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RESEARCH ARTICLE

Evaluation of an adapted version of the International Trauma Questionnaire for use by people with intellectual disabilities

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Abstract

Aims: The International Trauma Questionnaire (ITQ) is a novel assessment instrument that is aligned to the ICD-11 diagnoses of post-traumatic stress disorder (PTSD) and complex PTSD (CPTSD). The purpose of this study was to develop and evaluate an adapted version of the ITQ suitable for use by people with intellectual disabilities.

Methods: The ITQ-ID follows the original ITQ, using wording developed in collaboration with a focus group of people with intellectual disabilities The ITQ-ID was administered to 40 people with intellectual disabilities recruited from learning disability forensic and community settings, alongside a Trauma Information Form and the Impact of Event Scale-Intellectual Disabilities (IES-IDs).

Results: Most participants reported multiple traumatizing events. Around half of the participants met strict criteria for a diagnosis of PTSD, and around three quarters met looser criteria. Depending on definitions, between 66% and 93% of those who met criteria for PTSD also met criteria for a diagnosis of CPTSD. The ITQ-ID showed a single-component structure, with very good-to-excellent internal consistency, excellent test–retest reliability, and evidence of concurrent, discriminant, and content validity.

Significance: The results support the potential of the ITQ-ID for assessment of PTSD and CPTSD in people with intellectual disabilities in both clinical and research contexts and highlight the need for further validation work.

KEYWORDS

intellectual disability, International Trauma Questionnaire, PTSD

Practitioner Points

- The International Trauma Questionnaire (ITQ) is a novel assessment instrument that is aligned to the ICD-11 diagnoses of post-traumatic stress disorder (PTSD) and complex PTSD (CPTSD).
- The ITQ-ID was administered to 40 people with intellectual disabilities recruited from learning disability forensic and community settings.
- Around half of the participants met strict criteria for a diagnosis of PTSD and around three quarters met looser criteria. Depending on definitions, between 66% and 93% of those who met criteria for PTSD also met criteria for a diagnosis of CPTSD.
- The ITQ-ID showed a single-component structure, with very good-to-excellent internal consistency, excellent test–retest reliability and evidence of concurrent, discriminant and content validity.

The results support the potential of the ITQ-ID for assessment of PTSD and CPTSD in people with intellectual disabilities in both clinical and research contexts and highlight the need for further validation work.

INTRODUCTION

Post-traumatic stress disorder (PTSD) is a common mental disorder that may develop following exposure to traumatic events. About 3% of the adult population in England suffer from current PTSD (McManus et al., 2008), and lower IQ is associated with increased rates of PTSD (Brewin et al., 2000). There is extensive evidence that people with intellectual disabilities are more likely to suffer severe and prolonged bullying and/or sexual and other types of abuse (Beadle-Brown et al., 2010; Mevissen & de Jongh, 2010; World Health Organization, 2022) and that adverse life events are traumatizing in this population (Hall et al., 2014; Wigham & Emerson, 2015; Wigham et al., 2011). Exposure to trauma is known to impair executive functioning (De Bellis & Zisk, 2014), and the impact of this loss of cognitive resources may be exacerbated, and risk heightened, for those with a developmental disability whose coping abilities are already impaired (Mevissen & de Jongh, 2010). It is no surprise that rates of PTSD are higher in people with intellectual disabilities than in the general population (Brewin et al., 2000). Research has suggested that PTSD is experienced similarly in the two groups (Mitchell et al., 2006) although more recent work has suggested that people with intellectual disabilities and PTSD may present in different ways to people without ID (Stenfert Kroese et al., 2016).

Post-traumatic stress disorder has simpler and more complex presentations. Simpler forms of PTSD typically follow a single traumatizing event such as a road traffic accident; complex PTSD (CPTSD) typically follows a history of chronic traumatization such as prolonged abuse (Lucian, 2015; The Complex Trauma Taskforce, 2012; World Health Organization, 2022). A study of people with intellectual disabilities presenting for treatment of PTSD reported that almost all had experienced multiple traumatic events in adulthood, and around half reported that they had also experienced traumatic events in childhood (Mason-Roberts et al., 2018). Once traumatized, this group typically show complex presentations of PTSD and display self-harm or other challenging behaviours (McCarthy, 2001; Mevissen & de Jongh, 2010), particularly so for individuals on the autistic spectrum (Rumball, 2018), and in those with physical and psychiatric co-morbidity (Mevissen & de Jongh, 2010).

