Psychometric evaluation of the Dutch International Trauma Questionnaire for the 11th revision of the International Classification of Diseases posttraumatic stress disorder and complex posttraumatic stress disorder

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Psychological Trauma: Theory, Research, Practice, and Policy

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Psychometric Evaluation of the Dutch International Trauma Questionnaire for the 11th Revision of the *International Classification of Diseases* Posttraumatic Stress Disorder and Complex Posttraumatic Stress Disorder

Jorinde Gerrmann[1, 2], Manon Boeschoten[1], Mirjam J. Nijdam[1, 3], Niels van der Aa[1], Marloes B. Eidhof[4, 5], Chris M. Hoeboer[6, 7], Ad de Jongh[8, 9, 10, 11], Miranda Olff[1, 3], Maartje Schoorl[6, 7], Noortje I. van Vliet[12], Eric Vermetten[2], and F. Jackie June ter Heide[1]

[1] ARQ Centrum'45, ARQ Nationaal Psychotrauma Centrum, Oegstgeest/Diemen, the Netherlands
[2] Department of Psychiatry, Leiden University Medical Center
[3] Department of Psychiatry, Amsterdam University Medical Center
[4] Psychotraumacentrum Zuid Nederland, Reinier van Arkel, 's-Hertogenbosch, the Netherlands
[5] Behavioral Science Institute, Radboud University
[6] PsyQ, Parnassiagroep, The Hague, the Netherlands
[7] Unit Clinical Psychology, Institute of Psychology, Leiden University
[8] Research Department, PSYTREC, Bilthoven, The Netherlands
[9] Academic Centre for Dentistry Amsterdam (ACTA), University of Amsterdam and VU University Amsterdam
[10] School of Psychology, Queen's University
[11] Institute of Health and Society, University of Worcester
[12] Dimence Mental Health Group, Deventer, the Netherlands

Background: The International Trauma Questionnaire (ITQ) is a recent self-report measure to assess the severity and probable posttraumatic stress disorder (PTSD) and complex PTSD (CPTSD) as defined by the 11th revision of the *International Classification of Diseases*. Few studies have examined the psychometric properties of full and short ITQ versions in depth. Therefore, we aimed to evaluate the psychometric properties of the Dutch-translated 28-item ITQ and the 12-item version. ***Method:*** Data were used from existing clinical studies and routine clinical assessments for the 28-item ($n = 956$) and 12-item ($N = 4{,}944$) ITQ versions in trauma-exposed treatment-seeking individuals in the Netherlands. Internal consistency and factor validity were assessed, and rates of probable PTSD and CPTSD were estimated. In addition, convergent and discriminant validity were examined by correlations with similar and dissimilar measures. ***Results:*** Both versions of the ITQ showed good internal consistency and convergent validity. Confirmatory factor analysis showed that both a first-order correlated six-factor model and a two-factor second-order model were a good representation of the latent structure for the ITQ-12. The ITQ-12 resulted in higher CPTSD rates compared to the ITQ-28 (47% vs. 36.3%), while a similar number of patients met the criteria for either PTSD or CPTSD (70.6% vs. 76.4%). ***Conclusion:*** Internal consistency and convergent validity for the ITQ-12 and ITQ-28 were supported. The factorial validity was good for the ITQ-12 and acceptable for the ITQ-28. The discrepancy in CPTSD rates between the ITQ-12 and ITQ-28 calls for further testing of scoring methods against diagnostic clinical interviews for CPTSD.

Jorinde Gerrmann https://orcid.org/0000-0003-2955-6320

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Correspondence concerning this article should be addressed to Jorinde Gerrmann, ARQ Centrum'45, ARQ Nationaal Psychotrauma Centrum, Rijnzichtweg 35, 2342 AX Oegstgeest, the Netherlands. Email: j.gerrmann@arq.org

Clinical Impact Statement

The psychometric properties of the Dutch International Trauma Questionnaire (ITQ) were supported in a clinical sample. Results support the use of the ITQ as an instrument to assess the symptom severity of the 11th revision of the *International Classification of Diseases* posttraumatic stress disorder and complex posttraumatic stress disorder. However, there is a need to investigate the accuracy with which the self-report ITQ assesses the two disorders by comparison with clinician-administered interviews.

Keywords: complex posttraumatic stress disorder, 11th revision of the *International Classification of Diseases*, International Trauma Questionnaire

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In 2022, the 11th revision of the *International Classification of Diseases* (*ICD-11*) of the World Health Organization (WHO) was implemented. The *ICD-11* now includes a distinction between the diagnosis of posttraumatic stress disorder (PTSD) and a more complex form of PTSD (CPTSD; WHO, 2019). With this revision, the WHO aimed to enhance clinical utility by focusing on a limited set of symptoms for disorders applicable across various international and cultural contexts around the world (Maercker et al., 2013). The *ICD-11* poses a core set of PTSD symptoms consisting of three symptom clusters, including (a) reexperiencing the trauma in the here and now (RE; flashbacks and nightmares), (b) avoidance of traumatic reminders (AV; internal or external avoidance associated with the event), and (c) an ongoing sense of current threat (SOT; hypervigilance and exaggerated startle response). The diagnosis of CPTSD requires additional disturbances in three domains of self-organization (DSO), which respectively include (a) affective dysregulation (AD; heightened emotional reactivity or emotional numbing), (b) negative self-concept (NSC; persistent beliefs about oneself as diminished and worthless), and (c) disturbed relationships (DRs; problems with sustaining relationships and feeling detached from others). To reach a diagnosis, PTSD and CPTSD require exposure to a threatening or horrific event, symptoms persisting for several weeks, and impairment in functioning (WHO, 2019). Differentiating between the two disorders could have implications for mental health policy, research, and clinical practice; it could help to determine risk factors and develop targeted interventions for PTSD and CPTSD (Nestgaard Rød & Schmidt, 2021). The availability of validated assessment tools to measure these constructs is a prerequisite for this use.

