels of both PTSD and CPTSD and low levels of BPD symptoms;
- individuals with high BPD, PTSD and CPTSD symptoms.

High abandonment avoidance, unstable sense of self, impulsiveness and intense patterns of interpersonal relationships were proved to differentiate BPD from CPTSD participants.

In the present study, we aimed to follow the implicit recommendation for empirical support of any revision of the DSM or ICD criteria sets. We examined the PTSD symptoms structure according to the most studied-to-date models based on DSM-5 and ICD-11 taking into consideration BPD associated cognitions. We expected that:

- more complex models of structure of all DSM-5 PTSD symptoms (6 and 7-factors) would show better fit to the empirical data than 4- and 5-factor models;
- the 3-factor ICD-11 model would best reflect PTSD core symptom structure;
- correlation with borderline personality disorder associated cognitions would be higher for broad (similar to CPTSD) than narrow/core PTSD symptoms.

2. Method

2.1. Participants

In total 1491 individuals who had not previously been clinically diagnosed, divided into two samples, participated in the study. Sample A participated in a pilot study for the PDS-5 scale [11], while sample B consisted of volunteers screened for PTSD (psychiatric examination) in a treatment study. Because 159 people did not indicate any traumatic event listed in the PDS-5 and 73 people incompletely answered items assessing PTSD symptoms, an effective sample of 1259 persons remained. The first sample (A) consisted of 150 males and 238 females (n = 388) of age 18–83 (M = 34.33, SD = 13.21) with the most frequent: college (39.6%) and university (56.0%) educational level. Participants reported several traumatic events experienced from one month to several years before the study, and reported the following as the most traumatic event they had experienced: motor vehicle accidents (MVA) (30.7%), life threatening illnesses (29.6%), physical assault (11.1%), child abuse (9.8%), natural disaster (5.4%), sexual assault (4.1%), war experience (2.8%) and others (6.4%). Data obtained from 871 participants established the second sample (B), which consisted of three non-clinical subgroups: (B1) 287 participants from the registry of MVA survivors (161 F & 126 M between the ages of 18–68, M = 38.96, SD = 13.16, most of whom were college (42.5%) or university (40.8%) educated), (B2) 288 firefighters (only males aged 20–52, M = 33.62, SD = 6.86, with most being college (57.6%) or university (41.7%) educated), who witnessed traumatic events related to their service and (B3) 296 flood survivors (170 F & 126 M aged 18–85, M = 44.34, SD = 15.46, with most being college (47.3%) or university (22.3%) educated). Subjects from sample B1 were investigated from 1 month to 2 years after a serious MVA involving causalities (injuries or deaths), and subjects from sample B3 about four years after the flood experience involving loss of life and massive material losses. Finally, firefighters were recruited from brigades that had very frequently assisted in emergency situations such as MVA, fires or floods. All subjects signed informed consent forms and were compensated (about 15 Euros) for their participation. The study was approved by the local IRB.

2.2. Measures

Participants completed the Polish version of the Posttraumatic Diagnostic Scale for DSM-5 (PDS-5) developed by Foa et al. [39] (see Zawadzki et al. [11]). The PDS-5 consists of a list of traumatic events, 20 items assessing symptoms of PTSD according to the