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Examination of the latent structure of DSM-5 posttraumatic stress disorder symptoms in Slovakia

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ABSTRACT

The latent structure of posttraumatic stress disorder (PTSD) has been widely discussed, with the majority of studies in this area being conducted in the US. The current study aimed to extend this area of research by comparing seven existing PTSD factor models in a sample of 754 trauma-exposed university students from Slovakia, where similar research has not been conducted yet. The sample was predominantly female (83.69%), with a mean age of 22.68 years. The comparison of competing models revealed that the Anhedonia model, consisting of six inter-correlated factors of reexperiencing, avoidance, negative affect, anhedonia, dysphoric arousal and anxious arousal, provided the best fit. Several factors of the Anhedonia model also showed differential relationships with the external variables of anxiety and depression. The study contributes to the limited literature on the latent structure of PTSD in Eastern Europe.

1. Introduction

The latent structure of posttraumatic stress disorder (PTSD) has been vigorously debated for over two decades (Armour et al., 2016b). The driving force behind these debates has been the ultimate goal of defining a reliable and valid model of PTSD that would form the basis for accurately diagnosing the disorder. The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association [APA], 2013) defines PTSD by 20 symptoms distributed across four symptom clusters of reexperiencing, avoidance, negative alterations in cognitions and mood (NACM) and alterations in arousal and reactivity (AAR). At least one reexperiencing, one avoidance, two NACM and two AAR symptoms are needed for a PTSD diagnosis. This definition differs from the DSM-IV-TR (APA, 2000) conceptualization of PTSD, in which the disorder was characterized by 17 symptoms distributed across three symptom clusters of re-experiencing, avoidance and hyperarousal.

Prior to the publication of DSM-5, three PTSD models, known as the four-factor Emotional numbing model (King et al., 1998), four-factor Dysphoria model (Simms et al., 2002) and five-factor Dysphoric arousal model (Elhai et al., 2011) dominated the literature on PTSD's latent structure. All three models provided superior fit to the three-factor DSM-IV-TR model of PTSD, with the Dysphoric arousal model being superior to all other models in the majority of studies (Armour et al., 2016). The five factors of the Dysphoric arousal model are reexperiencing, avoidance, numbing, dysphoric arousal and anxious arousal. The Dysphoric arousal model was developed by combining the key features of the four-factor Emotional numbing and Dysphoria models.

The current four-factor DSM-5 model of PTSD (APA, 2013) is most akin to the DSM-IV-TR-based Emotional numbing model. Evidence from recent studies, however, suggests that the four-factor conceptualization may be inadequate, as the more recently proposed six- and seven-factor models, namely Anhedonia (Liu et al., 2014), Externalizing behaviours (Tsai et al., 2015) and the Hybrid model (Armour et al., 2015), seem to provide better fit to the data from trauma survivors. When developing the six-factor Anhedonia model, the authors retained the essential features of the five-factor Dysphoric arousal model (Elhai et al., 2011), which has been adapted for the DSM-5 PTSD symptoms, but they additionally split the numbing cluster into negative affect (symptoms D1 – D4) and anhedonia (symptoms D5 – D7). This decision was based on previous theoretical and empirical work, which showed that anhedonia (i.e., reduced positive affect) and negative affect are two distinct constructs (Cuthbert and Kozak, 2013; Watson et al., 2011). Since the initial proposal of the Anhedonia model, only one study examined the differential relationships of its individual factors; Carragher et al. (2016) found that suicidal ideation was associated with negative affect

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and dysphoric arousal factors and low quality of life was associated with all factors except for the anxious arousal factor. Additionally, a probable diagnosis of one or more internalizing disorders was associated with all factors except for the dysphoric arousal factor, and a probable diagnosis of one or more externalizing disorders was associated with the negative affect factor.

The Externalizing behaviours model was similarly built upon the five-factor Dysphoric arousal model, however, instead of splitting the numbing cluster, it separated out two specific symptoms (E1 and E2) into their own externalizing behaviours cluster. The authors argued that the two symptoms (Irritability or anger and Reckless or self-destructive behaviour) are conceptually different from all other AAR symptoms, because they represent emotion regulation difficulties (Tsai et al., 2015). The assessment of the discriminant validity of the model's factors revealed that the externalizing behaviours factor had significantly stronger relationship with hostility than the other factors (Tsai et al., 2015).

More recently, Armour et al. (2015) proposed the Hybrid model, which combined the key features of the two six-factor models, yielding seven factors of reexperiencing, avoidance, negative affect, anhedonia, externalizing behaviours, dysphoric arousal and anxious arousal. The model has been found to be superior to all the less differentiated models in several studies (Armour et al., 2015; Armour et al., 2016a; Ashbaugh et al., 2016; Cao et al., 2017; Liu et al., 2015; Mordeno et al., 2017a; Mordeno et al., 2017b; Mordeno et al., 2016; Seligowski and Orcutt, 2016; Wortmann et al., 2016) and its factors showed differential relationships with a number of external variables. For example, anger, impulsivity and aggressive behaviours showed the strongest relationships with the externalizing behaviours factor (Armour et al., 2016a; Liu et al., 2015). Major depressive disorder had a stronger relationship with dysphoric arousal than anxious arousal and panic disorder was more strongly related to negative affect than anhedonia (Liu et al., 2015). The external variable of negative affect was most strongly related to externalizing behaviours whereas positive affect was most strongly related to anhedonia (Seligowski and Orcutt, 2016). Self-blame was only related to negative affect, negative cognitions about the world were related to several factors with the strongest relationship found for anxious arousal, and negative cognitions about the self had the strongest relationship with anhedonia (Mordeno et al., 2017a).