Following the WHO's *ICD-11*, the International Trauma Questionnaire (ITQ) was developed as a self-report measure to assess *ICD-11* PTSD and CPTSD (Cloitre et al., 2018). Initial versions of the ITQ measured PTSD with 6–12 items and DSO with 16 items. In line with the WHO's aim to define disorders by a limited set of core symptoms, the full 28-item version of the ITQ was reduced to 12 items with two items for each of the six symptom clusters of PTSD and CPTSD (see S1 in the online supplemental materials for an item overview; Cloitre et al., 2018). Since its introduction, multiple studies have evaluated versions of the ITQ in terms of their psychometric properties, including internal consistency, convergent and discriminant validity, factor structure, and PTSD and CPTSD rates. Overall, studies show that internal consistency is good for existing ITQ versions across various community and clinical samples (e.g., Cloitre et al., 2018; Ho et al., 2020; Hyland et al., 2017). Convergent and discriminant validity were supported, with the DSO scale showing the highest associations with measures of self-esteem, negative beliefs about the self and world, emotional dysregulation, and interpersonal problems; whereas measures of PTSD symptoms were correlated higher with the PTSD scale of the ITQ (e.g., Ho et al., 2020; Hyland et al., 2017; Vang et al., 2021). However, only a few studies evaluated all six PTSD and DSO symptom clusters in relation to comparison measures (Cyr et al., 2022; Karatzias et al., 2016; Møller, Søgaard, et al., 2021).

Evidence from latent class analyses supports two symptom profiles consistent with the *ICD-11* conceptualization of PTSD and CPTSD (Brewin et al., 2017). Considering the factor validity of the ITQ, a systematic review by Redican et al. (2021) found consistent support for two latent models across studies based on confirmatory factor analysis (CFA). In half of the community studies, a six-factor model consisting of the correlated six first-order symptom clusters performed best. In contrast, a higher-order model was superior in the majority of clinical samples, which is more consistent with the *ICD-11* conceptualization. In this model, one second-order PTSD factor explained the three PTSD clusters and another second-order DSO factor explained the three DSO symptoms clusters. However, all studies found a good fit for both models, and overall, the differences between the two models were minimal. Therefore, Redican et al. (2021) questioned the added value of distinguishing PTSD from CPTSD in a hierarchical structure and this remains a matter of debate.

Another gap in the existing literature is that only a few studies have compared the results of the 12-item ITQ with those of the 28-item version (Cloitre et al., 2018; Sele et al., 2020). Shorter instruments can measure symptoms more time-efficiently than the original test, provided that required psychometric properties are maintained (Smith et al., 2000). Previous studies of trauma-exposed clinical samples, found rates for the ITQ-12 ranging from 5.3% to 21.6% for PTSD and from 55.9% to 80.6% for CPTSD (Frost et al., 2022; Letica-Crepulja et al., 2020; Murphy et al., 2020; Vang et al., 2021), while for the ITQ-28 rates ranging from 10.9% to 25.2% for PTSD and from 36.1% to 56.3% for CPTSD have been reported (Hyland et al., 2017; Simon et al., 2019; Vallieres et al., 2018). Considering all of the above studies used a single ITQ version, a direct comparison of PTSD and CPTSD rates is not possible. To the best of our knowledge, only Cloitre et al. (2018) estimated PTSD and CPTSD rates using both ITQ versions and found that the 12-item ITQ classified an equal number of patients meeting the criteria for PTSD or CPTSD to the ITQ-28. However, the ITQ-12 produced slightly higher rates for CPTSD (61.1%) compared to the 28-item version (56.3%).

The current study examines the psychometric properties of the full and the short Dutch translation of the ITQ in a large heterogeneous clinical sample. The study aimed to investigate the following psychometric properties of both Dutch ITQ versions: (a) the internal

consistency of the total scale, PTSD, and DSO scales, (b) the convergent and discriminant validity using relevant comparison measures, (c) the factorial validity using CFA, and (d) the rates of PTSD and CPTSD. Based on the above summarized findings, we hypothesized the internal consistency to be good. Secondly, we hypothesized higher associations between ITQ's PTSD scale and other measures of PTSD, as opposed to the ITQ's DSO scale. Higher associations were also expected between ITQ's DSO scale and other measures of DSO, as set against the ITQ's PTSD scale. In terms of subscales, we expected the three PTSD subscales to be most highly associated with the respective other measures of PTSD symptoms, and the three DSO subscales to be most highly correlated with the respective other measures of DSO symptoms. Thirdly, we expected to find the second-order two-factor model consistent with the *ICD-11* CPTSD and PTSD model, to demonstrate the best fit with our data. Finally, we expected to find similar rates of probable PTSD and CPTSD for both ITQ versions.

Method

Participants and Procedure

This is a secondary analysis on the data from routine clinical assessments and clinical research projects in the psychotrauma field in the Netherlands. All data were collected before treatment according to data protection regulations and approved by relevant authorities. Ethical exemption for the current study was given by the medical ethical committee Leiden–Den Haag–Delft due to the use of retrospective data without people being subjected to study procedures (METC LDD; reference number G21.181). Four samples were combined to create the data set.

The first sample consisted of 678 trauma-exposed patients who were referred for treatment at in- and outpatient treatment centers of ARQ Centrum'45 in the Netherlands. Data were collected as part of routine clinical assessments between 2014 and 2020. This sample mainly consisted of military veterans and first responders (31.6%; $n = 214$), adult offspring of World War II survivors (25.2%; $n = 171$), and patients with other trauma backgrounds (34.1%; $n = 231$). The mean number of experienced and witnessed potential traumatic events based on the Life Events Checklist for *DSM-5* (LEC-5; Weathers et al., 2013) was 6.5 ($SD = 2.7$).

The second sample consisted of 3,988 trauma-exposed patients who were referred for in- and outpatient treatment centers of the Psychotrauma Expertise Centre (PSYTREC) in the Netherlands. Data were collected as part of routine clinical assessments between 2018 and 2021. Patients reported their index trauma (i.e., most troubling experience) on the ITQ using six fixed categories (i.e., sexual abuse, a life-threatening situation, a serious accident, a serious injury, physical abuse, and others). The most frequently reported index traumas were sexual abuse (70.5%; $n = 2{,}813$), physical abuse (70.4%; $n = 2{,}809$), and a life-threatening situation (49.1%; $n = 1{,}960$).

