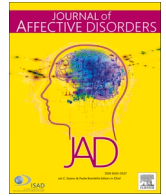


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Research paper

Examining accurate diagnosis of complex PTSD in ICD-11



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ABSTRACT

Background: Complex posttraumatic stress disorder (complex PTSD), the most frequently suggested new category for inclusion by mental health professionals, has been included in the Eleventh Revision of the World Health Organization's International Classification of Diseases (ICD-11). Research has yet to explore whether clinicians' recognition of the distinct complex PTSD symptoms predicts giving the correct diagnosis. The present study sought to determine if international mental health professionals were able to accurately diagnose complex PTSD and identify the shared PTSD features and three essential diagnostic features, specific to complex PTSD.

Methods: Participants were randomly assigned to view two vignettes and tasked with providing a diagnosis (or indicating that no diagnosis was warranted). Participants then answered a series of questions regarding the presence or absence of each of the essential diagnostic features specific to the diagnosis they provided.

Results: Clinicians who recognized the presence or absence of complex PTSD specific features were more likely to arrive at the correct diagnostic conclusion. Complex PTSD specific features were significant predictors while the shared PTSD features were not, indicating that attending to each of the specific symptoms was necessary for diagnostic accuracy of complex PTSD.

Limitations: The use of written case vignettes including only adult patients and a non-representative sample of mental health professionals may limit the generalizability of the results.

Conclusions: Findings support mental health professionals' ability to accurately identify specific features of complex PTSD. Future work should assess whether mental health providers can effectively identify symptoms of complex PTSD in a clinical setting.

In preparation for the newest revision of the International Classification of Diseases and Related Health Problems (11th Revision; ICD-11), the World Health Organization (WHO; 2020) in collaboration with the World Psychiatric Association (Reed et al., 2011) and the International Union of Psychological Science (Evans et al., 2013) conducted surveys that indicated Disorders Specifically Associated with Stress were some of the most frequently used within daily practice. In these surveys, mental health professionals from across the globe were asked to suggest diagnostic categories to add to the classification. Complex posttraumatic stress disorder (complex PTSD) was the most frequently suggested

category for inclusion (Robles et al., 2014). Based on review of the evidence (Maercker et al., 2013), the ICD-11 Working Group on Disorders Specifically Associated with Stress recommended inclusion of complex PTSD, which was officially adopted by the World Health Assembly in 2019 (World Health Organization, 2019).

The concept of complex PTSD is not entirely new but rather has evolved over time. Herman (1992) originally proposed complex PTSD to describe a syndrome observed in survivors of prolonged, repeated trauma. She argued that the diagnostic criteria of PTSD at that time only captured "survivors of circumscribed traumatic events...based on the

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prototypes of combat, disaster, and rape” (p. 119). The new diagnosis included symptom clusters which would later become the basis for the ICD-11’s diagnostic requirements for complex PTSD: affect dysregulation, negative self-perception, and interpersonal difficulties. Herman’s proposed disorder was considered by the posttraumatic stress disorder (PTSD) field trial for the DSM-IV, which included a diagnosis called disorders of extreme stress, not otherwise specified (DESNOS). Findings from the field trials indicated that the majority of those who met criteria for DESNOS also met criteria for PTSD (van der Kolk et al., 2005). The DSM-IV committee members were not convinced that the evidence from the field trials justified DESNOS as an independent diagnosis, but rather, included symptoms of DESNOS under associated symptoms of PTSD.

As a part of the development of the DSM-5, rather than adopt a new diagnosis, the PTSD, Trauma, and Dissociative Disorders Sub-Work Group of the Anxiety Disorders Work Group chose to expand the number of symptom groups of PTSD from three (e.g., intrusion, avoidance, and alterations in arousal and reactivity) to include an additional symptom group called “negative alterations in cognitions and mood”, comprising two of the three additional required elements of ICD-11 complex PTSD (persistent beliefs about oneself as diminished, defeated or worthless; persistent difficulties in sustaining relationships and in feeling close to others) (American Psychiatric Association, 2013; First et al., 2021). Additionally, the two avoidance items from the DSM-IV/–TR’s avoidance/numbing group were divided to be part of DSM-5’s avoidance group and the numbing symptoms were included within the new symptom group (Pai et al., 2017). The justification provided for this decision was due to: a) the absence of a consistent definition of complex PTSD; b) the lack of standardized and validated measures; and c) the argument that the difference between complex PTSD and PTSD is mostly a difference in symptom severity (e.g., Rink and Lipinska, 2020; Wolf et al., 2015). Additionally, some argued against setting a precedent of establishing new diagnoses to account for more severe forms of any disorder (Resick et al., 2012), based on the assumption that complex PTSD is simply a severe form of PTSD.

