Psychiatry Research 278 (2019) 65–69

Contents lists available at ScienceDirect

Psychiatry Research

journal homepage: www.elsevier.com/locate/psychres

The factor structure of complex PTSD in combat-exposed Filipino soldiers

Imelu G. Mordeno[a,*], Ma. Jenina N. Nalipay[b], Emelyn R. Mordeno[c]

[a] Department of Professional Education, Mindanao State University – Iligan Institute of Technology, Philippines
[b] The Education University of Hong Kong, Hong Kong SAR, China
[c] Department of Psychology, Mindanao State University – Iligan Institute of Technology, Philippines

ARTICLE INFO

Keywords:
ICD-11
Complex PTSD
Factor structure

ABSTRACT

The World Health Organization recently released the 11th revision of the International Classification of Diseases with the inclusion of Complex Posttraumatic Stress Disorder (CPTSD). Despite the emerging research examining the symptom structure of CPTSD, to date, none so far have reached consensus on what best represents CPTSD, particularly in soldiers who are exposed regularly in combat situations. This study examined seven latent CPTSD models in a sample of Filipino combat-exposed soldiers (n = 450). Results of confirmatory factor analyses indicated that the correlated 6 factor first-order model (model 2), comprising of re-experiencing, avoidance, persistent sense of current threat, affective dysregulation, negative self-concept, and disturbances in relationships, has the best fit. These findings have implications for understanding CPTSD as a diagnostic entity and provide information on the assessment and crafting of complex trauma interventions, particularly among Filipino combat-exposed soldiers.

1. Introduction

1.1. ICD-11 posttraumatic stress disorder (PTSD) and complex PTSD (CPTSD)

The World Health Organization recently released the 11th revision of the International Classification of Diseases (ICD-11; World Health Organization, 2018) with the inclusion of Complex Posttraumatic Stress Disorder (CPTSD). ICD-11 construed CPTSD as a disorder comprising of posttraumatic stress disorder (PTSD) and disturbance of self-organization (DSO) domains. In order to have a CPTSD diagnosis, PTSD subdomains (intrusion, avoidance, and threat) and DSO subdomains (affective dysregulation, negative self-concept, and interpersonal relationship difficulties) need to be satisfied. A PTSD diagnosis must first be warranted before a CPTSD diagnosis, and symptoms of PTSD must first be considered before the DSO symptoms. CPTSD symptoms are typically associated with sustained, repeated, and multiple forms of traumatic exposures (Karatzias et al., 2016). However, unlike PTSD, CPTSD deduces the type of traumatic stressor as a risk factor.

CPTSD has been described as an extensive reaction elicited from severe and sustained distressing or traumatic experiences that lead to a more general, broader, and pervasive dysfunction of one's self, characterized by problems in emotion regulation, self-concept, and interpersonal relations (Hyland et al., 2017b; Maercker et al., 2013). Increasing number of studies have shown the validity of CPTSD as a diagnostic entity (Brewin et al., 2017; Keeley et al., 2016; Landy et al., 2015), with most studies using either latent profile analysis (LPA) or latent class analysis (LCA) (e.g., Karatzias et al., 2017; Kazlauskas et al., 2018; Palic et al., 2016; Tay et al., 2018). However, there are only limited research examining CPTSD's latent factor structure, mostly involving Western samples, and very few focusing on Asian sample (Gilbar et al., 2018; Hyland et al., 2017a; Nickerson et al., 2016; Shevlin et al., 2018; Silove et al., 2017). It is important to address this literature gap since it concerns the generalizability and applicability of CPTSD nomenclature across different cultures and populations of interest (Kazlauskas et al., 2018; Murphy et al., 2016; Tay et al., 2018, 2015). Considering that ICD classification intends to make its diagnosis applicable across different cultures and nations (Kazlauskas et al., 2018), and that ICD is globally more extensively used than the Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association, 2013; Reed et al., 2011), it is imperative to conduct more studies examining the validity and cultural relevance of ICD-11 CPTSD.