Despite the large number of studies conducted in this area, with the majority pointing to the superiority of the Hybrid model, the consensus regarding the true latent structure of PTSD is yet to be reached. Moreover, a systematic review of 112 studies of PTSD's latent structure conducted by Armour et al. (2016b) showed that the majority of these studies were conducted in the US. This trend has largely continued, although studies have also been conducted in other geographic regions. In general, however, studies from European countries, especially from Eastern Europe, are lacking. One reason for this imbalance could be the fact that the DSM is being used primarily in the US, whereas the Europe relies more heavily on the International Classification of Diseases (ICD), currently in its tenth edition (World Health Organization, 1992). Nevertheless, examining the applicability of the DSM criteria to the European populations is important, because the US has a vibrant immigrant culture. In 2014, European immigrants to the US totalled 4.8 million, with 2.1 million of these originating in Eastern Europe. The number of Eastern European immigrants to the US continued to rise between 1990 and 2010, whereas the number of immigrants from other European countries declined (Zong and Batalova, 2015).

In order to provide a valid assessment, and by extension a valid diagnosis, of PTSD it is important to determine whether a specific measurement model is appropriate for use in a variety of populations. As mentioned above, the DSM system is being used primarily in the US, but the individuals seeking help for mental health issues in the US may come from diverse cultures. It is possible that different models of PTSD work best in different populations. Research comparing different PTSD models in populations from Eastern Europe is limited. Two DSM-5 studies of PTSD's latent structure have been conducted in Poland (Cyniak-Cieciura et al., 2017; Zawadzki et al., 2015) and one in Armenia (Demirchyan et al., 2015). Cyniak-Cieciura et al., (2017) concluded that in their two samples of trauma-exposed Polish adults, the Anhedonia and Hybrid models provided the best fit. Zawadzki et al. (2015) did not test the more recently proposed models in their sample of Polish adults, however, they found that a six-factor model, which differed from the Anhedonia model in the placement of a single symptom, provided the best fit. Demirchyan et al. (2015) similarly did not assess the fit of the more recent models, but in their sample of Armenian earthquake survivors, a five-factor model consisting of re-experiencing, avoidance, numbing, negative state and hyperarousal factors provided the best fit. Although limited in number, these studies suggest that the more differentiated models, which have provided superior fit in the US studies, also fit the data from Eastern European populations.

Slovakia is a small country in Eastern Europe, which up until 1989 was under the communist rule. Mental health research in Slovakia has been limited, but there are reasons to believe that subtle cultural differences, perhaps ones linked to the Slovakian communist past, could affect the expression of mental illness (Behanova et al., 2013). Large-scale comparative studies are, however, needed to support this suggestion. In the meantime, data available from the World Health Organization suggest that at least in some respects, Slovakia is different from other Western countries. For example, alcohol consumption per capita, as well as alcohol-related mortality and morbidity, are much higher in Slovakia, compared to the US (World Health Organization, 2014a; 2014b). Considering the well-supported high co-morbidity between PTSD and alcohol use disorder (Debell et al., 2014), it is possible that the higher prevalence of alcohol consumption in Slovakia and the associated alcohol-related outcomes will have some effect on PTSD, possibly even its latent structure. Indeed, it has previously been shown that consequences of alcohol consumption are more strongly associated with some PTSD symptom clusters than others (Erwin et al., 2017). Considering the fact that more and more researchers in Slovakia are beginning to use the DSM, the investigation of the latent structure of PTSD in this country is important and it could contribute to the literature on the cross-cultural validity of the DSM-5 diagnostic criteria for PTSD.

The current study therefore aimed to examine the latent structure of PTSD in a sample from Slovakia, by comparing seven existing models of PTSD (see Table 1) using confirmatory factor analysis (CFA). Additionally, we aimed to examine the differential relationships of the factors of the best-fitting model with anxiety and depression, which are highly comorbid with PTSD (Brady et al., 2000). The focus was on examining the differential relationships of those symptom clusters that are different in the best-fitting model relative to the DSM-IV-TR and DSM-5 PTSD models (APA, 2000;2013) in order to ascertain whether the shift from the DSM-IV-TR to DSM-5 and to any future revisions of the diagnostic criteria for PTSD, in terms of its latent structure, could be justified. Based on the existing literature, we hypothesized that the seven-factor Hybrid model will provide the best fit to the data. If a more differentiated model (e.g., Hybrid or Anhedonia) provides the best fit, we also hypothesized that the relationship of the NACM symptoms with depression will be stronger than the relationship of the avoidance factor with depression. This prediction was based on previous findings from CFA studies (Armour et al., 2016b) and the literature suggesting that avoidance and numbing are distinct symptom clusters (Asmundson et al., 2004). We also hypothesized that anhedonia will be more strongly related to depression than to anxiety, but negative affect will be equally strongly related to both constructs. This prediction was based on existing research suggesting that anhedonia is essentially reduced positive affect (Crawford and Henry, 2004; Liu et al., 2014), which has been suggested to be distinct from, and not simply an opposite of, negative affect. In the context of the Tripartite theory of anxiety and depression (Clark and Watson, 1991), anxiety and depression