The third sample consisted of 150 participants from a randomized controlled trial at outpatient treatment centers of PsyQ in the Netherlands. For more information, see the improving treatment for patients with childhood abuse related PTSD study protocol (the IMPACT study; Oprel et al., 2021). Adults with PTSD based on *DSM-5* criteria related to childhood sexual and/or physical abuse were recruited. Data were collected between 2016 and 2019. Participants reported childhood sexual abuse (72.7%; $n = 109$), childhood physical abuse (62%; $n = 93$), and exposure to both types of abuse (37.7%; $n = 52$) as index traumas. The mean number of experienced and witnessed potentially traumatic events based on the LEC-5 was 5.7 ($SD = 2.4$).

The fourth sample consisted of 128 participants from a randomized controlled trial at outpatient treatment centers of Dimence and GGZ Oost Brabant in the Netherlands. For more details, see the ToPrepareOrNot study protocol (the TOPRON study; Van Vliet et al., 2018). Adults with PTSD based on *DSM-5* criteria related to childhood sexual and/or physical abuse were recruited. Data were collected between 2016 and 2020. Participants reported childhood sexual abuse (74.2%; $n = 95$), childhood physical abuse (77.3%; $n = 99$), and exposure to both types of abuse (51.6%; $n = 66$) as index traumas.

Measures

ICD-11 PTSD and DSO Symptoms

The ITQ is a self-report measure to assess symptom severity and diagnostic criteria for *ICD-11* PTSD and CPTSD (Cloitre et al., 2018). In this article, we will use the term ITQ-28 to refer to the full ITQ version and ITQ-12 for the 12-item short form. The ITQ-28 was administered in three of the four samples and was used to obtain scores for the ITQ-12 and ITQ-28. In the PSYTREC sample, only the ITQ-12 was used. The PTSD scale of both ITQ versions assesses the three PTSD clusters: RE, AV, and SOT. For the ITQ-12, each of the three PTSD subscales consists of two items. The ITQ-28 includes six additional RE items in the PTSD scale. The DSO scale of both ITQ versions measures the three DSO clusters: AD, NSC, and DR. For the ITQ-12, each of the three DSO subscales consists of two items. The ITQ-28 includes 10 additional items: seven items that assess hyperactivation of AD (e.g., heightened emotional reactivity) and hypoactivation of AD (e.g., emotional numbing), two items for NSC, and one for DR. Respondents rated their degree of functional impairment in social, work, and other life domains related to both PTSD and DSO symptoms. All items were rated using a 5-point scale ranging from 0 (*not at all*) to 4 (*extremely*). Total scores ranged from 0 to 48 for the ITQ-12 and from 0 to 112 for the ITQ-28. Symptom severity was assessed by summing the score of the items for the total scale, the PTSD scale, the DSO scale, and the RE, AV, SOT, AD, NSC, and DR subscales for the ITQ-12 and ITQ-28, with a higher score indicating more severe symptoms.

Following the instructions of the initial developers, we used scoring methods for the ITQ-12 and ITQ-28 (Cloitre et al., 2018). For both ITQ versions, to reach the criteria for the PTSD cluster, a score of ≥ 2 (*moderately*) for at least one symptom from each of the RE, AV, and SOT subscales is required. In addition, a probable diagnosis of PTSD requires at least one symptom from each PTSD cluster, plus a score of ≥ 2 (*moderately*) for the endorsement of functional impairment in social, work, or other life domains associated with these symptoms. For the ITQ-28, to reach DSO symptom criteria: either a summed total score of ≥ 10 for the five hyperactivation AD items or a summed total score of ≥ 8 for the four hypoactivation AD items; a summed total score of ≥ 8 for the four NSC items; and a summed total score of ≥ 6 for the three DR items are required. For the ITQ-12, to reach DSO symptom criteria, a score of ≥ 2 (*moderately*) for at least one of the two symptoms from each of the AD, NSC, and DR subscales is required. For both ITQ versions, a probable diagnosis of CPTSD requires at least one symptom from each PTSD and DSO cluster, plus a score of ≥ 2 (*moderately*) for the endorsement of functional impairment in social, work, or other life domains associated

with both sets of symptoms. The *ICD-11* requires that a person may receive a single diagnosis of PTSD or CPTSD but not both.

For the Dutch translation, the ITQ-28 was independently translated from English to Dutch and back-translated by a team of two bilingual psychotrauma experts and two professional translators. In each translation phase, an English native speaker and a Dutch native speaker were involved. One of our authors reviewed the forward and backward translations and provided suggestions for revision. The revisions were reviewed and discrepancies were resolved through joint discussions. M. Cloitre, author of the ITQ, reviewed the revised back-translated version and approved the final version (Eidhof et al., 2018).

Comparison Measures

PTSD symptom severity was assessed by trained professionals using the Clinician-Administered PTSD scale for *DSM-5* (CAPS-5; Weathers et al., 2018). The CAPS-5 consists of 20 items corresponding to the four PTSD symptom clusters in *DSM-5*: intrusions, avoidance, cognitions and mood, and hyperarousal. We used three of the four clusters without the cognitions and mood subscale as comparison measures for RE, SOT, and AV, respectively. Items were rated on a 5-point scale ranging from 0 (*absent*) to 4 (*extreme/incapacitating*). Severity scores were calculated by summing the scores for the five items of intrusions, two items of avoidance, and five items of hyperarousal. Previous studies have the supported internal consistency and construct validity of the CAPS-5 (Boeschoten et al., 2018; Weathers et al., 2018). In the current sample, Cronbach's alpha was outside the good range for intrusions ($\alpha = .63$), avoidance ($\alpha = .40$), and arousal ($\alpha = .44$). Based on item correlations, intrusions (item-total range .33–.77; interitem range .20–.33) and avoidance ($r = .26$) showed good internal consistency.