Additionally, it is interesting to note that the validity of CPTSD models is yet to be examined among soldiers exposed to regular combat situations. Although numerous studies have examined PTSD factor structure among soldier-combatants and veterans (e.g., Barnett et al., 2018; Ben Barnes et al., 2018; Contractor et al., 2018), CPTSD studies in

* Corresponding author.
E-mail addresses: imelu.mordeno@g.msuiit.edu.ph (I.G. Mordeno), jmjnalipay@eduhk.hk (M. .N. Nalipay).

https://doi.org/10.1016/j.psychres.2019.05.035
Received 20 December 2018; Received in revised form 18 May 2019; Accepted 19 May 2019
Available online 20 May 2019
0165-1781/

this type of population are rare. This is unfortunate, considering that soldiers assigned in conflict areas are exposed to repetitive, sustained, and prolonged armed confrontations – a requisite risk factor of CPTSD.

1.2. CPTSD factor structure models

The scope of CPTSD literature examining the latent factor structure models varies according to how symptoms were classified and grouped. Utilizing the International Trauma Questionnaire (ITQ; Cloitre et al., 2015, an unpublished scale cited in Hyland et al., 2017a; Karatzias et al., 2016; Murphy et al., 2016), a measure developed to assess CPTSD, this study examined seven factor structure models using confirmatory factor analysis (CFA). Model 1 is a one-factor model where all the item-symptoms of ITQ were loaded to a single, unitary construct interpreted as general CPTSD. Although considered to be the most parsimonious model, it did not receive any evidence supporting its validity (Gilbar et al., 2018; Hyland et al., 2017a; Karatzias et al., 2016). The second model, the correlated six-factor model, suggests that each factor forms a coherent symptom pattern and is independent yet related to each other (Tay et al., 2018). This model found support from a number of studies as the best-fitting model (Tay et al., 2018, 2015) and with excellent fit indices (Gilbar et al., 2018; Hyland et al., 2017a; Karatzias et al., 2016).

Model 3, the single-factor second order with six first-order factors, affirms the long-held view that survivors of multiple trauma experiences manifest a more general traumatic stress characterized by ICD-11 PTSD and CPTSD symptom-clusters (Silove et al., 2017). This model specifically addresses the concern that other models failed to establish a unitary construct of CPTSD – one of the vital pre-requisite for a constellation of symptoms to warrant recognition as diagnostic entity (Tay et al., 2015). Silove et al. (2017) contend that this model is consistent with the long-held view that survivors of multiple traumas have a tendency to manifest a more general traumatic stress response comprising of the characteristics defined in ICD-11 as PTSD and CPTSD. Model 3 was also found to be the best-fitting model (Silove et al., 2017), and possessed adequate to excellent fit indices (Gilbar et al., 2018; Hyland et al., 2017a; Karatzias et al., 2016).

Model 4, the two-factor second-order model, theoretically follows the notion of ICD-11 CPTSD where the first-order factors (re-experience, avoidance, threat) belong to a second-order factor, PTSD; while another three first-order factors (affect dysregulation, negative self-concept, disturbances in relationship) are indicators of another second-order factor, DSO. Both PTSD and DSO are linked with each other on the basis of ICD-11's contention that PTSD diagnosis must be satisfied first prior to identifying DSO symptoms and considering CPTSD diagnosis. Growing empirical evidence supports the validity of this model across different samples and is noted to be the best-fitting model (Gilbar et al., 2018; Hyland et al., 2017a, 2017b; Karatzias et al., 2016; Kazlauskas et al., 2018; Nickerson et al., 2016; Shevlin et al., 2017).

Models 5 and 6 were examined in a number of studies (Gilbar et al., 2018; Hyland et al., 2017a; Karatzias et al., 2016; Shevlin et al., 2017). Model 5 proposed the presence of a hierarchical structure with the DSO as a second higher-order factor with affective dysregulation, negative self-concept, and disturbances in relationships as first-order factors, while there is absence of a hierarchical structure for the PTSD item-symptoms. On the other hand, model 6 treats DSO without a hierarchical structure, while PTSD is considered as a higher-order factor with re-experiencing, avoidance, and threat as first-order factors. Although both models were not the best-fitting models, studies have shown adequate fit indices for models 5 (Gilbar et al., 2018; Hyland et al., 2017a; Karatzias et al., 2016) and 6 (Karatzias et al., 2016). The last model that was examined, model 7, proposed that all the PTSD and DSO item-symptoms are loaded in two correlated first-order factors. Unfortunately, studies have found this model to be the least fitting model (Gilbar et al., 2018; Hyland et al., 2017a; Karatzias et al., 2016) A consensus is yet to be reached in which model best represents CPTSD symptoms, particularly among chronically trauma-exposed soldiers in an Asian setting. Studies examining the latent structure of CPTSD models across different types of population and cultures are necessary to enrich theoretical understanding of CPTSD as a universal mental health condition.