A growing body of research has addressed each of these concerns. The introduction of complex PTSD as a new diagnosis within the ICD-11 established a clear definition which has been used to design and validate standardized self-report measures (e.g., Cloitre et al., 2018; Litvin et al., 2017). Additionally, the argument that complex PTSD and PTSD are merely differences in severity has not been supported by accumulating evidence (Brewin et al., 2017; Cloitre et al., 2020). An initial latent class analysis with a population of trauma survivors revealed the emergence of two profiles with symptoms congruent with PTSD and complex PTSD. Unique to each disorder, the complex PTSD subgroup was strongly predicted by a history of repeated trauma while the PTSD profile was strongly predicted by experiencing a single traumatic event (Cloitre et al., 2013). Replications of latent class/latent profile analyses (Brewin et al., 2017; Redican et al., 2021) as well as network analyses (Knefel et al., 2020; Levin et al., 2021) have supported the distinction between complex PTSD and PTSD. In addition, meta-analyses of treatment studies indicate that individuals with trauma histories similar to those with complex PTSD (Karatzias et al., 2019) or with symptom sets similar to complex PTSD (Coventry et al., 2020) receive less benefit from established PTSD treatments than those without such characteristics. For more information regarding the large body of research that has investigated the clinical utility and validity of complex PTSD, please see Reed et al. (2022).

The ICD-11 diagnosis of complex PTSD draws in part from the ICD-10 diagnosis Enduring Personality Change after Catastrophic Experience (EPCACE), which it replaces (Maercker et al., 2013). The diagnostic requirements for complex PTSD have integrated the symptoms of PTSD in recognition of the fact that PTSD symptoms co-occur with what is referred to as disturbances in self-organization forming a unified symptom profile (e.g., Cloitre et al., 2013). In order to qualify for the complex PTSD diagnosis, the three core symptom clusters for PTSD (re-experiencing in the present, avoidance, and an ongoing sense of threat)

must be present, including the three complex PTSD specific disturbances in self-organization: affect dysregulation, negative self-concept, and problems feeling close to others (World Health Organization, 2020). ICD-11 complex PTSD has been demonstrated to be distinguishable from PTSD in its etiology, risk factors, co-morbidities, and course (see Cloitre et al., 2020; Zerach et al., 2019). These findings support the decision to view PTSD and complex PTSD as distinct and independent diagnoses. The ICD-11 field trials provided evidence that clinicians were able to differentiate and diagnose complex PTSD compared to ICD-10’s EPCACE and ICD-11’s PTSD with high accuracy (Keeley et al., 2016). However, research has yet to explore whether clinicians’ recognition of the distinct complex PTSD symptoms predicts giving the correct diagnosis.

Accordingly, it is important to investigate clinicians’ ability to recognize and apply the distinct features of complex PTSD. A lack of identifiability would question the clinical utility of complex PTSD in the ICD-11. The present study sought to determine if a sample of international mental health professionals could identify the presence of shared PTSD symptoms and three complex PTSD specific symptoms to ultimately arrive at a correct diagnosis for written case vignettes. We predict clinicians will be able to accurately recognize the presence of complex PTSD symptoms.

1. Method

1.1. Participants and procedure

Participants were a subset of a larger study that focused on the key differences between the diagnostic requirements of Disorders Specifically Associated with Stress for ICD-11 and corresponding requirements for ICD-10 (Keeley et al., 2016). Participants were members of the Global Clinical Practice Network (GCPN), a worldwide network of mental health professionals who registered to participate in WHO field studies related to the ICD-11. For more information on the history and development of the GCPN, see Reed et al. (2015). The final sample of the parent study consisted of 1738 mental health professionals (39.41 % female, 51.67 % psychiatrists) representing 76 different nationalities. All participants provided consent prior to enrollment.

The study was administered through Qualtrics, a web-based survey program. Each individual was randomly assigned to either the ICD-10 or ICD-11 condition and given the opportunity to view the corresponding diagnostic guidelines. Block randomization was utilized to ensure equal sample sizes. They were then randomly assigned to one of eight comparisons comprised of two vignettes designed to reflect specific changes implemented in the ICD-11. They provided a diagnosis (or indicated that no diagnosis was warranted) for the presented vignette. Participants then answered a series of questions regarding the presence or absence of each of the essential diagnostic features specific to the diagnosis they provided from the corresponding ICD diagnostic material. Participants then repeated the procedure for a second vignette.