Difficulties in emotion regulation were assessed with the 36-item Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004). The DERS is a self-report measure that assesses six domains of emotion regulation: goal-directed behavior, impulse control difficulties, awareness, access to emotion regulation strategies, and clarity. Consistent with previous research (Shevlin et al., 2017), we selected the "impulse control difficulties" subscale of the DERS as a comparison measure for AD. Items were rated on a 5-point scale ranging from 1 (*almost never*) to 5 (*almost always*). Severity scores were calculated by summing the six subscale items with scores ranging from 6 to 30. Supporting evidence for internal consistency and construct validity has been shown (Gratz & Roemer, 2004). In the current sample, internal consistency was good ($\alpha = .88$).

Negative posttraumatic cognitions were measured using the 36-item Posttraumatic Cognitions Inventory (PTCI; Foa et al., 1999). The PTCI measures negative trauma-related beliefs about the self and the world, and self-blame. Consistent with previous studies (Hyland et al., 2017; Karatzias et al., 2019), we selected the "negative beliefs about the self" subscale of the PTCI as a comparison measure for NSC. Items were scored on a 7-point scale ranging from 1 (*totally disagree*) to 7 (*totally agree*). Severity scores were calculated by averaging the 21 items of the self subscale with scores ranging from 1 to 7. The three-factor structure and internal consistency of the PTCI have been supported (Foa et al., 1999). In the current sample, internal consistency was good for the self subscale of the PTCI ($\alpha = .94$).

Interpersonal difficulties were assessed with the 64-item and the 32-item subset of the Inventory of Interpersonal Problems (IIP-64 and IIP-32; Horowitz et al., 2000). The IIP-32 and IIP-64 are self-report measures of interpersonal difficulties, and both consist of eight subscales (domineering, vindictive, cold, socially avoidant, nonassertive, exploitable, self-sacrificing, and intrusive). Similar to previous studies (Shevlin et al., 2017), the "cold" subscale was used to measure difficulties with feeling close to others and maintaining long-term commitments as a comparison measure for DR. Items were rated on a 5-point scale ranging from 0 (*not at all*) to 4 (*extremely*). Severity scores were calculated by averaging the four items of the cold subscale. Studies have supported the internal consistency and factor structure of the IIP-32 and IIP-64 (Horowitz et al., 2000; Vanheule et al., 2006). This study showed good internal consistency for the IIP-32 ($\alpha = .81$) and IIIP-64 ($\alpha = .84$) cold subscale.

Statistical Analyses

The CAPS-5 and DERS were used in all four samples. The PTCI and IIP were administered to three of the four samples. For a full overview of the comparison measures used in each sample (see Table 1). Data were analyzed with R (Version 4.0.3) and Rstudio (Version 1.4.1103) using the psych and tidyverse set of packages. Samples were characterized using descriptive statistics for trauma exposure and demographic data. Diagnostic rates for PTSD and CPTSD were calculated for both the ITQ-12 and ITQ-28. Internal consistency was evaluated for both ITQ versions and comparison measures by calculating Cronbach's alpha coefficients, interitem correlations, and corrected item-total correlations. Internal consistency can be considered good when Cronbach's alpha for the total scale is higher than .80, and most interitem correlations are moderate in magnitude within the recommended range of .15–.50 (Clark & Watson, 1995). As Cronbach's alpha is dependent upon the number of items in the scale (Streiner, 2003), we expected alpha to be lower for the PTSD, DSO, and total ITQ-12 scales than the PTSD, DSO, and total ITQ-28 scales. Interitem and corrected item-total correlations are not influenced by scale length and are better suited to assess multidimensional scales such as the ITQ (Streiner, 2003). Corrected item-total correlations were calculated to evaluate whether scores on individual items were associated with the scores of the total scale and the respective scores on the PTSD and DSO scales.

Pearson's *r* correlations were calculated to evaluate the convergent and discriminant validity of the ITQ-12 and ITQ-28. The strength of the correlations was interpreted by using Cohen's (1988) criteria of .10–.29, .30–.49, and .50 or higher, as small, medium, and large, respectively. Convergent validity can be demonstrated by high correlations ($r \geq .30$ medium) between the evaluated construct and similar constructs. Discriminant validity can be evidenced by lower correlations between the evaluated construct and dissimilar constructs ($\Delta r \geq .10$). Therefore, we expected higher correlations between the ITQ's PTSD scale and subscales of the CAPS-5, as set against the ITQ's DSO scale. Higher correlations were expected to be found between the ITQ's DSO scale and the DERS, PTCI, and IIP subscales, as opposed to the ITQ's PTSD scale. Regarding the subscales, we expected the RE, AV, and SOT subscales to be most highly correlated with, respectively, the intrusions, avoidance, and hyperarousal subscales of the CAPS-5; and the AD, NSC, and DR subscales to be most highly correlated with, respectively, the DERS, PTCI, and IIP subscales.

The factorial structure of the ITQ-12 and ITQ-28 was evaluated using CFA. Four alternative factor models for the ITQ described

Table 1
Descriptive Statistics, Comparison Measures, and ICD-11 *PTSD and CPTSD Rates for the Samples*

Sample	Sample (*n*)	Comparison measures				Demographics		ITQ-12		ITQ-28	
		CAPS-5	DERS	PTCI	IIP	Age (*M*, *SD*, range)	Female (*n*, %)	PTSD (*n*, %)	CPTSD (*n*, %)	PTSD (*n*, %)	CPTSD (*n*, %)
1. ARQ Centrum'45	678	✓	✓	✓	✓ IIP-32 and IIP-64	49.5, 12.6, 19–84	257, 37.9%	167, 24.9%	297, 44.3%	270, 40.2%	232, 34.6%
2. PSYTREC	3,988	✓	✓	—	—	39.6, 12.3, 18–79	3,029, 76%	785, 19.7%	2,486, 62.3%	—	—
3. PsyQ	150	✓	✓	✓	✓ IIP-32	36.9, 11.7, 20–60	115, 76.7%	30, 20%	80, 53.3%	59, 39.3%	59, 39.3%
4. Dimence and GGZ Oost Brabant	128	✓	✓	✓	✓ IIP-32	36.8, 12.5, 18–65	86, 67.2%	21, 20.4%	57, 55.3%	42, 40.4%	45, 43.3%