2. Method

2.1. Procedures

All the scales utilized in the study underwent forward and backward translation. The English version of the scales was translated to Filipino by a language expert and a team of Filipino-speaking graduate students. The back translation to English was conducted by another language expert. The packet of scales was finalized by a team of two psychologists, a language expert, and three graduate students. Upon completion of the translation process, the authors secured all the necessary permission and the test schedules were coordinated based on the availability and convenience of the participants. Before the test administration, the nature of the study and rights of the participants were explained, and informed consent was sought. During the administration of the packet of scales, the facilitators were present in case the respondents have questions. This study was approved by an ethics review committee from the College of Education, Mindanao State University – Iligan Institute of Technology.

2.2. Participants

The participants of the study were composed of 450 soldiers in the Armed Forces of the Philippines with at least 2 armed encounters against the rebel forces in different areas in Northern Mindanao region and Zamboanga Peninsula, Philippines. Their mean age is 30.11 (SD = 7.47) years old and with an average of 7.88 (SD = 6.34) years in service. Most of them were males (n = 440, 98.9%), single (n = 214, 47.7%), have an educational attainment of college level (n = 190, 42.2%), and with a rank of private first class (n = 139, 30.9%).

2.3. Measures

The International Trauma Questionnaire (ITQ; Cloitre et al., 2015, an unpublished scale cited in Hyland et al., 2017a; Karatzias et al., 2016; and Murphy et al., 2016) was used to measure PTSD through its subscales: re-experiencing in the here and now (Re), deliberate avoidance (Av), and a sense of current threat (Th); DSO through affective dysregulation (DA), negative self-concept (NSC), and disturbed relationships (DR); and CPTSD through all its subscales. The items are rated on a five-point Likert scale (0 = *not at all* to 4 = *extremely*). The PTSD, DSO, and CPTSD scales in the present study have an internal consistency of Cronbach's alpha = .87, .96, and .96, respectively.

2.4. Data analysis

Since there were no missing data, none of the respondents were excluded from the analysis. In order to examine the factor structure of CPTSD among the participant Filipino soldiers, series of confirmatory factor analyses were conducted. The seven models of CPTSD described in previous studies of ITQ (Gilbar et al., 2018; Hyland et al., 2017a; Karatzias et al., 2016; see Fig. 1) were tested. Based on the suggestion to treat a scale with five or fewer options as ordinal data (Wirth and Edwards, 2007), this study utilized weighted least square with mean and variance adjusted (WLSMV) estimation method. Model fit was assessed using the following indices: chi-square (χ^2), comparative fit index (CFI), Tucker-Lewis index (TLI), and root mean square error of approximation (RMSEA). CFI and TLI values higher than .90 and RMSEA values lower than .08 indicate good fit, while CFI and TLI values higher than .95 and RMSEA values lower than .06 indicate