In addition to the characteristic symptoms of PTSD (re-experiencing, avoidance and sense of threat), complex presentations of PTSD include further symptoms arising from a disturbance of self-organization (DSO), (affective dysregulation, negative self-concept and disturbances in relationships; Lucian, 2015). Clinical trials of treatments for PTSD have typically used the Diagnostic and Statistical Manual of Mental Disorders (DSM) criteria (American Psychiatric Association, 2013). However, the official global and UK

classification system, recognized and used by the NHS, is the International Classification of Disease (ICD). The current version (ICD-11) recognizes CPTSD as a separate diagnosis (World Health Organization, 2022), with additional criteria that can be used to estimate the degree of complexity of the presentation (Bisson et al., 2015; Hyland et al., 2017). There is also some evidence that diagnosis using ICD-11 criteria may be more valid than diagnosis using DSM-5 criteria (Hansen et al., 2015).

There is a growing interest in treating trauma in people with intellectual disabilities (Stenfert Kroese et al., 2016), and a recent review highlighted the need to develop appropriate assessments for this group (McNally et al., 2021). A recent review found two measures designed to assess PTSD in adults with ID, the Lancaster and Northgate Trauma Scale and the Impact of Event Scale-Intellectual Disabilities (Daveney et al., 2019). Both scales have been shown to have good reliability (Hall et al., 2014). The International Trauma Questionnaire (ITQ) is a novel instrument that was specifically developed to assess the ICD-11 diagnoses of PTSD and CPTSD (Cloitre et al., 2018). Because this is a new instrument, a version adapted for use with people with intellectual disabilities has not yet been validated. Therefore, the purpose of the present study was to evaluate the reliability and validity of an adapted version of the ITQ for use with people with intellectual disabilities.

METHODS

Participants

A total of 40 participants (32 male, 8 female), mean (±*SD*) age 30.8 (±9.6) were current or recent clients of intellectual disability (ID) services in six English NHS Trusts. All were known to have been traumatized at some point in their lives: 12 (30%) were currently undergoing therapy for PTSD and 11 (28%) were either on a waiting list for treatment or were being assessed for treatment. Twenty-eight (70%; 27 males; 1 female) were categorized as forensic inpatients, with 12 (30%, 5 males; 7 female) in a community-based care setting. Participants were invited to take part in this study by a therapist or a member of the research team and provided informed consent. The consent process included a verbal account of the study, supplemented by full and easy-read Participant Information Sheets. The study received a favourable ethical opinion from Wales NHS Research Ethics Committee 3 (UK Integrated Research Application System project 260,514) and associated Health Research Authority Approval.

Procedure

All participants first completed the Trauma Information Form (TIF; Hall et al., 2014) to establish their trauma exposure and identify a major traumatic event on which to base their PTSD ratings. They then completed adapted versions of the ITQ and the Impact of Event Scale-Intellectual Disabilities (IES-IDs; Hall et al., 2014), both presented in an interview format, with pictorial and verbal instructions to base their responses on that specific trauma, in order to assess the concurrent validity of the adapted ITQ. We decided to use the IES-ID as it is an established and validated measure of traumatic stress symptoms in people with intellectual disabilities and, although not designed to measure the ICD-11 construct of PTSD and CPTSD, would provide a helpful reference point for the performance of the ITQ-ID. One week later, or at a convenient time beyond one week, 37 participants completed the ITQ for a second time to assess test–retest reliability. Data were collected between May and August 2021. Because of the ongoing COVID-19 pandemic, assessments with three participants were conducted over a remote video platform; the remainder were conducted face-to-face.