Note. CAPS-5 = Clinician-Administered PTSD scale; DERS = Difficulties in Emotion Regulation Scale; PTCI = Posttraumatic Cognitions Inventory; IIP = Inventory of Interpersonal Problems; *ICD-11* = 11th revision of the *International Classification of Diseases*; ITQ = International Trauma Questionnaire; PTSD = posttraumatic stress disorder; CPTSD = complex posttraumatic stress disorder; PSYTREC = Psychotrauma Expertise Centre.

in the literature (Brewin et al., 2017; Redican et al., 2021) were estimated. Model 1 is a unidimensional model where all symptoms load on the single latent factor of CPTSD. Model 2 is a correlated first-order six-factor model (RE, AV, SOT, AD, NSC, and DR). Model 3 is a single-factor second-order model assessing whether the correlations between the six first-order factors of Model 2 can be explained by a single CPTSD second-order factor. Model 4 is a correlated second-order model, where a second-order PTSD factor accounts for the covariation between the RE, AV, and SOT factors, and a second-order DSO factor explains the covariation between the AD, NSC, and DR factors. All models were tested in Mplus (Version 8.4) using the weighted least squares mean and variance-adjusted (WLSMV) estimation method and theta parameterization. The WLSMV method is suited for estimating ordered categorical data (Muthén et al., 1997). Full information maximum likelihood (FIML) estimation was used to handle missing data.

To assess the goodness of fit for each model, a range of standard fit statistics were examined including the comparative fit index (CFI), the Tucker–Lewis index (TLI), and the root-mean-square error of approximation (RMSEA). CFI and TLI values higher than 0.95 indicate a good fit (Hu & Bentler, 1999), RMSEA values larger than 0.10 indicate an unacceptable fit, values between 0.08 and 0.10 indicate an acceptable fit, and values <0.08 and 0.05 indicate a good and very good fit, respectively (Kline, 2011). To compare models, we relied on changes in RMSEA as this index includes penalties for model complexity, and RMSEA changes of more than 0.015 indicate a better fit of the respective models (Chen, 2007). The lowest RMSEA values indicate the best-fitting model.

Results

Sample Characteristics and *ICD-11* PTSD and CPTSD

The sample characteristics and *ICD-11* rates of probable PTSD and CPTSD are presented in Table 1. The total sample consisted of 4,944 patients for the ITQ-12 and 956 patients for the ITQ-28. The mean age of patients in the total sample for the ITQ-12 was 41 years ($SD = 12.8$, range: 18–84 years), and 70.6% ($n = 3{,}487$) were female. The mean age of patients in the total sample for the ITQ-28 was 46 years ($SD = 13.7$, range: 18–84 years), and 48% ($n = 458$) were female. There were minimal missing data across the entire sample for the ITQ-12 (<1%) and ITQ-28 (<4%). The endorsement rates (scores ≥2) were high for the ITQ-12 with lower rates for the items that were only part of the ITQ-28 and are displayed in S1 in the online supplemental materials. Based on the patients with data for both ITQ versions (Samples 1, 3, and 4; $n = 956$), 70.6% ($n = 652$) met the criteria for either probable PTSD or CPTSD using the ITQ-12, while the ITQ-28 identified 76.4% ($n = 707$) patients meeting the criteria for PTSD or CPTSD. Based on the ITQ-12 in the group of patients with data for both ITQ versions (Samples 1, 3, and 4; $n = 956$), 23.6% ($n = 218$ met the criteria for probable PTSD and 47% ($n = 434$) for probable CPTSD. For the ITQ-28, the rates were 40.1% for probable PTSD ($n = 371$) and 36.3% for probable CPTSD ($n = 336$).

Internal Consistency

Most Cronbach's alpha coefficients were good for the total ITQ-12 ($\alpha = .84$), the PTSD ($\alpha = .76$), and DSO scales ($\alpha = .83$). The alpha of the total ITQ-28 was in the good range ($\alpha = .93$), as were the PTSD ($\alpha = .92$) and DSO scales ($\alpha = .90$). Interitem and corrected item-

total correlations are displayed in S2 in the online supplemental materials. The majority of interitem correlations for both ITQ versions, the total, PTSD, and DSO scales were within the recommended range. The PTSD scale of the ITQ-28 showed the largest amount (37.9%) of interitem correlations that were outside the recommended range and consisted of correlations above .50 between most RE items within the full RE subscale. The highest correlation ($r = .89$) was found between the NSC1 ("I feel like a failure") and NSC2 ("I feel worthless") items. In general, corrected item-total correlations of both ITQ versions were high, meaning that higher scores on individual items corresponded to higher scores on the total scale and on subscales. The AD4 ($r = .37$, anger) and AD5 ($r = .28$; dangerous/reckless behavior) hyperactivation of AD items showed the lowest associations to the total scale. Notably, we found that the majority of the sample (60% and 73%, respectively) did not endorse these symptoms and scored 0 (*not at all*) or 1 (*a little bit*) on these items.