In the current study, participants ($n = 269$, 42.75 % female, 56.51 % psychiatrists; see Table 1 for participant demographics and experience) were eligible if they currently provided clinical services to patients or engaged in direct clinical supervision. Because the focus of the current study was to determine if clinicians could accurately diagnose the presence of complex PTSD required features, participants were included if they were randomly assigned to the ICD-11 condition and provided a complex PTSD diagnosis for either of the two vignettes presented to them. Upon providing a diagnosis, participants were asked to endorse the presence or absence of the essential diagnostic features of complex PTSD. This included six required features shared between complex PTSD and PTSD—(a) history of trauma exposure, (b) re-experiencing, (c) avoidance, (d) sense of threat, (e) presence of the core PTSD symptoms within the past month, and (f) functional impairment—as well as three complex PTSD-specific requirements: (a) affect dysregulation, (b) negative self-perception, and (c) interpersonal disturbance. Regardless of whether or not complex PTSD was the correct diagnosis for a specific

Table 1
Participant demographics.

	f (%)
WHO Global Region	
African	9 (3.35)
North American	33 (12.27)
South American	60 (22.30)
Middle Eastern	9 (3.35)
European	72 (26.77)
Southeast Asian	22 (8.18)
Western Pacific-Asia	58 (21.56)
Western Pacific-Oceania	6 (2.23)
Gender	
Male	150 (55.76)
Female	115 (42.75)
Profession	
Medicine	152 (56.51)
Psychology	84 (31.23)
Nursing	2 (0.74)
Social Work	5 (1.86)
Counseling	14 (5.20)
Other	12 (4.46)
Age	47.57 (11.81)
Years of Experience	16.71 (10.64)
Currently Sees Clients	
Yes	259 (96.28)
No	7 (2.60)
Provides Direct Supervision	
Yes	206 (76.58)
No	60 (22.30)

Note: The Americas and Western Pacific Regions were divided into two parts to distinguish high-income, predominantly English-speaking parts of those regions from other countries.

vignette, providing a complex PTSD diagnosis would initiate the display of diagnostic questions regarding the presence or absence of features distinct to complex PTSD. Additionally, only participants that gave a diagnosis of complex PTSD saw the diagnostic questions for the essential features of complex PTSD. Therefore, participants that gave a diagnosis other than complex PTSD could not be included in this study. Participants of the current study were no different than those who never provided a complex PTSD diagnosis in terms of age (current study $M = 47.52$, $SD = 11.75$; parent study $M = 46.47$, $SD = 10.87$; $t(1738) = -1.35$, $p = .07$), clinical profession ($\chi^2(6, N = 1740) = 5.07$, $p = .54$) or gender ($\chi^2(1, N = 1733) = 0.97$, $p = .32$). The current participants had slightly more years of experience (current study $M = 16.58$, $SD = 10.73$; parent study $M = 15.43$, $SD = 10.24$; $t(1738) = -1.59$, $p < .05$).

1.2. Measures

The materials in the study included the proposed diagnostic description for Disorders Specifically Associated with Stress for ICD-11, a set of 11 case vignettes (see Table 2), and diagnostic and clinical utility

Table 2
Correct diagnosis per vignette.

	Correct diagnosis
Vignette 1 (1a)	PTSD
Vignette 2 (1b)	Other ^a
Vignette 3 (1c)	Other
Vignette 4 (1d)	PTSD
Vignette 5 (2a)	Complex PTSD
Vignette 6 (2b)	PTSD
Vignette 7 (3)	Normative Stress Reaction
Vignette 8 (4)	Prolonged Grief Disorder
Vignette 9 (5a)	Adjustment Disorder
Vignette 10 (5b)	Adjustment Disorder
Vignette 11 (6)	Normative Stress Response

Note: ^aOther disorder specifically associated with stress; PTSD = Posttraumatic Stress Disorder; Complex PTSD = Complex Post-traumatic Stress Disorder.

questions regarding the vignettes. Vignettes were validated through an intense pre-testing process to ensure that all necessary diagnostic features were present and recognizable. Vignettes were developed based on actual cases seen by experts rather than an artificial construction of symptoms, covering a range of ages and included men and women (no child cases were included). Vignettes were each approximately the same length.

