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Reliability and Validity of the Diagnostic Interview Trauma and Stressors- Intellectual Disability in Adults with Mild Intellectual Disabilities or Borderline Intellectual Functioning

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ABSTRACT

Objective: To assess the reliability and construct validity of the Diagnostic Interview Trauma and Stressors- Intellectual Disability – Adult version (DITS-ID-adults) in adults with mild intellectual disabilities or borderline intellectual functioning (MID-BIF).

Method: The DITS-ID-adults, Brief Symptom Inventory–18 (BSI–18), and Impact of Event Scale-Intellectual Disability (IES – ID) were administered to 97 participants with MID-BIF who lived in supported housing. The Anxiety, Depression, and Mood Scale (ADESS) and Behavior Problems Inventory (BPI) were administered to their relatives.

Results: The interrater reliability of the DITS-ID-adults was good to excellent. The construct validity of the DITS-ID-adults was good, based on positive correlations between the BSI–18, IES-ID, ADESS and DITS-ID-adults, and mainly positive correlations between the BPI and DITS-ID-adults ($r = .21$ to $r = .75$). Reporting potentially traumatic events listed under the A criterium for PTSD was associated with fulfilling PTSD symptom criteria. In this sample, 58% were classified with post-traumatic stress disorder (PTSD) according to the DITS-ID-adults, while PTSD diagnosis on file was low (7%).

Conclusion: The present findings support the DITS-ID-adults as a reliable and valid basis for classifying PTSD in individuals with MID-BIF.

KEYWORDS

Post-traumatic stress disorder; trauma; intellectual disabilities; borderline intellectual functioning; DITS-ID; psychometric characteristics

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INTRODUCTION

According to the DSM-5-TR, PTSD is characterized by symptoms of intrusions, avoidance, negative alterations in cognition and mood, and alterations in arousal and reactivity following exposure to a potentially traumatic event. Such an event is defined under the A criterion when an individual has directly experienced, witnessed or learned that a friend or relative has been exposed to actual or threatened death, serious injury, or sexual violence. PTSD symptoms last for at least one month and cause distress in social or occupational functioning or functioning in other important areas (American Psychiatric Association, 2022). Individuals with mild intellectual disability or borderline intellectual functioning (MID-BIF; IQ 50–85) may be at a relatively higher risk of developing post-traumatic stress disorder (PTSD) than people without an intellectual disability (ID; de Vogel & Didden, 2022; Mason-Roberts et al., 2018; Mevissen & de Jongh, 2010; Mevissen et al., 2016; Nieuwenhuis et al., 2019). While PTSD symptoms are associated with a range of impairments and mental health conditions, studies have found long delays from onset to treatment if diagnosis and treatment are sought (Goldstein et al., 2016; Pietrzak et al., 2012).

PTSD frequently remains unnoticed in individuals with MID-BIF (Nieuwenhuis et al., 2019), although PTSD symptoms manifest similarly in persons with MID-BIF as in people without ID (Hoogstad et al., 2023; Mevissen et al., 2016, 2020). In a cross-sectional study involving 570 severely mentally ill participants to explore the presence of MID-BIF based on a screener and PTSD, among the group with MID-BIF, there were much higher rates of suspected PTSD (48%) than the number of PTSD diagnoses (8%) already known in this sample before participating in the study (Nieuwenhuis et al., 2019). A possible explanation for the difficulty in recognizing PTSD in individuals with MID-BIF is that PTSD symptoms are attributed to the characteristics of MID-BIF or another mental disorder, a phenomenon called diagnostic overshadowing (Jopp & Keys, 2001). PTSD symptoms show overlap with symptoms of anxiety and depressive disorders (Kildahl & Helverschou, 2023; Kildahl et al., 2020a, 2020b), problems that occur at least as often among people with an intellectual disability as in the general population and for which recognition has been increasing (Emerson et al., 2023). As a result, PTSD symptoms may be wrongly attributed to these disorders. The diagnosis of PTSD requires more than observing visible behavior. A PTSD diagnosis requires knowledge of what traumatic events a person may have experienced and could be linked to the emergence of symptoms (American Psychiatric Association [APA], 2022). Undetected and untreated PTSD in individuals in the general population has been found to be associated with an elevated risk of other conditions, such as substance abuse (Goldstein et al., 2016), revictimization (Graham-Kevan et al., 2015), delinquency

(Marsiglio et al., 2014), and decreased physical health (Pietrzak et al., 2012). Therefore, a timely and adequate diagnosis of PTSD is important in patients with MID-BIF (McNally et al., 2021).