Convergent and Discriminant Validity

Pearson's *r* correlations between the ITQ-12 and ITQ-28 scales (PTSD and DSO), subscales (RE, AV, SOT, AD, NSC, and DR), and comparison measures are displayed in Table 2. Overall, we found higher correlations between the PTSD scale of both ITQ versions and the CAPS-5 PTSD subscales, compared to the ITQ's DSO scale ($\Delta r \geq .10$). In general, we found higher correlations between the ITQ's DSO scale and other measures of DSO, compared to the ITQ's PTSD subscale ($\Delta r \geq .10$). For both ITQ versions, we found the two of the three PTSD subscales to show the highest correlations with the respective CAPS-5 PTSD subscales ($r \geq .30$; RE with intrusions and SOT with arousal). However, for the ITQ-28, the RE subscale of the ITQ-28 correlated higher with avoidance and arousal of the CAPS-5, the impulse subscale of the DERS, and the self subscale of the PTCI, than the two RE items of the ITQ-12. Additionally, for both ITQ versions, the three DSO subscales generally showed the highest correlations with the respective other measures of DSO symptoms ($r \geq .30$; AD with the impulse subscale of the DERS, NSC with the self subscale of the PTCI, and DR with the cold subscale of the IIP). However, for both ITQ versions, the PTCI correlated highly ($r \geq .30$) with the NSC, AD, and DR subscales.

CFA Results

The fit statistics for the four models of the ITQ-12 and ITQ-28 are presented in Table 3. While the fit indices of Model 1 for the ITQ-12 were below 0.95 and did not show a good fit, Models 2, 3, and 4 showed a good fit for the CFI and TLI values. For the RMSEA value, Model 3 showed a good fit, and Models 2 and 4 showed a very good fit. Comparison across model fit indices indicated the first-order correlated six-factor model (Model 2) as the best-fitting solution given the highest CFI and TLI, and lowest RMSEA value. However, Model 2 and the two-factor second-order model (Model 4) did not differ more than 0.015 in terms of fit (ΔRMSEA = .005), suggesting that

Table 2
Correlations Between the ITQ Versions and Comparison Measures

	CAPS-5						DERS		PTCI		IIP	
	Intrusions		Avoidance		Arousal		Impulse subscale		Self subscale		Cold subscale	
ITQ-28	*r*	*n*	*r*	*n*	*r*	*n*	*r*	*n*	*r*	*N*	*r*	*N*
PTSD	.60*[l]	682	.40*[m]	682	.44*[m]	675	.41*[m]	426	.52*[l]	496	.23*[s]	563
RE	.59*[l]	684	.35*[m]	684	.39*[m]	677	.40*[m]	426	.49*[m]	498	.20*[s]	563
AV	.37*[m]	685	.41*[m]	685	.27*[s]	678	.27*[s]	427	.34*[m]	499	.20*[s]	564
SOT	.39*[m]	685	.30*[m]	685	.47*[m]	678	.28*[s]	427	.44*[m]	499	.22*[s]	564
DSO	.32*[m]	681	.28*[s]	681	.38*[m]	674	.55*[l]	424	.77*[l]	496	.44*[m]	560
AD	.28*[s]	682	.26*[s]	682	.41*[m]	675	.57*[l]	425	.68*[l]	497	.38*[m]	561
NSC	.27*[s]	683	.19*[s]	683	.21*[s]	676	.41*[m]	425	.65*[l]	497	.24*[s]	562
DR	.24*[s]	683	.26*[s]	683	.28*[s]	676	.33*[m]	425	.60*[l]	497	.57*[l]	562
Total ITQ	.50*[l]	679	.38*[m]	679	.46*[m]	672	.55*[l]	424	.73*[l]	496	.38*[m]	560
	CAPS-5						DERS		PTCI		IIP	
	Intrusions		Avoidance		Arousal		Impulse subscale		Self subscale		Cold subscale	
ITQ-12	*r*	*n*	*r*	*n*	*r*	*n*	*r*	*N*	*r*	*n*	*r*	*n*
PTSD	.49*[m]	3,765	.31*[m]	3,765	.33*[m]	3,758	.20*[s]	4,414	.46*[m]	499	.23*[s]	564
RE	.52*[l]	3,768	.16*[s]	3,768	.22*[s]	3,761	.14*[s]	4,414	.33*[m]	499	.15*[s]	564
AV	.28*[s]	3,767	.33*[m]	3,767	.18*[s]	3,760	.14*[s]	4,414	.34*[m]	499	.20*[s]	564
SOT	.29*[s]	3,767	.22*[s]	3,767	.36*[m]	3,760	.16*[s]	4,414	.44*[m]	499	.22*[s]	564
DSO	.23*[s]	3,764	.19*[s]	3,764	.22*[s]	3,757	.39*[m]	4,412	.75*[l]	497	.46*[m]	561
AD	.20*[s]	3,765	.15*[s]	3,765	.22*[s]	3,758	.40*[m]	4,413	.59*[l]	498	.38*[m]	562
NSC	.21*[s]	3,766	.14*[s]	3,766	.15*[s]	3,759	.30*[m]	4,413	.65*[l]	498	.24*[s]	563
DR	.17*[s]	3,765	.18*[s]	3,765	.18*[s]	3,758	.27*[s]	4,412	.61*[l]	497	.55*[l]	562
Total ITQ	.41*[m]	3,762	.28*[s]	3,762	.32*[m]	3,755	.36*[m]	4,412	.71*[l]	497	.40*[m]	561

Note. ITQ = International Trauma Questionnaire; CAPS-5 = Clinician-Administered PTSD scale; DERS = Difficulties in Emotion Regulation Scale; PTCI = Posttraumatic Cognitions Inventory; IIP = Inventory of Interpersonal Problems; PTSD = posttraumatic stress disorder; DSO = disturbances in self-organization; CPTSD = complex posttraumatic stress disorder; RE = reexperiencing; AV = avoidance; SOT = sense of current threat; AD = affect dysregulation; NSC = negative self-concept; DR = disturbed relationships. Cohen's criteria: [s]small = 0.10–29, [m]medium = 0.30–49, and [l]large ≥0.50.
*All *ps* < .001.