1.3. Data analysis

Logistic regression analyses were conducted using the endorsement of the essential diagnostic features of complex PTSD as predictor variables with diagnostic choice (i.e., correct or incorrect) as the outcome variable. All nine predictors were simultaneously entered into the model. The nine predictors were: trauma exposure, three complex PTSD specific diagnostic features (affect regulation, negative self-perception, and interpersonal disturbance) and the four shared complex PTSD and PTSD features (avoidance, hyperarousal, re-experiencing, and duration of core symptoms). We used Nagelkerke's R^2 as a measure of effect size for the overall model, and report Wald's test and odds ratios (with 95 % confidence intervals) for the univariate effect of each predictor.

2. Results

All assumptions of logistic regression were checked and met. Ultimately, the functional impairment symptom was dropped from the analysis, having been endorsed by all participants and, therefore, providing zero variance. Its deletion did not significantly affect the results for the other symptoms. When the remaining eight predictor variables were considered together, they significantly predicted whether a clinician arrived at the correct or incorrect diagnosis, $\chi^2(8, N = 269) = 163.82$, $p < .001$. The model effect size was strong, with Nagelkerke $R^2 = 0.60$.

With all predictors included in the model, 85.9 % of cases were correctly predicted; 92.5 % of correct diagnoses were accurately predicted whereas only 78.6 % of incorrect diagnoses were accurately predicted.

Table 3 shows the Wald test, odds ratio, and confidence intervals for each of the eight complex PTSD diagnostic features, as well as the percentage of clinicians that correctly endorsed each feature. According to the Wald criterion, a single shared feature and the three complex PTSD specific features were found to be significantly associated with selecting the correct diagnosis. The endorsement of trauma exposure, affect dysregulation, negative self-perception and interpersonal disturbances increased the likelihood of whether a clinician arrived at the correct diagnosis. According to the Wald criterion, four shared features between complex PTSD and PTSD were found to be non-significant predictors. The endorsement of re-experiencing, avoidance, sense of threat, and the duration of the three core symptoms did not affect the likelihood of

Table 3
Regression models of symptom endorsement.

Symptoms	% endorsed	p	OR	95 % CI OR	
				LL	UL
History of Exposure	88.4 (59.18)	< 0.001	2.74	1.01	4.47
Re-Experiencing	94.2 (54.02)	0.71	0.21	-0.97	1.40
Avoidance	92.4 (53.52)	0.12	0.83	-0.22	1.88
Sense of threat	87.0 (53.94)	0.73	0.73	-0.06	1.52
Duration of Three Core PTSD Symptoms	84.8 (51.06)	0.69	0.24	-0.34	0.81
Affect Dysregulation	83.8 (62.07)	< 0.001	1.55	0.54	2.57
Negative Self-Perception	63.9 (77.97)	< 0.001	1.88	1.20	2.56
Interpersonal Disturbances	78.7 (63.76)	< 0.001	1.31	0.52	2.10

Note. Bold denotes endorsement of the symptom when Complex PTSD was the correct diagnosis; $n = 146$. OR = Odds ratio; CI = confidence interval; LL = lower limit; UL = upper limit.

whether a clinician arrived at the correct or incorrect diagnosis of complex PTSD.

3. Discussion

Complex PTSD was the most frequently suggested category for inclusion (Robles et al., 2014) and has been officially adopted as a diagnosis in ICD-11. Nevertheless, there continues to be debate regarding the validity of complex PTSD as a standalone, independent diagnosis (Resick et al., 2012). The current study sought to assess to what degree clinicians were able to identify the essential features of complex PTSD, and if that identification would be associated with a correct diagnostic conclusion. We predicted that international mental health providers would be able to accurately diagnose based upon the presence of complex PTSD specific symptoms.