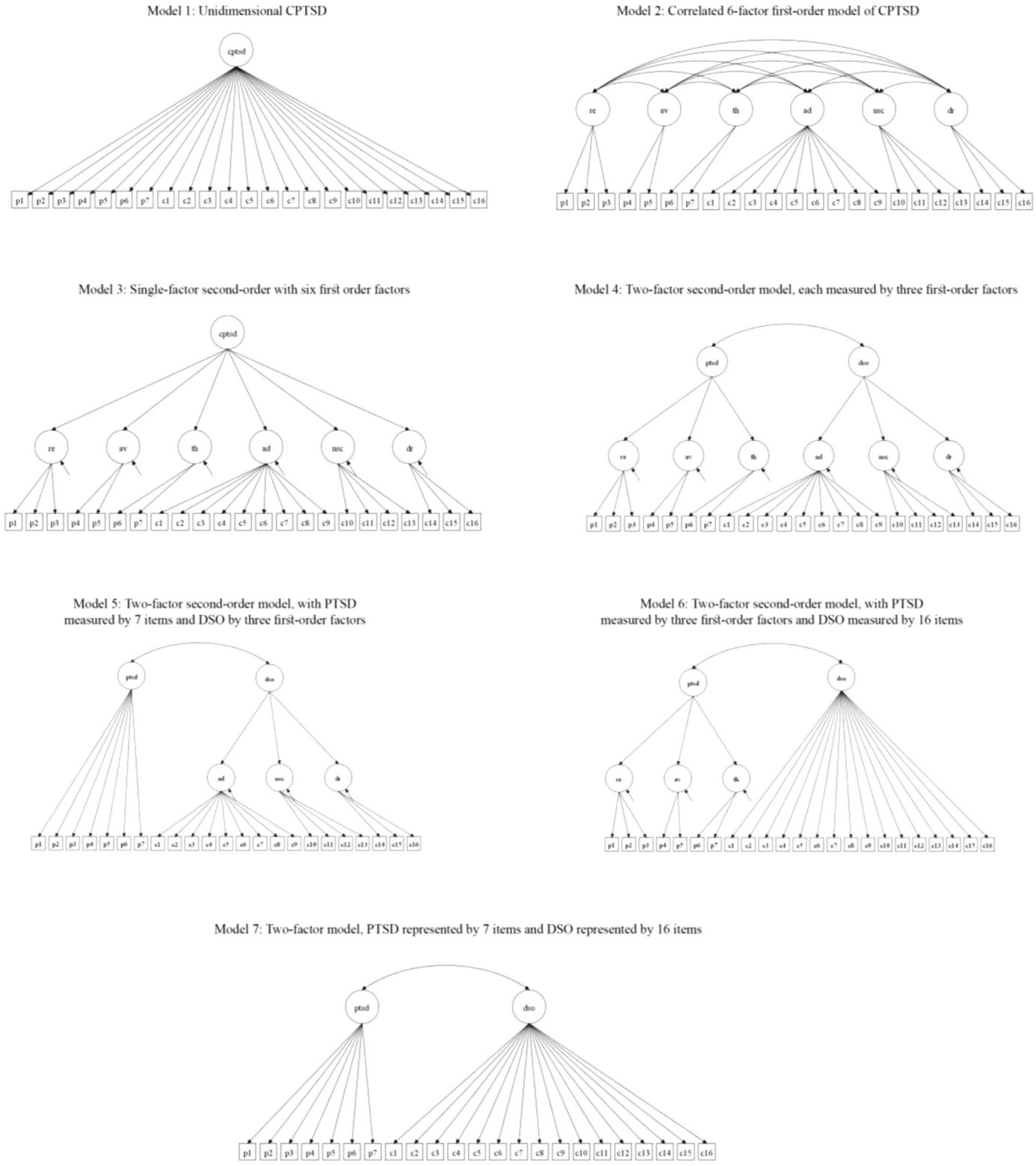

Fig. 1. Seven alternative factor models of complex PTSD.

excellent fit. To determine the best-fitting model, chi-square difference tests were conducted. All statistical analyses were performed using Mplus 7.11 (Muthén and Muthén, 2013).

3. Results

3.1. Descriptive statistics

The mean of PTSD was 8.26 (SD = 5.07), while CPTSD has a mean of 17.98 (SD = 13.03). A score of ≥2 (moderate) for at least one of the symptoms of Re, Av, and Th is indicative of PTSD. When the criteria for

Table 1
Results of confirmatory factor analysis.

Model	χ^2	*df*	CFI	TLI	RMSEA	RMSEA 90%CI
1	1584.674	230	0.948	0.943	0.114	0.109–0.120
2	**701.371**	**215**	**0.981**	**0.978**	**0.071**	**0.065–0.077**
3	1044.804	224	0.969	0.964	0.090	0.085–0.096
4	807.891	223	0.978	0.975	0.076	0.071–0.082
5	886.218	226	0.975	0.972	0.081	0.075–0.086
6	959.767	226	0.972	0.969	0.085	0.079–0.091
7	1033.037	229	0.969	0.966	0.088	0.083–0.094

Note: χ^2 = chi-square goodness of fit statistic, *df* = degrees of freedom, CFI = comparative fit index, TLI = Tucker-Lewis index, RMSEA (90% CI) = root mean square error of approximation with 90% confidence intervals; all χ^2 values are significant at $\alpha < .01$; best-fitting model based on chi-square difference test is in boldface.

PTSD are met and each of the symptom clusters of DSO is endorsed at a moderate level (or has a summed score equals to a score of ≥2 for each item in the cluster), a provisional diagnosis of CPTSD can be given (Hyland et al., 2017a). Among the participants, 36.7% (n = 165) warranted a provisional diagnosis of PTSD and 16.4% (n = 74), can be given a provisional diagnosis of CPTSD.