Instruments

The TIF (Hall et al., 2014) was developed specifically for use with people with intellectual disabilities and shows pictures illustrating 13 different types of traumatic event with the questions "Has this happened to

you?", "Out of the things that have happened to you, which one has upset you the most?", and "When did this happen?" using the following prompts, "happened since told about the meeting with me," "before last Christmas," "between last Christmas and now" or "when I was a child or teenager." We made use of these options because some people with intellectual disabilities have difficulty with recalling the elapsed length of time that following a trauma The TIF can be downloaded for free from: http://wrap.warwick.ac.uk/132892/ and further information about the development of his measure is available elsewhere (Hall et al., 2014).

The IES-IDs (Hall et al., 2014) is an adaptation of a revised version of the IES (IES-R; Hyer & Brown, 1988) for use with people with intellectual disabilities and has been shown to have excellent internal consistency and test–retest reliability when used with this group (Hall et al., 2014). It comprises 22 questions about symptoms of trauma with subscales measuring intrusion, avoidance and hyperarousal symptom clusters of PTSD, without directly mapping onto the DSM or ICD classification systems. Participants were first asked whether they had felt each symptom over the past week, and if so, to rate the intensity on a 3-point scale (a little bit, in the middle, a lot). This generates a maximum score of 66 for the full scale. The IES-IDs, and the scoring directions, can be downloaded for free from: http://wrap.warwick.ac.uk/132892/

The ITQ-ID follows the same structure as the original ITQ (Hyer & Brown, 1988). The first part comprises six "Has this happened to you in the past month?" questions, of which two questions correspond to each of the three symptoms of PTSD, followed by three questions asking about functional impairment associated with those events. A second part assesses DSO by means of six "How true is this of you?" questions, of which two questions correspond to each of the three symptoms of DSO, followed by three questions asking about functional impairment associated with those events "in the past month." All questions were answered on a 3-point scale (no, sometimes, yes), generating a maximum score of 12 for each of the full PTSD and DSO scales, and a maximum score of four for each of the six sub-scales. A CPTSD score was derived as the sum of PTSD and DSO scores.

Development of the ITQ-ID

To adapt the original ITQ (Hyer & Brown, 1988) and create the ITQ-ID, four adults with mild intellectual disabilities met with two members of the research team to form a consensus group to collaboratively adapt the wording of the original ITQ. Two of these participants also had a diagnosis of autism, and two had significant trauma history. The group started with an explanation of trauma and the symptoms associated with PTSD. The purpose of the ITQ was explained, along with the goals and expectations for the meeting. Following this, each section of the ITQ was presented, and the group were invited to make suggestions as to how the wording could be changed to improve understanding. The research team then presented each item, explained the spirit of the item, and any concepts that were not understood. The criterion for changes to the wording of items was 100% agreement. Working collaboratively, group members were invited to propose changes to the original wording of the items which were discussed and revised repeatedly until consensus was reached. Consensus was determined by voting. The group recommended that the ITQ-ID should be administered as a semi-structured interview, the word trauma should be explained, and examples given, and the Likert scale should be shortened from five to three points. Each question was considered in turn, and the group recommended a series of changes, which included shortening the length of questions and using alternative words. For example, question one was changed from, "Having upsetting dreams that replay part of the experience or are clearly related to the experience" to "Are you having nightmares about the bad things that happened to you?" No revisions were recommended for two items, "I feel like a failure," and "I feel worthless"; all other items were revised. The final revisions as voted for by the group were then reconsidered by practising asking each other the items; no further revisions were recommended.

The ITQ-ID is shown in Appendix A.

Diagnosis of PTSD and CPTSD

The original ITQ algorithms were used to assess whether participants met criteria for a diagnosis of PTSD or CPTSD. A diagnosis of PTSD requires the endorsement of one of two symptoms from each of the symptom clusters of (1) reexperiencing in the here and now, (2) avoidance, and (3) sense of current threat, plus endorsement of at least one indicator of functional impairment associated with these symptoms (Cloitre et al., 2018). The diagnosis of CPTSD requires the endorsement of one of two symptoms from each of the six PTSD and DSO clusters, plus endorsement of functional impairment associated with these symptoms (Cloitre et al., 2018, 2019). As the response scale on the ITQ-ID was changed from a 5-point scale to a 3-point scale, we defined endorsement of a symptom or functional impairment item as a score ≥1 ("sometimes" happened), as opposed to a score ≥2 ("moderately" bothered).