A growing body of research has highlighted the need to assess individuals with ID who have experienced psychological trauma. Although PTSD symptoms manifest in people with MID-BIF in the same way as in people without ID (Hoogstad et al., 2023; Mevissen et al., 2016, 2020), it requires different diagnostic tools because questionnaires developed to assess PTSD in people in the general population are often too difficult to complete for people with MID-BIF due to the lack of simplified language and supporting visualization (Kooijmans et al., 2022). A review by Daveney et al. (2019) revealed that the adult version of the Diagnostic Interview Trauma and Stressors – Intellectual Disability (DITS-ID-adults; Mevissen et al., 2018) is the only instrument to establish a PTSD diagnosis in adults with MID-BIF according to the DSM-5 criteria (American Psychiatric Association [APA], 2013). The DITS-ID-adults is a clinical interview (taking approximately 45–60 minutes) and has been validated in a sample of 106 Dutch adults with MID-BIF, living in supported housing or receiving ambulatory care from an ID care service (Mevissen et al., 2020). The DITS-ID-adults proved to be client-friendly, given that all participants in the study by Mevissen et al. (2020) could complete the interview, and emotional dysregulation did not occur. The interrater reliability of the DITS-ID-adults was good, and its construct validity was supported by significant positive associations between the scores on the Anxiety, Depression, and Mood Scale (ADESS) and Impact of Event Scale – Intellectual Disabilities (IES-ID). However, there are a few gaps in the study by Mevissen et al. (2020) that need to be noted. First, anxiety and depression symptoms were measured using a proxy questionnaire, whereas feelings of anxiety and depression due to their private nature may be missed by others. Second, behavioral problems were not assessed, while PTSD symptoms and behavioral problems are interrelated (Kildahl & Helverschou, 2023; Kildahl et al., 2020; Mason-Roberts et al., 2018; McNally et al., 2021; Rittmannsberger et al., 2020).

The purpose of the present study was to assess the interrater reliability and construct validity of the DITS-ID-adults in adults with MID-BIF. This study replicated and extended the study by Mevissen et al. (2020) by examining the construct validity of the DITS-ID-adults. We used the self-reported Brief Symptom Inventory-18 (BSI-18) to measure symptoms of anxiety and depression, and the Behavior Problems Inventory (BPI) to measure behavioral problems. In addition, we used the IES-ID and ADESS, which were also used in Mevissen et al. (2020) study. We hypothesized that there would be positive associations between the number of symptoms on the DITS-ID-adult and the presence or absence of a PTSD classification on one hand, and

questionnaire scores on the other (i.e., ADESS, BSI-18, BPI, and IES-ID). In addition, we examined the association between reporting an event that met Criterion A for PTSD and meeting the PTSD symptom criteria (both measured with the DITS-ID-adults). We hypothesized that reporting a Criterion A event would be associated with meeting PTSD symptom criteria and that individuals meeting PTSD symptom criteria would report more Criterion A events than those not meeting PTSD symptom criteria.

MATERIALS AND METHODS

Participants and Setting

Individuals with a mild intellectual disability or borderline intellectual functioning (MID-BIF) who were all living in supported housing off two ID care services in the Netherlands (i.e., 's Heeren Loo and Trajectum) were informed about the aims of the study by their psychologist. Participation was voluntary and individuals interested in participating received an information letter. The inclusion criteria were that the participants were at least 18 years old, had a diagnosis of MID or BIF, and had sufficient Dutch language skills. Suicidality, drug use, and serious sedating medications (e.g., anxiolytics) were used as exclusion criteria. The study protocol and detailed procedures were approved by the Central Committee Involving Human Subjects of the Radboud University Medical Centre (reference number: 2020-6967 – NL75909.091.20). After the study procedures had been fully explained and after at least a week of consideration, 100 hundred participants gave their written informed consent to participate in the study, to record the interview on video, and to process the data anonymously. A legal representative also signed up for clients who were not fully mentally capable of providing consent to decide whether they wanted to participate in the study or not.