Overall, clinicians were able to verify the presence of complex PTSD features with a moderate degree of accuracy. More specifically, trauma exposure and the three complex PTSD specific diagnostic features (affect regulation, negative self-perception, and interpersonal disturbance) were significant predictors of whether a clinician arrived at the correct diagnosis. The four shared complex PTSD and PTSD features (avoidance, hyperarousal, re-experiencing, and duration of core symptoms) were non-significant predictors, which is expected given that they should be present for both diagnoses. During preliminary analysis, functional impairment was found to be a non-significant predictor. It was dropped from the final analysis for providing zero variance because it was endorsed by all clinicians. The universal endorsement of functional impairment served as an indicator to clinicians of the presence of psychopathology; however, it did not aid in deciphering the type of psychopathology. These findings indicate that some clinicians correctly attended to the specific symptoms of complex PTSD as the differentiator from other trauma-related disorders. The concern that clinicians may not adequately differentiate complex PTSD and PTSD features because they are part of a single severity continuum of PTSD may not be warranted (Rink and Lipinska, 2020; Wolf et al., 2015). It is important to note that participants were only marginally better than chance with accurately endorsing the presence of the four shared complex PTSD and PTSD features (avoidance, hyperarousal, re-experiencing, and duration of core symptoms). These results indicate that clinicians' diagnostic conclusion does not necessarily indicate that they think all the required diagnostic features are present. Sometimes, they may be providing a diagnosis that is not warranted based upon the rules of the diagnostic system (First et al., 2018; Waszczuk et al., 2017; Jensen-Doss and Hawley, 2011).

3.1. Limitations and future directions

The results of this study should be interpreted in light of its limitations. First, written case vignettes are inherently artificial and act as an analogue for clinical interaction. Clinicians may respond differently when directly interacting with a patient. Nevertheless, experimental, vignette-based studies present potential advantages including the ability to control the case material. This allows for the isolation of specific factors of interest associated with each set of diagnostic requirements. For more information regarding the utility of vignettes, please see Evans et al. (2015). Second, the GCPN represents a broad sample of international mental health professionals; however, it is not intended to be a representative sample of all mental health professionals. The results may not generalize to some clinicians, situations, or contexts. Third, the vignettes described only adult cases and has not tested the application of the ICD-11 complex PTSD requirements to case descriptions of children and adolescents. Fourth, the design of the parent study asked clinicians to confirm the presence of required symptoms after making an initial diagnosis. In the context of this study, clinicians may have simply confirmed the features because they had already decided upon the diagnosis; however, this was not the case as some clinicians did fail to

endorse required features of a diagnosis they gave. For example, only about half of participants accurately endorsed shared PTSD and complex PTSD features, while over a third of participants inaccurately endorsed the absence of complex PTSD features. A prospective design whereby clinicians select the present features before providing a summary diagnosis would help clarify this issue. Last, it is important to consider that the clinicians involved had no prior experience with complex PTSD and, for many of them, it may have been their first time seeing the diagnostic requirements. This may account for the moderate degree of accuracy endorsing complex PTSD specific features. However, complex PTSD developed out of the previous DSM-IV disorder, DESNOS, and ICD-10's EPCACE, and so, clinicians may have a degree of familiarity with the clinical presentation. Nevertheless, it would be fair to expect an increase in diagnostic accuracy after further training.

Future work should focus on assessing whether mental health providers can effectively identify the symptoms of complex PTSD in a clinical setting. A potential concern would be that providers would rely on the specific type of traumatic event as well as the frequency of such events in order to differentiate complex PTSD from PTSD, thereby, not appropriately assessing the presence of a specific symptom profile. Prolonged trauma is not a requirement for complex PTSD but rather a substantial risk factor. Research indicates that some individuals with PTSD have experienced prolonged trauma and conversely some individuals with complex PTSD have a history of a single very severe traumatic stressor (Cloitre et al., 2013). Furthermore, it would be important to investigate how accuracy of complex PTSD diagnoses may vary among mental health professionals who work in a general health setting versus a trauma specific treatment center. Additionally, expanding the current study to include child and adolescent cases would help determine the effectiveness of the complex PTSD diagnostic requirements of ICD-11. While the distinct latent class structure of complex PTSD has been found in child (Hébert and Amédée, 2020) and adolescent samples (Kazlauskas et al., 2020), there have not been any studies which have effectively tested whether mental health providers are able to distinguish the disorder and identify the presence of specific symptoms within that population. Lastly, the emergence of literature citing the implications of diagnosis for treatment of veterans and work-related PTSD (Nucera et al., 2023 & Chirico et al., 2022) should be expanded to include complex PTSD.

Nevertheless, despite these limitations, the present study provides evidence indicating mental health professionals can identify the specific symptoms of complex PTSD. The current study is also the first to investigate clinicians' ability to accurately diagnose complex PTSD and identify the essential features which will inform the direction of future research.

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Declaration of competing interest

Most of the authors were members or consultants to the WHO Field Study Coordination Group for ICD-11 Mental and Behavioural Disorders (JWK, SCE, & MR) or the Working Group on Disorders Specifically

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