We also looked at the effect on diagnosis of partial PTSD and DSO/CPTSD, using a weaker criterion, which, instead of requiring a positive score on each of the three symptom clusters plus functional impairment, allowed either symptoms from two separate clusters plus functional impairment, or symptoms from all three clusters but with no declared functional impairment.

Statistical analysis

Across all 40 participants, a total of six questions were unanswered. For the IES-IDs, this was one participant who did not answer item 15, another who did not answer item 9, another who did not answer item 10, and a final participant who did not answer items 6 and 8. For the ITQ-ID, one participant did not answer item 6. For analysis purposes, these were allocated a score of zero. Data were analysed using SPSS 28. Reliability was assessed by Cronbach's alpha for consistency and intra-class correlation (ICC) for test–retest reliability. Values of alpha >.8 and .9 are considered to represent "very good" and "excellent" consistency (Cortina, 1993); an ICC >.75 is considered to represent "excellent" test–retest reliability (Cicchetti, 1994). Principal component analysis with varimax rotation was also conducted, using the three PTSD and DSO subscale scores and the IES-IDs subscales rather than individual items. The reason for this was to reduce the number of items included within our analysis due to our sample size, and it must be recognized that this analysis is tentative. For all analysis, the Kaiser–Meyer–Olkin (KMO) Measure of Sampling Adequacy (MSA) was >.65 overall, and >.60 for individual subscales. Correlations between all items and subscales can be found within Supporting Information. Concurrent validity was assessed by the parametric product–moment correlation between ITQ-ID and IES-IDs scores. Discriminant validity was assessed from a comparison of participants who had and had not been identified as needing PTSD treatment, using a chi-squared test.

RESULTS

Trauma histories

Participants reported a mean (±SD) of 5.5 (±2.5) traumatic events (range, 1–11). The most frequently reported traumatic events were bereavement (n = 34) and being bullied (n = 33) or beaten up (n = 30). (Bullying falls outside traditional accounts of trauma but was always reported in the presence of at least two other traumatic events.) Other frequently reported events were imprisonment (n = 21), sexual assault (n = 20), illness (n = 18), assault with a weapon (n = 17) and car crash (n = 17). The frequencies of other events were in single figures. The events reported as most upsetting were bereavement (n = 12) and sexual assault (n = 12).

The index event happened relatively recently ("between last Christmas and now") for 4 participants (10%), but more distantly for most ("before last Christmas," n = 17; "when I was a child," n = 19).

Forensic inpatient participants reported significantly more traumatic experiences than community-based participants, mean: 6.04 vs. 4.25, $t(38) = 2.17$, $p < .05$.

Diagnosis

Mean (±*SD*) scores were 7.35 (±4.37) and 6.85 (±4.03) on the ITQ PTSD and DSO scales, respectively, and 36.87 (±18.74) on the IES-IDs. Of the 40 participants, 19 (47.5%) met strict diagnostic criteria for PTSD, of whom 15 (79%) also met strict diagnostic criteria for CPTSD.

Community-based participants were slightly more likely to meet diagnostic criteria for PTSD: 7/12 (58%) versus 12/28 (43%). The community-based participants also reported slightly higher mean scores on the ITQ-ID PTSD scale (8.08 vs. 7.04) and the IES-IDs (39.83 vs. 35.61).

Using the looser definitions, 28 of the 40 participants (70%) met criteria for partial PTSD. Of these 28, 19 (66%) also met criteria for partial CPTSD using the strict definition of DSO, and 27 (96%) met criteria for partial CPTSD using a looser definition of DSO.