Of the 100 participants who initially participated in this study, 97 completed the interview with DITS-ID-adults. Only three participants (3%) terminated the interview early; one participant did not understand the questions in the event section, while two participants expressed that they felt sad at the event section and, therefore, did not want to continue. Eventually, the sample consisted of 97 adults (55 women and 42 men) with MID-BIF. Their mean age was 32 years (range:18-73; $SD = 14.07$). IQ scores were available for 92 participants; for 5 participants IQ score in their client file were lacking, but their file specified that they had MID. The mean IQ was 68 (range:50-85; $SD = 9.39$); 52 participants had MID (54%), and 45 participants had BIF (46%). Of the 97 participants, 37 (38%) had at least one additional DSM-5 diagnosis in their medical record. Twenty participants (21%) were diagnosed with autism spectrum disorder, four (4%) with mood disorder, two (2%) with anxiety disorder, three (3%) with personality disorder, eleven (11%) with attention

deficit hyperactivity disorder (ADHD) and seven (7%) participants had been diagnosed with PTSD prior to the study.

One-third (34%) indicated that they had received trauma treatment before. To examine the association between reporting a PTSD criterion A event and fulfilling the PTSD symptom criteria, only data from participants who had not received trauma treatment ($N = 64$) were used. This is because trauma treatment interferes with the association between reporting a Criterion A event and PTSD symptoms, and one of the aims of trauma treatment is to reduce PTSD symptoms. Data from all participants ($N = 97$) were used to examine the construct validity and interrater reliability.

Instruments

Diagnostic Interview Trauma and Stressors – Intellectual Disability – Adult Version (DITS-ID-adults)

The DITS-ID-adults (Mevisen et al., 2018) is a Dutch clinical interview (approximately 60 minutes) by which PTSD can be classified in adults with MID-BIF based on the DSM-5 criteria for PTSD. The DITS-ID-adults protocol systematically examines criteria A, B, C, D, E, F, G, and H to establish whether an individual satisfies the complete set of criteria required for the classification of PTSD. The DITS-ID-adults uses simplified language and visual cues and consists of four sections. The first section consists of 31 questions about potentially traumatic and stressful events. If the participant answers “Yes” the interviewer asks the following question: “What happened?,” after which s/he places the event on a timeline. Based on the participant’s answer, it is determined whether or not it is an A-criterion event. An example of a question is, “Have you ever been bullied?” If someone answers that he/she has only been bullied with unpleasant words, it is not scored as an A-criterion event; if someone says that the bullying turned serious harm was inflicted, then the answer is scored as an A-criterion. The symptom section includes 39 PTSD symptom questions, of which 32 corresponding to the DSM-5-TR symptom list (PTSD criteria B, C, D, and E). These are questions to which the participant can answer “Yes” or “No.” The interviewer uses the answer category “Other” if the participant answers with: “I don’t know” or “I’ve always had that” or gives an unclear answer. In addition, four other potentially atypical symptoms (e.g., “Do you have to do some things again and again or always in the same order?”) are asked. Subsequently, a thermometer card (a visual cue) was used to support the person to indicate the subjective level of daily life impairment. This scale ranges from 0 (totally not) to 8 (very much), with a score of 4 or higher meeting the G criterion. Finally, if the interference score is four or higher, the participant is asked when the symptoms started, from what age, or after which event. This will help confirm whether

symptoms have been present for more than a month, which is necessary to classify PTSD (criterion F). Finally, the interviewer assesses whether the symptoms are not explained by medication, drug use, other medical conditions or somatic disorders (criterion H).

Brief Symptom Inventory –18, Revised Dutch Version (BSI–18)

The BSI–18 (de Beurs, 1993) is a multidimensional (Dutch) instrument that measures self-reported psychological distress and psychopathological symptoms in adults aged 18 and over; it measures the most common psychopathological symptoms. The questionnaire consists of 18 questions scored on a 5-point Likert scale of distress (0 = not at all, 1 = a little bit, 2 = moderately, 3 = quite a bit, 4 = extremely). It takes approximately five minutes to complete the questionnaire. The BSI yields a total score (eighteen items) and consists of the following three primary symptom dimensions: “Somatization” (six items), “Anxiety” (six items) and “Depression” (six items). The BSI–18 has demonstrated sufficient to good psychometric properties, specifically internal consistency and discriminant validity, for (Dutch) individuals with MID-BIF (Wieland et al., 2012). In our study, Cronbach’s alpha for the BSI-18 total score was .95, for “Somatization” .88, for “Depression” .88 and for “Anxiety” .89, indicating good to excellent internal consistency.