3.2. Model fit

Based on various fit indices, Table 1 shows that other than model 1, which obtained good fit, all models achieved adequate (i.e., RMSEA) to excellent fit indices (i.e., CFI, TLI). Further scrutiny on the comparison of tested models (Table 2) showed model 2 (correlated six-factor model) to be the best-fitting model. The standardized factor loadings of the items in the six factors (Table 3), which range from .426 to .921, imply that the items loaded well on their respective factors.

4. Discussion

4.1. Factor structure of CPTSD

The findings of the study showed that the correlated six-factor model (model 2) comprising of Re, Av, Th, AD, NSC, and DR, is the best-fitting model in comparison to the other six models. This is consistent with the extant literature (Tay et al., 2018, 2015). This model contends that each factor forms a coherent reaction pattern in its own right, and therefore should be treated independently (Tay et al., 2018, 2015).

The superiority of model 2 over model 4 suggests that CPTSD is better represented as comprising of six independent yet related factors rather than being merged into two higher-order factors (i.e., PTSD and DSO) as proposed in ICD-11. This finding implies that model 2 does not adhere to the contention that CPTSD is a "sibling" disorder of PTSD. Hyland et al. (2017a) explained that being a "sibling" connotes that CPTSD is represented hierarchically by two higher-order factors (model 4), PTSD and DSO, under which are the respective first order factors (Re, Av, and Ar for PTSD; and AD, NSC, and DR for DSO). The notion that each factor has its own idiosyncratic nature indicates that the severity of the six symptom cluster, while they may affect each other, are not contingent on each other. This expands the findings of previous studies showing a pattern where individuals who are likely to experience CPTSD were consistently found to have higher PTSD, with either high or low DSO symptom severity (Karatzias et al., 2017; Kazlauskas et al., 2018; Murphy et al., 2016). The results of the study showing the orthogonality of the six factors suggest that it is also possible for those with CPTSD to incur lower severity in certain PTSD symptom clusters while having elevated levels on DSO symptom clusters, and thus, it may not be necessary for PTSD to be a prerequisite for CPTSD diagnosis.

Although seemingly contradictory to the assertion of most studies supporting ICD-11's diagnostic linearity of requiring PTSD diagnosis prior to CPTSD diagnosis, the present findings affirm the viewpoint that CPTSD is not dependent on PTSD as it is a different disorder both in its pathogenesis and phenomenology (Cloitre et al., 2009; Tay et al., 2018). Indeed, Jonkman et al. (2013) observed that when traumatization becomes more complex, abused children are less likely to experience severe PTSD symptoms as disturbance of self-organization becomes more pervasive. Thus, depending on the nature of the traumatic events, the presence or absence of available resources, and the way individuals cope with these distressing events, differentiated effects on

Table 2
Chi-square difference test for comparing nested models.

Models	$\Delta\chi^2$ (df)	*p*
Model 1 vs. Model 2	560.062 (15)	0.0000
Model 1 vs. Model 3	435.612 (6)	0.0000
Model 1 vs. Model 4	463.019 (7)	0.0000
Model 1 vs. Model 5	333.741 (4)	0.0000
Model 1 vs. Model 6	341.557 (4)	0.0000
Model 1 vs. Model 7	160.790 (1)	0.0000
Model 3 vs. Model 2	224.023 (9)	0.0000
Model 3 vs. Model 4	80.758 (1)	0.0000
Model 4 vs. Model 2	98.701 (8)	0.0000
Model 5 vs. Model 2	164.906 (11)	0.0000
Model 5 vs. Model 4	93.164 (3)	0.0000
Model 6 vs. Model 2	197.240 (11)	0.0000
Model 6 vs. Model 4	111.446 (3)	0.0000
Model 7 vs. Model 2	263.036 (14)	0.0000
Model 7 vs. Model 3	10.580 (5)	0.0604
Model 7 vs. Model 4	198.542 (6)	0.0000
Model 7 vs. Model 5	111.612 (3)	0.0000
Model 7 vs. Model 6	93.234 (3)	0.0000

N = 450.

Table 3
Standardized factor loadings of the Correlated 6-Factor First-Order Model of CPTSD.