There was a strong correlation between PTSD and DSO scores, $r(38) = .794$, $p < .001$. As would be expected, considering that these scores are summed to create the CPTSD score, both PTSD and DSO scores were strongly correlated with the total CPTSD score, $r(38) = .942$, $r(38) = .940$, respectively. PTSD, DSO and CPTSD scores were not, however, significantly correlated with the number of traumatic events reported, $r(38) = .291, .196, .259$, respectively, $p > .05$.

Reliability

The ITQ-ID showed very good consistency for the 3-subscale PTSD and DSO scales (alpha = .827 and .812, respectively), and excellent consistency for the 6-subscale CPTSD scale (alpha = .896). Consistency was even higher when entering the 12 individual items (alpha = .891, .870 and .929, for PTSD, DSO and CPTSD, respectively). For each of the three scales, principal component analysis confirmed a single-component structure, accounting for 74.5%, 72.7% and 66.0% of the variances, respectively, with item loadings between .741 and .906 (Table 1).

The ITQ-ID showed excellent test–retest reliability for the PTSD scale (ICC = .861), and near-perfect test–retest reliability for the DSO and CPTSD scales (ICC = .932 and .943, respectively). Test–retest reliability was between .750 and .941 for the six sub-scales (Table 1).

Validity

Concurrent validity was demonstrated by a strong correlation between PTSD scores as measured by the ITQ-ID and the IES-IDs ($r = .844$, $p < .001$). There were also strong correlations between the ITQ-ID re-experiencing and IES-IDs Intrusion scales ($r = .824$, $p < .001$) and the ITQ-ID Threat and IES-IDs Hyperarousal subscales ($r = .754$, $p < .001$). The correlation between the ITQ-ID and IES-IDs avoidance scales was somewhat lower ($r = .472$, $p < .002$). We were unable to determine a reason for this discrepancy. Correlations between ITQ-ID and IES-IDs subscales are found in Table 2. Correlations between individual items are found within Supporting Information.

The ITQ-ID was also able to discriminate between patients who had been identified as needing PTSD treatment and those who had not. Of participants in treatment for PTSD or being assessed for treatment, 14/23 (61%) met full criteria for PTSD and 19/23 (91%) met partial criteria, compared with only 5/17 (29%) and 9/17 (53%) of the participants who had not been identified as needing PTSD treatment [chi-squared = 3.88 (full) and 4.10 (partial), $p < .05$]. These two groups also differed significantly with respect to total scores on the PTSD and CPTSD scales [respectively, $t(38) = 2.96$, $p < .01$ and 2.70, $p < .02$].

TABLE 1 Principal components analysis and test–retest reliability of the ITQ-ID.

	PTSD	DSO	CPTSD	IES-IDs	Test–retest reliability
% Variance explained	74.5	72.7	66.0	83.3	
ITQ-PTSD			.82		
Re-experiencing (Items 1 & 2)	.85		.74		.86
Avoidance (Items 3 & 4)	.83		.89		.82
Threat (Items 5 & 6)	.91		.77		.75
ITQ-DSO					
Affective dysregulation (Items 1 & 2)		.80	.77		.78
Negative self-concept (Items 3 & 4)		.87	.84		.94
Disturbed Relationships (Items 5 & 6)		.89	.81		.83
IES-IDs					
Avoidance				.85	
Intrusion				.96	
Hyperarousal				.92	

TABLE 2 Correlations between the ITQ-ID and IES-IDs.

Variable	PTSD	DSO	CPTSD	Avoidance	Intrusion
DSO	.794***				
CPTSD	.942***	.940***			
Avoidance	.645***	.599***	.677***		
Intrusion	.843***	.738***	.833***	.727***	
Hyperarousal	.820***	.711***	.798***	.624***	.889***

Note: PTSD, DSO and CPSD are scales within the ITQ-ID, while Avoidance, Intrusion and Hyperarousal are subscales within the IES-IDs. Values are Pearson's *r*. ***$p < .001$.

Comparison with the IES-IDs

The ITQ-ID has both diagnostic and mensural utility for both PTSD and CPTSD, in contrast to the IES-IDs, which provides no diagnostic criteria and does not measure the additional symptoms of CPTSD. However, on a range of psychometric comparisons, the IES-IDs consistently performed slightly better than the ITQ-ID. For example, the consistency of the IES-IDs was marginally higher than that of the ITQ-ID, with a single component structure accounting for a greater proportion of the variance and with slightly higher item loadings (Table 3).