Behavior Problems Inventory (BPI)

The BPI-01 (Rojahn et al., 2001) is an instrument used for the assessment of self-injury, stereotyped behavior, and aggression/destruction in individuals with ID. In our study, we used the Dutch version of the BPI. This instrument which is completed by proxy indexes the frequency and severity of problem behaviors and consists of three subscales: “Self-injurious behavior” (eight items), “Aggressive/destructive behavior” (ten items), and “Stereotyped behavior” (twelve items). The frequency of the problem behavior is measured on a 5-point Likert scale (0 = never, 1 = monthly, 2 = weekly, 3 = daily, and 4 = hourly). The respondent’s subjective judgment of the severity of the problem is measured on a 3-point Likert scale (1 = mild problem, 2 = moderate problem, 3 = severe problem). A mean score for both frequency and severity was calculated for each subscale and for problem behavior overall. The Dutch version of the BPI has been found to show adequate to good psychometric properties, including interrater, intrarater, internal consistency and good convergent validity, compared with the Aberrant Behavior Checklist (Dumont et al., 2014). In our study, Cronbach’s alpha for the BPI total score was .86 (frequency) and .88 (severity), for “Self-injury behavior” .75 (frequency) and .77 (severity), for “Aggressive/destructive behavior” .81 (frequency) and .89 (severity) and for “Stereotyped behavior” .88 (frequency) and .90 (severity), indicating acceptable to excellent internal consistency.

Impact of Event Scale-Intellectual Disability, (IES – ID)

The IES – ID (Hall et al., 2014) is a self-report screening questionnaire indexing subjective stress caused by potentially traumatic events. In our study, we used the Dutch translation of the IES – ID. The IES – ID corresponds to the three DSM-IV-TR PTSD symptom categories: avoidance, intrusion, and hyperarousal. The instrument consists of 22 questions scored on a 3-point Likert scale (1 = a little bit, 2 = in the middle, 3 = a lot). No research has been done on the psychometric characteristics of the Dutch version of the IES-ID. The English version of the IES-ID has been found to have good to excellent psychometric properties, including high internal consistency and test-retest reliability, among individuals with MID-BIF (Hall et al., 2014). In the present study, Cronbach's alpha for the IES-ID total score was .94, which indicates excellent internal consistency.

Anxiety, Depression, and Mood Scale (ADESS)

The ADESS (in Dutch: Angst Depressie en Stemmingsschaal; Anxiety, Depression and Mood Scale [ADAMS]; Hermans et al., 2008) is a Dutch questionnaire for measuring symptoms of anxiety and depression in people with ID according to the DSM-5. This was accomplished by proxy informants. The ADESS consists of four subscales: “Depressive mood” (thirteen items), “Fear and tension” (seven items), “Social avoidance” (seven items) and “Other problems” (eleven items). Each item of the ADESS is scored on a 4-point Likert scale (0 = never/no problem, 1 = occasional/minor problem, 2 = regular-moderate problem, 3 = frequent/severe problem). The ADESS has sufficient to good psychometric properties (i.e., internal consistency, test-retest reliability, and interrater reliability). The ADESS showed sufficiently reliability as a screen for anxiety and depression against the PAS-ADD Interview with (Dutch) adults with ID (sensitivity between 73% and 88% and specificity range from 71% to 80%; Hamers et al., 2018; Hermans et al., 2012). In the present study, Cronbach's alpha for the ADESS total score was .91, for “Depressive mood” .87, for “Anxiety and stress” .74, for “Social avoidance” .84 and for “Other problems” .73, indicating acceptable to excellent internal consistency.

Procedure

The data were collected between November 2021 and June 2022. Trained master students of Radboud University and Vrije Universiteit Amsterdam and the first author conducted the DITS-ID-adults, then the BSI and finally the IES-ID were administered to clients. Interviews were conducted in a quiet room at the facility. All DITS-ID-adults' interviews were recorded on video to assess interrater reliability. Three participants did not complete the DITS-ID-adults (see Participants and Setting). In addition, the BPI and ADESS were sent by postal mail or e-mail to a person who knew the participant well. Both,

the BPI and ADESS were completed by the same person for each participant: a professional caregiver for 83 participants and by a parent or husband for 11 participants.