PTSD symptoms	Re	Av	Th	AD	NSC	DR
P1. Upsetting dreams	0.894					
P2. Reliving the event in the here and now	0.903					
P3. Feeling upset when reminded of the event	0.651					
P4. Internal avoidance		0.900				
P5. External avoidance		0.876				
P6. Being on guard			0.426			
P7. Jumpy/Startled			0.848			
C1. Intense reactions				0.664		
C2. Long time to calm down				0.824		
C3. Feelings easily hurt				0.795		
C4. Uncontrollable anger				0.824		
C5. Reckless behavior				0.829		
C6. Numb				0.852		
C7. Difficulty feeling pleasure				0.812		
C8. World is distant				0.894		
C9. Feeling outside of body				0.879		
C10. Failure					0.891	
C11. Worthless					0.906	
C12. Self-shame					0.871	
C13. Guilt					0.855	
C14. Cut-off from others						0.920
C15. Difficulty to stay close to others						0.921
C16. Avoiding relationships						0.827
Re						
Av	0.739					
Th	0.604	0.592				
AD	0.722	0.714	0.588			
NSC	0.658	0.674	0.530	0.829		
DR	0.611	0.641	0.530	0.796	0.855	

Note: Re = re-experiencing, Av = avoidance, Th = persistent sense of current threat, AD = affective dysregulation, NSC = negative self-concept, DR = disturbances in relationships; all correlations are significant at α = .01.

the severity of the six symptom clusters are expected to vary. This study contends that although PTSD symptoms are embedded in CPTSD, its presentation, when combined with other non-PTSD symptoms creates a complex interaction of symptoms that ultimately produces a distinct, self-emerging disorder known as CPTSD.

4.2. Limitations and strengths

Amidst the study's potential contribution to the literature, some limitations need to be noted. First, the use of self-report measure makes it prone to certain biases such as social desirability. However, there are currently no available clinician-administered measures of CPTSD that specifically capture the symptoms based on ICD-11, and as well-studied as the ITQ. It is suggested that such measure be developed and utilized in future studies. Second, since the study focused on a very specific sample of Filipino soldiers regularly exposed to combat situations, the results might not necessarily apply to other samples with a different nature of trauma experiences. Third, although an inclusion criteria was set that the respondent should have experienced at least 2 armed encounters, we did not account the specific experiences of the soldiers in the context of these armed encounters. Future studies should include specific combat experiences to assess if these may affect the CPTSD symptom structure. Finally, the cross-sectional design has its inherent limitations, particularly in examining the stability of CPTSD's latent factor structure. Future studies may utilize longitudinal approaches so as to examine the consistency of the latent dimensions over time.

Notwithstanding these limitations, the findings of the study could potentially contribute to trauma literature. First, this study, to our knowledge, is the first to examine the latent factor structure models of CPTSD in an Asian population, particularly among Filipinos. This is important in the context that most of the studies validating ICD-CPTSD are coming from Anglophone countries (Tay et al., 2015, 2018), and therefore, needs to be further tested in other cultural contexts (Hyland et al., 2017b, 2017a). Second, validating the structure of CPTSD among soldiers provides theoretical and pragmatic contributions to the field of trauma studies as most assessments and interventions focusing on soldiers are based on PTSD. Third, this study provides evidence of the construct and criterion validity of the ITQ in an Asian sample, and therefore suggests that ITQ can be administered to examine CPTSD in this population. Finally, this study offers a perspective of construing CPTSD with six correlated factors instead of the two second-order factors. Discourse on what made the findings of this study different from previous studies could be a subject for future investigations.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

References

American Psychiatric Association, 2013. Diagnostic and Statistical Manual of Mental Disorders, fifth ed. American Psychiatric Association, Washington, DC.

Barnett, S.D., Hickling, E.J., Sheppard, S., 2018. The impact of gender on the factor structure of PTSD symptoms among active duty United States military personnel. Eur. J. Trauma Dissociation 2, 117–124. https://doi.org/10.1016/j.ejtd.2018.01.002.

Ben Barnes, J.B., Hayes, A.M., Contractor, A.A., Nash, W.P., Litz, B.T., 2018. The structure of co-occurring PTSD and depression symptoms in a cohort of Marines pre-and post-deployment. Psychiatry Res. 259, 442–449. https://doi.org/10.1016/j.psychres.2017.10.045.