Table 3

Fit Indices for the Alternative Models of the Symptom Structure of CPTSD

Model	ITQ-12 ($n = 4,909$)				ITQ-28 ($n = 932$)			
	χ^2 (*df*)	CFI	TLI	RMSEA (90% CI)	χ^2 (*df*)	CFI	TLI	RMSEA (90% CI)
1. One-factor model	3,486.111 (54)*	0.931	0.915	0.114 [0.111–0.117]	8,455.783 (350)*	0.755	0.735	0.158 [0.155–0.161]
2. Correlated six first-order factors	174.608 (39)*	0.997	0.995	0.027 [0.023–0.031]	2,805.996 (335)*	0.925	0.916	0.089 [0.086–0.092]
3. Six first-order and one second-order factors	1,121.419 (48)*	0.978	0.970	0.067 [0.064–0.071]	3,533.128 (344)*	0.903	0.894	0.100 [0.097–0.103]
4. Six first-order and two second-order factors	285.100 (47)*	0.995	0.993	0.032 [0.029–0.036]	2,811.975 (343)*	0.925	0.918	0.088 [0.085–0.091]

Note. ITQ = International Trauma Questionnaire; CFI = comparative fit index; CI = confidence interval; RMSEA = root-mean-square error of approximation; TLI = Tucker–Lewis index; CPTSD = complex posttraumatic stress disorder.
*All *ps* < .001.

the models are equivalent. For the ITQ-28, all CFI and TLI indices were below 0.95 and did not show a good fit. The fit for Model 1 was not acceptable as RMSEA was higher than 0.10 and CFI and TLI were below 0.90. Model 3 showed an unacceptable fit based on the TLI. Models 2 and 4 showed an acceptable fit for the CFI, TLI, and RMSEA. Models 2 and 4 showed the best fit indices with the highest CFI and TLI, and lowest RMSEA values. Again, Models 2 and 4 did not differ more than 0.015 in terms of fit (ΔRMSEA = 0.001), suggesting that the models are equivalent. The best-fitting models for the ITQ-12 are illustrated in Figure 1. Factor loadings for both ITQ versions are displayed in S3–S6 in the online supplemental materials.

Discussion

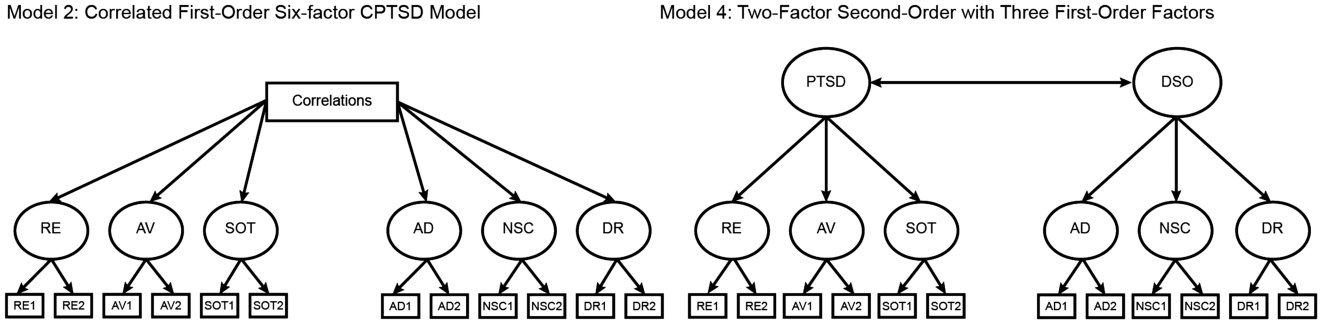
This study aimed to perform a psychometric evaluation of the 28-item version of the Dutch ITQ and the widely used 12-item short version (Cloitre et al., 2018) in a large heterogeneous trauma-exposed clinical sample. Overall results support the internal consistency, convergent and discriminant validity, and factorial validity for both ITQ versions. However, this study also provided potential directions for improving the ITQ in future revisions. Comparing the ITQ-12 and ITQ-28, we found a remarkable difference in rates of probable CPTSD (47% vs. 36.3%, respectively), indicating that scoring methods need to be validated against clinical interviews for CPTSD.

Consistent with previous studies (e.g., Cloitre et al., 2018; Hyland et al., 2017), both versions of the ITQ showed high internal consistency values for the total scale and the PTSD and DSO subscales. Cronbach's alpha values for the ITQ-12 were lower than for the ITQ-28 but most were in the good range. Overall, both ITQ versions feature a differentiated item set, with the majority of interitem correlations falling within the recommended range of moderate magnitude. However, almost 38% of the interitem correlations from the ITQ-28 were too high, indicating item redundancy due to the six additional RE items within the PTSD scale being part of the full scale. In addition, these items were associated with avoidance and arousal, indicating that these items measure multiple constructs. Our findings add to other studies (Cloitre et al., 2018; Hyland et al., 2017), suggesting that additional RE items are not needed to capture this feature of *ICD-11* PTSD. Like Møller, Bach, et al. (2021) and Dhingra et al. (2021), we found high interitem correlations between two items of the NSC subscale, suggesting these items are too similar to one another. For both ITQ versions, most items correlated highly with the total and their PTSD or DSO scale. In line with Shevlin et al. (2018), the AD items showed the lowest associations with the DSO scale. Consistent with previous findings (Hyland et al., 2017; Sele et al., 2020), two items of the AD scale had the lowest factor loadings, and most of the sample did not endorse these symptoms (Cloitre et al., 2018; Shevlin et al., 2018) suggesting that these items contribute little to the DSO construct and are rare symptoms.

Overall, in line with former studies (e.g., Ho et al., 2020; Hyland et al., 2017; Vang et al., 2021), the present findings indicate good convergent and discriminant validity for the PTSD and DSO scale of ITQ-12 and ITQ-28. Generally, we found high associations between the PTSD subscales of the ITQ and CAPS-5 supporting convergent validity. Also, we found higher associations between DSO subscales and other measures of AD, NSC, and DR. Discriminant validity was confirmed by lower associations of the DSO scale to

Figure 1

The Two Best-Fitting Solutions of the Latent Structure of ICD-11 *PTSD and CPTSD Symptoms*



Note. PTSD = posttraumatic stress disorder; DSO = disturbances in self-organization; CPTSD = complex posttraumatic stress disorder; RE = reexperiencing; AV = avoidance; SOT = sense of current threat; AD = affect dysregulation; NSC = negative self-concept; DR = disturbed relationships; *ICD-11* = 11th revision of the *International Classification of Diseases*.