Both questionnaires were significantly skewed towards higher values and consequently failed tests for normality. The departure from normality was greater for the ITQ-ID, where the modal score, accounting for 25% of cases, was the maximum score of 12 (seen in 42% of community-based participants and 18% of forensic participants). In contrast, 35% of scores on the IES-IDs were higher than the mode.

Using both parametric and non-parametric comparisons in light of the departures from normality, the IES-IDs was slightly more sensitive in relation to both the correlation with the number of traumata reported and the separation between participants assessed and not assessed for PTSD.

DISCUSSION

These results appear to demonstrate that both the ITQ-ID and the IES-IDs are robust and reliable instruments. The high completion rate indicates that participants found the adapted instruments acceptable. The ITQ-ID had very good-to-excellent internal consistency and test–retest reliability, with single-factor

TABLE 3 Comparison of ITQ-ID and IES-IDs.

	ITQ-ID	IES-IDs
Diagnostics		
Diagnosis of PTSD	Yes	No
Measurement of PTSD	Yes	Yes
Diagnosis of CPTSD	Yes	No
Measurement of CPTSD	Yes	No
Psychometrics		
Internal consistency (Cronbach's alpha)		
Three subscales	.827	.888
All individual items	.896	.939
Principal components analysis		
Variance explained	74.5%	83.3%
Item loadings	.74–.91	.85–.96
Departs from normality?		
Kolmogorov–Smirnov	.203, $p < .001$	.204, $p < .001$
Shapiro–Wilk	.841, $p < .001$	.905, $p < .003$
Correlation with no. traumata reported		
Pearson	.291, $p = .069$	.298, $p = .062$
Spearman	.178, $p = .272$	.265, $p = .098$
Needing vs. not needing treatment		
t-test	$t = 2.96$, $p < .01$	$t = 3.55$, $p < .001$
Mann–Whitney	$U = 123$, $p = .05$	$U = 83$, $p < .001$

components for both PTSD and CPTSD scales. The psychometric properties of the ITQ-ID were similar for PTSD and CPTSD, and comparable to those of the IES-IDs, if slightly smaller.

The absence of a correlation between PTSD, DSO and CPTSD and number of traumatic events was not expected but may be due to the high number and severity of traumatic events experienced by all participants. Further research with a less traumatized cohort may provide different results. The skewed distribution of ITQ-ID scores has implications for the statistical analysis of ITQ-ID data, albeit that very similar results were obtained using parametric and non-parametric statistical tests. The distribution of IES-IDs scores was less skewed, which may reflect the fact that the IES-IDs explores a wider range of symptoms, making it more likely that less-than-maximal scores might be reported on some of them. A broader distribution of scores could also be relevant to the marginal superiority of the IES-IDs on psychometric measures, which might also reflect that the two instruments probe over different time scales (last month for the ITQ-ID vs. last week for the IES-IDs). However, we emphasize that the differences between the two instruments are indeed very marginal.

It is important to recognize that the diagnostic algorithms used for the original ITQ for adults may not apply to the ITQ-ID. That said, it seems reasonable to use the same algorithms in the absence of a comprehensive clinical assessment of all participants, using information from various sources, to establish gold standard diagnoses against which different algorithms could be tested. Further work is required to determine if the same algorithms should be used and the impact on these of some of the differences between the ITQ and the ITQ-ID, for example, whether an individual has had symptoms (ITQ-ID) rather than how much they have been bothered by them. As with any questionnaire, it is important to emphasize that a clinical diagnosis cannot be made on the basis of administration of a questionnaire alone. It also seems reasonable to adhere to the ICD-11 criteria for PTSD and CPTSD although we acknowledge that, ultimately, a different construct may be more valid for people with intellectual disabilities and PTSD, given the possible differences in typical presentations considered in the introduction.