Brewin, C.R., Cloitre, M., Hyland, P., Shevlin, M., Maercker, A., Bryant, R.A., Humayun, A., Jones, L.M., Kagee, A., Rousseau, C., Somasundaram, D., Suzuki, Y., Wessely, S., van Ommeren, M., Reed, G.M., 2017. A review of current evidence regarding the ICD-11 proposals for diagnosing PTSD and complex PTSD. Clin. Psychol. Rev. 58, 1–15. https://doi.org/10.1016/j.cpr.2017.09.001.

Cloitre, M., Roberts, N.P., Bisson, J.I., Brewin, C.R., 2015. The International Trauma Questionnaire (ITQ). Unpublished measure.

Cloitre, M., Stolbach, B.C., Herman, J.L., Kolk, B.V.D., Pynoos, R., Wang, J., Petkova, E., 2009. A developmental approach to complex PTSD: childhood and adult cumulative trauma as predictors of symptom complexity. J. Trauma. Stress 22, 399–408. https://doi.org/10.1002/jts.20444.

Contractor, A.A., Brown, L.A., Caldas, S.V., Banducci, A.N., Taylor, D., Armour, C., Shea, M.T., 2018. Posttraumatic stress disorder and positive memories: clinical considerations. J. Anxiety Disord. 58, 23–32. https://doi.org/10.1016/j.janxdis.2018.06.007.

Gilbar, O., Hyland, P., Cloitre, M., Dekel, R., 2018. ICD-11 complex PTSD among Israeli male perpetrators of intimate partner violence: construct validity and risk factors. J. Anxiety Disord. 54, 49–56. https://doi.org/10.1016/j.janxdis.2018.01.004.

Hyland, P., Shevlin, M., Brewin, C.R., Cloitre, M., Downes, A.J., Jumbe, S., Karatzias, T., Bisson, J.I., Roberts, N.P., 2017a. Validation of post-traumatic stress disorder (PTSD) and complex PTSD using the International Trauma Questionnaire. Acta Psychiatr. Scand. 136, 313–322. https://doi.org/10.1111/acps.12771.

Hyland, P., Shevlin, M., Elklit, A., Murphy, J., Vallières, F., Garvert, D.W., Cloitre, M., 2017b. An assessment of the construct validity of the ICD-11 proposal for complex posttraumatic stress disorder. Psychol. Trauma Theory Res. Pract. Policy 9, 1–9. http://dx.doi.org/10.1037/tra0000114.

Jonkman, C.S., Verlinden, E., Bolle, E.A., Boer, F., Lindauer, R.J., 2013. Traumatic stress symptomatology after child maltreatment and single traumatic events: different profiles. J. Trauma. Stress 26, 225–232. https://doi.org/10.1002/jts.21792.

Karatzias, T., Shevlin, M., Fyvie, C., Hyland, P., Efthymiadou, E., Wilson, D., Roberts, N., Bisson, J.I., Brewin, C.R., Cloitre, M., 2016. An initial psychometric assessment of an ICD-11 based measure of PTSD and complex PTSD (ICD-TQ): evidence of construct validity. J. Anxiety Disord. 44, 73–79. https://doi.org/10.1016/j.janxdis.2016.10.009.

Karatzias, T., Shevlin, M., Fyvie, C., Hyland, P., Efthymiadou, E., Wilson, D., Roberts, N., Bisson, J.I., Brewin, C.R., Cloitre, M., 2017. Evidence of distinct profiles of post-traumatic stress disorder (PTSD) and complex posttraumatic stress disorder (CPTSD) based on the new ICD-11 Trauma Questionnaire (ICD-TQ). J. Affect. Disord. 207, 181–187. https://doi.org/10.1016/j.jad.2016.09.032.

Kazlauskas, E., Gegieckaite, G., Hyland, P., Zelviene, P., Cloitre, M., 2018. The structure of ICD-11 PTSD and complex PTSD in Lithuanian mental health services. Eur. J. Psychotraumatol. 9. https://doi.org/10.1080/20008198.2017.1414559.

Keeley, J.W., Reed, G.M., Roberts, M.C., Evans, S.C., Robles, R., Matsumoto, C., Brewin, C.R., Cloitre, M., Perkonigg, A., Rousseau, C., Gureje, O., Lovell, A.M., Sharan, P., Maercker, A., 2016. Disorders specifically associated with stress: a case-controlled field study for ICD-11 mental and behavioural disorders. Int. J. Clin. Health Psychol. 16, 109–127. https://doi.org/10.1016/j.ijchp.2015.09.002.