PTSD subscales of the CAPS-5, and by lower associations between the ITQ's PTSD scale and measures of DSO symptoms. Contrary to expectations, the PTCI subscale was highly associated with the AD and DR subscales. This suggests that the AD and DR subscales measure negative cognitions about the self or that some PTCI items tap into DR and AD. This finding resembles those of Cyr et al. (2022), who found the AD and DR scale to be highly associated with difficulties in maintaining a coherent sense of self. In addition, Karatzias et al. (2016) found the AD and DR scales to be associated with interpersonal problems. Therefore, the DSO scale may measure concepts that are closely related and difficult to separate in the questionnaire. These findings indicate the need to further examine discriminant validity by using multiple comparison measures to assess DSO symptoms.

The ITQ-12 had a good fit and the ITQ-28 had an acceptable fit. Factor loadings were high except for two hyperactivation of AD items of the ITQ-28. More research is needed to identify whether differences in fit can be attributed to these items, specific parts of the model, or minor discrepancies throughout the model. Despite fit differences and consistent with previous literature (Redican et al., 2021), the present CFA results demonstrated optimal fit for two models for both ITQ versions: the first-order model for CPTSD with six correlated factors, and the two-factor second-order model consistent with the *ICD-11* PTSD and CPTSD conceptualization. Unlike previous studies, we did not find a superior fit for the two-factor second-order model in clinical samples which underlines the fact that differences in model fit were minimal (Redican et al., 2021). On the one hand, these findings support the *ICD-11* theoretical framework and the use of the ITQ for diagnostic scoring to categorize patients into probable PTSD and CPTSD. On the other hand, the findings show the importance of individual symptoms and the use of the ITQ as a dimensional measure with higher total scores reflecting more severe symptoms. Moreover, some authors have noted that there is much more variation in symptom profiles of PTSD patients that is not reflected by PTSD and DSO alone (Ford, 2020; Nestgaard Rød & Schmidt, 2021). Therefore, as an alternative explanation to the latent disease model, the similar fit of the one-factor six-factor model could reflect a symptom-based network model of PTSD in which the six symptom clusters interact with each other without an underlying disease entity (Ford, 2020).

In line with Cloitre et al. (2018), the ITQ-12 identified a similar number of patients meeting the criteria for probable PTSD or CPTSD to the ITQ-28 (70.6% vs. 76.4%). In contrast to Cloitre et al. (2018), we found a higher number of patients meeting the criteria for probable CPTSD for the ITQ-12 than the ITQ-28 in our sample (47% vs. 36.3%). The percentage of patients with probable PTSD was 20.4% for the ITQ-12% and 40.1% for the ITQ-28. The discrepancy in rates suggests differences in sensitivity and specificity deriving from the ITQ's diagnostic algorithms. The ITQ-12 DSO scoring method requires at least one symptom above the cutoff score for AD, NSC, and DR, while the ITQ-28 is stricter and requires a summed total score of multiple items above the cutoff score for each of the AD, NSC, and DR subscales (see Measures section). Most patients of the current sample met the criteria for probable CPTSD for the ITQ-12, but more symptoms required by the ITQ-28 in combination with lower symptom endorsement lowered the number included in this group. Our findings challenge the use of the ITQ to provide a probable diagnosis and have implications for clinical practice. Using the ITQ-12 instead of the ITQ-28 may lead to more patients being probably diagnosed with CPTSD than PTSD. In clinical practice, the accuracy of diagnoses can impact the delivery of interventions. By applying too strict criteria some patients may not be able to access beneficial treatments, whereas too loose criteria may risk overtreatment. Our findings raise critical questions about which ITQ yields the most accurate probable diagnoses and show the need to compare the ITQ with a clinical standard. Currently, the development of a clinical interview, the International Trauma Interview (ITI; Cloitre et al., 2018), is in progress. Initial findings of Gelezelyte et al. (2022), showed fair to moderate associations for the kappa agreement in PTSD and CPTSD criteria between the ITQ and ITI. This study revealed that all six PTSD and DSO symptom clusters were endorsed more frequently by the ITQ-12 than the ITI. In turn, patients were more likely to receive the diagnosis CPTSD based on the ITQ-12 (38.3%) than those who would meet criteria based on the ITI (21.1%). These findings emphasize the need for careful decision-making for an ITQ version when defining *ICD-11* PTSD and CPTSD in research and clinical practice. Moreover, our results call for attention to validating and optimizing the ITQ using diagnostic clinical interviews in future studies.

This study has several strengths and is the first to evaluate the psychometric properties of the 28-item and 12-item Dutch ITQ. Both

versions of the ITQ were investigated in a large heterogeneous trauma-exposed clinical sample. We used comparison measures for all six symptom clusters of PTSD and CPTSD to evaluate convergent and discriminant validity. Our findings should be viewed in light of potential limitations. The sample of the ITQ-28 was smaller than the ITQ-12, and one of the four samples did not administer all comparison measures. Based on the collected data, most of the samples only measured the index trauma. Information about the type and number of traumatic events would have helped to compare our findings to other studies and determine generalizability. In contrast to Boeschoten et al. (2018), the CAPS-5 arousal scale showed limited internal consistency in the current sample, indicating increased noise around true values. Therefore, associations between this scale and the ITQ require careful interpretation and replication in other studies.

In conclusion, this study supports the internal consistency and convergent validity of the 28-item and 12-item Dutch versions of the ITQ. The factorial validity was good for the ITQ-12 and acceptable for the ITQ-28. In line with the WHO's overarching aim to define disorders along a core set of symptoms, our results support the use of the ITQ-12 as a brief alternative to the ITQ-28 to quickly assess symptom severity. However, caution should be taken when using these measures to screen for a probable diagnosis of *ICD-11* PTSD and CPTSD. Further comparison with clinical diagnostic interviews for CPTSD is needed to evaluate the diagnostic accuracy of both ITQ versions.

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