The IES has been considered as one of the primary instruments for assessing PTSD for research purposes. Hence, the strong correlation between the ITQ-ID and the IES-IDs supports the concurrent validity of the ITQ-ID. A strong correlation was seen not only for the total scores on these two instruments but also for two of their three sub-scales. Curiously, and unaccountably, the avoidance sub-scales had a much lower correlation, for reasons that we cannot explain. The ability of the ITQ-ID to separate those participants who had been identified as needing PTSD treatment from those who had not provides evidence of discriminant validity. Beyond that, the ITQ has solid content validity, insofar as every item in the PTSD and DSO scales maps precisely onto a symptom of PTSD or CPTSD as defined in ICD-11.

Additionally, the inclusion of functional impairment items in relation to both PTSD and DSO means that the ITQ-ID can be used not only to measure the severity of both PTSD and CPTSD but also to indicate likely diagnosis. It accomplishes these several functions with a total of 18 items, 12 of which measure symptom severity, relative to the 22 items in the IES-IDs that measure only severity of traumatic stress symptoms.

In addition to several strengths, it is important to recognize a number of limitations to this study and the need for further research to determine the validity and reliability of the ITQ-ID. The sample size was relatively small, and replication with a larger sample is required. The participants in this study were not a typical sample of people with intellectual disabilities because the procedure required that all participants were known to have suffered trauma. Most reported experiencing multiple traumatic events. Given the preponderance of forensic patients in our sample, more research is needed to determine the utility of the ITQ-ID in community and less complex treatment-seeking populations of people with intellectual disabilities. This would also help to determine if the ITQ-ID can effectively differentiate between PTSD and CPTSD. The sample in this study was drawn largely from inpatient secure services, perhaps explaining the high incidence of imprisonment as one of the traumata more frequently reported. Around half of these traumatized participants met "strict" ICD-11 criteria for PTSD and around two-thirds met looser criteria. A striking finding was that, on either set of criteria, the overwhelming majority of participants met diagnostic criteria for CPTSD rather than simple PTSD. However, this cannot be explained by the high proportion of inpatients in the sample, because the prevalence of CPTSD was actually higher among the community-based participants. This was not expected, and, indeed, the results from this small sample suggest that CPTSD may be the predominant presentation of PTSD in people with intellectual disabilities.

A similar pattern has been found in research using the ITQ to determine prevalence rates of PTSD and CPTSD in the general population, with studies finding much greater rates of CPTSD than PTSD in treatment-seeking adult samples (Cloitre et al., 2018). The differences are less marked, with some contradictory findings, in population-representative adult samples. CPTSD has been found to be more prevalent than PTSD, albeit to a lesser degree than in clinical samples, in the UK (Karatzias et al., 2019) and the USA (Cloitre et al., 2019). A population study in Israel, however, found PTSD to be over three times more prevalent than CPTSD (Ben-Ezra et al., 2018).

There are a number of statistical methodological aspects that are important to note. There is debate around how best to report correlations for 2 item subscale scores, and it has been argued that Cronbach's alphas may not be the best way to do this (Eisinga et al., 2013). The fact that 25% of the scores for the ITQ-ID were at the maximum for the scale may have impacted the results but they appeared similar when both parametric and non-parametric tests were used. We did not assess for co-occurring mental health difficulties and, therefore, did not evaluate discriminant/divergent validity against other conditions. Further, it is important to note that we made use of small sample which meant that we undertook a principal component analysis based upon the subscales of the instruments, rather than the actual items. While the results are promising, due to the limitations further analysis should be completed using individual items with a much larger sample.

Given the high prevalence of CPTSD among people with intellectual disabilities, the ITQ-ID, which has both diagnostic and mensural utility for both PTSD and CPTSD, is clearly preferable to the IES-IDs if measurement of the exact symptoms of ICD-11 PTSD and CPTSD is desired. Both instruments appear to be suitable for the measurement of the widely recognized re-experiencing, avoidance and hyperarousal symptoms of PTSD. The IES-IDs appears to outperform the ITQ-ID, albeit by small amounts, on all of the psychometric comparisons that we were able to make (Table 3). Consequently, the IES-IDs may be preferable for research purposes in contexts where the primary focus is on PTSD. The ITQ-ID would

be preferable in research contexts where both conditions are of interest and an indication of diagnosis is required. However, we note that the high proportion of scores at the maximum of the ITQ-ID PTSD scale creates a risk of ceiling effects, where a decrease in intense PTSD severity may not be detected because even the reduced level of distress may still be off the scale.