Landy, M.S., Wagner, A.C., Brown-Bowers, A., Monson, C.M., 2015. Examining the evidence for complex posttraumatic stress disorder as a clinical diagnosis. J. Aggress. Maltreatment Trauma 24, 215–236. https://doi.org/10.1080/10926771.2015.1002649.

Maercker, A., Brewin, C.R., Bryant, R.A., Cloitre, M., van Ommeren, M., Jones, L.M., Humayan, A., Kagee, A., Llosa, A.E., Rousseau, C., Somasundaram, D.J., Souza, R., Suzuki, Y., Weissbecker, I., Wessely, S.C., First, M., Reed, G., 2013. Diagnosis and classification of disorders specifically associated with stress: proposals for ICD-11. World Psychiatry 12, 198–206. https://doi.org/10.1002/wps.20057.

Murphy, S., Elklit, A., Dokkedahl, S., Shevlin, M., 2016. Testing the validity of the proposed ICD-11 PTSD and complex PTSD criteria using a sample from Northern Uganda. Eur. J. Psychotraumatol. 7, 32678. https://doi.org/10.3402/ejpt.v7.32678.

Muthén, L.K., Muthén, B.O., 2013. Mplus User's Guide, 7th ed. Muthén & Muthén, Los Angeles, CA.

Nickerson, A., Cloitre, M., Bryant, R.A., Schnyder, U., Morina, N., Schick, M., 2016. The factor structure of complex posttraumatic stress disorder in traumatized refugees. Eur. J. Psychotraumatol. 7, 33253. https://doi.org/10.3402/ejpt.v7.33253.

Palic, S., Zerach, G., Shevlin, M., Zeligman, Z., Elklit, A., Solomon, Z., 2016. Evidence of complex posttraumatic stress disorder (CPTSD) across populations with prolonged trauma of varying interpersonal intensity and ages of exposure. Psychiatry Res. 246, 692–699. https://doi.org/10.1016/j.psychres.2016.10.062.

Reed, G.M., Correia, J.M., Esparza, P., Saxena, S., Maj, M., 2011. The WPA-WHO global survey of psychiatrists' attitudes towards mental disorders classification. World Psychiatry 10, 118–131. https://doi.org/10.1002/j.2051-5545.2011.tb00034.x.

Shevlin, M., Hyland, P., Karatzias, T., Fyvie, C., Roberts, N., Bisson, J.I., Brewin, C.R., Cloitre, M., 2017. Alternative models of disorders of traumatic stress based on the new ICD-11 proposals. Acta Psychiatr. Scand. 135, 419–428. https://doi.org/10.1111/acps.12695.

Shevlin, M., Hyland, P., Roberts, N.P., Bisson, J.I., Brewin, C.R., Cloitre, M., 2018. A psychometric assessment of Disturbances in Self-Organization symptom indicators for ICD-11 Complex PTSD using the International Trauma Questionnaire. Eur. J. Psychotraumatol. 9, 1419749. https://doi.org/10.1080/20008198.2017.1419749.

Silove, D., Tay, A.K., Kareth, M., Rees, S., 2017. The relationship of complex post-traumatic stress disorder and post-traumatic stress disorder in a culturally distinct, conflict-affected population: a study among West Papuan refugees displaced to Papua New Guinea. Front. Psychiatry 8, 73. https://doi.org/10.3389/fpsyt.2017.00073.

Tay, A.K., Mohsin, M., Rees, S., Tam, N., Kareth, M., Silove, D., 2018. Factor structures of complex posttraumatic stress disorder and PTSD in a community sample of refugees from West Papua. Compr. Psychiatry 85, 15–22. https://doi.org/10.1016/j.comppsych.2018.05.001.

Tay, A.K., Rees, S., Chen, J., Kareth, M., Silove, D., 2015. The structure of post-traumatic stress disorder and complex post-traumatic stress disorder amongst West Papuan refugees. BMC psychiatry 15, 111. https://doi.org/10.1186/s12888-015-0480-3.

Wirth, R.J., Edwards, M.C., 2007. Item factor analysis: current approaches and future directions. Psychol. Methods 12, 58. https://doi.org/10.1037/1082-989X.12.1.58.

World Health Organization, 2018. International Classification of Disorders, 11th edition. World Health Organization, Geneva.