This study suggests that the ITQ-ID has the potential to be a reliable and valid measure of ICD-11 PTSD and CPTSD in people with ID. It should be seen as a first step to further research with larger samples and people representative of everyone with ID rather than those with more complex presentations. There is also a need for further work to consider assessment of people with intellectual disabilities who are without expressive or receptive communication skills and may be unable to describe an index trauma event, including those who have moderate to severe learning disabilities. Finally, the fact that CPTSD appeared to be much more common than PTSD, among the people with intellectual disabilities included in this study, suggests a need to develop more effective interventions for people with intellectual disabilities and CPTSD.

AUTHOR CONTRIBUTIONS

Peter E. Langdon: Conceptualization; funding acquisition; methodology; supervision; writing – review and editing. **Jonathan I. Bisson:** Conceptualization; funding acquisition; methodology; writing – review and editing. **Gemma Rogers:** Investigation; writing – review and editing. **Sophie Swain:** Investigation; writing – review and editing. **Steve Hiles:** Data curation; project administration; software; writing – review and editing. **Alan Watkins:** Conceptualization; data curation; formal analysis; funding acquisition; methodology; writing – review and editing. **Paul Willner:** Conceptualization; formal analysis; funding acquisition; investigation; methodology; project administration; writing – original draft.

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CONFLICT OF INTEREST STATEMENT

The authors declare that they have no conflicts of interest.

DATA AVAILABILITY STATEMENT

The anonymised data that support the findings of this study are available on request from the corresponding author, [PW]. Data are available with the permission of Birmingham Community Healthcare NHS Foundation Trust.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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APPENDIX A

International Trauma Questionnaire-Intellectual Disabilities

Instructions: Please identify the experience that troubles the person most by using the Trauma Information Form, administered as a semi-structured interview. Refer to the pictorial prompt sheet as required.

Record the trauma here: _____

When did the experience occur? (circle one)

a) less than 6 months ago
b) 6–12 months ago
c) 1–5 years ago
d) 5–10 years ago
e) 10–20 years ago
f) more than 20 years ago

"I'm going to read some problems that people who have had trauma struggle with; can you tell me whether you have had any of these problems in the last month by saying yes, sometimes, or no when I ask the question?"	**No**	**Sometimes**	**Yes**
1. Are you having nightmares about the bad things that happened to you?	0	1	2
2. Are you having memories about the bad things which pop into your head and scare you?	0	1	2
3. Have you tried not to think about the bad things?	0	1	2
4. Have you tried not to go to places that remind you of the bad things that happened?	0	1	2
5. Have you felt really scared a lot of the time?	0	1	2
6. Have you felt really jumpy?	0	1	2
"In the last month, have the things we just talked about:"			
7. Meant that you fell out with your friends?	0	1	2
8. Meant that you could not go to work or do your activities?	0	1	2
9. Meant that you could not do the things you normally do like school, hobbies, or other things?	0	1	2
"I am going to read some more problems that people who have had trauma struggle with; can you tell me whether you generally feel this way by saying yes, sometimes, or no when I ask the question?", "How true is this of you?"	**No**	**Sometimes**	**Yes**
1. When I am upset, it takes me a long time to calm down	0	1	2
2. I feel sad	0	1	2
3. I feel like a failure	0	1	2
4. I feel worthless	0	1	2
5. I feel like I have no friends	0	1	2
6. I find it hard to be around people	0	1	2
"In the past month, have the bad feelings and thoughts we just talked about:"	**No**	**Sometimes**	**Yes**
1. Meant that you fell out with your friends?	0	1	2
2. Meant that you could not do your work or your activities?	0	1	2
3. Meant that you could not do the things you normally do like school, hobbies, or other things?	0	1	2