We randomly selected 35 recorded interviews to assess the interrater reliability of the DITS-ID-adults. On a question-by-question basis, a second independent rater scored all items of the event and symptom sections of the DITS-ID-adults. The second rater assessed whether the event met criterion A and whether the participant met the criteria for PTSD.

Statistical Analyses

SPSS version 27 was used to analyze the data. First, a descriptive analysis was performed. To assess the interrater reliability of the DITS-ID-adults, Cohen's kappa was calculated for all items of the event section, symptom section, whether the reported event met criterion A, and the presence or absence of PTSD. To examine construct validity, correlation coefficients were calculated between the BSI-18, BPI, IES-ID, ADESS and total number of PTSD symptoms (DITS-ID-adults). Point-biserial correlations were calculated between the BSI-18, BPI, IES-ID, ADESS and PTSD classification. The association reporting a PTSD criterion A event and fulfilling the PTSD symptom criteria was tested with chi-square and an independent samples *t*-test to examine the difference between the mean number of reported type A criterion events in participants who did and those who did not fulfill the PTSD criteria. If more than 10% of the items of a total score or subscale on the DITS-ID-adults, BSI-18, BPI, IES-ID or ADESS were not scored, the scores of that scale were not included in the analyses (see results for the number of participants per total scale and subscale). The correlation coefficients were interpreted using the criteria of Funder and Ozer (2019).

RESULTS

Descriptive Statistics

Of the 97 participants, 85 (88%) reported at least one A-criterion event in their life and 56 of them (58%) were classified with PTSD using the DITS-ID-adults. Table 1 lists the five event questions for which Criterion A was identified most

Table 1. Five most often cited potentially traumatic events.

	Number of times mentioned
Did someone ever touch your body even though you didn't want this?	44 (45%)
Did someone ever hit you repeatedly or hurt you severely?	33 (34%)
Have you ever seen someone being threatened or maltreated (beating, kicking, shooting, stabbing, going at someone's throat)?	32 (33%)
Did you ever experience a serious accident or a fire?	21 (22%)
Have you ever been forced to touch someone's body parts when you really didn't want to	20 (21%)

often. Cronbach's alpha for the DITS-ID-adults total score (sum of yes scores) on the symptom section was .86, which indicates good internal consistency.

Interrater Reliability

The interrater reliability for almost all items that tapped into whether participants had been exposed to a particular event (29 items; yes, no, other) was excellent ($\kappa = .76\text{--}1.00$). For one item of the event section (i.e., item 12: "Did you ever see someone else being forced to have sex?") the interrater reliability was medium ($\kappa = 0.48$). The fact that kappa was lower for this item was likely due to the skewed distribution because the percentage of agreement on this item was high (94%). Kappa coefficients for fulfillment of the A-criterion were excellent ($\kappa = 0.77\text{--}1.00$). The interrater reliability of 43 symptom-items was good to excellent ($\kappa = 0.64\text{--}1.00$). Finally, the interrater reliability of the PTSD classification (yes/no) was excellent ($\kappa = 1.00$).

Construct Validity

Association Between PTSD Symptom Scores and BSI-18 Scores

Correlations between DITS-ID-adults' total number of PTSD symptoms and PTSD classification ("yes" or "no") and BSI-18 scores total score and subscales (BSI-18 was completed by the participant), were strong to very strong (see Table 2).

Association Between PTSD Symptom Scores and BPI Scores

No significant correlations were found between the DITS-ID-adults' total number of PTSD symptoms and BPI frequency scores (BPI was completed by proxy informants). However, moderate correlations were found between the number of PTSD symptoms and the BPI total severity score ($n = 91$, $r = .28$, $p < .007$), BPI self-injurious behavior severity score ($n = 94$, $r = .23$, $p < .024$) and BPI stereotyped behavior severity score ($n = 93$, $r = .23$, $p < .028$). No correlations between the PTSD classification ("yes" or "no") and the BPI

Table 2. Correlations between DITS-ID-adults total number of PTSD symptoms and PTSD classification ("yes" or "no") and BSI-18 scores (total score and subscales).

BSI-18	Number of PTSD symptoms			("yes" or "no") PTSD classification		
	<i>n</i>	<i>r</i>	<i>p</i>	<i>n</i>	<i>rpb</i>	<i>p</i>
Total score	97	.75	<.001	97	.61	<.001
Somatization	97	.64	<.001	97	.46	<.001
Anxiety	97	.70	<.001	97	.62	<.001
Depression	97	.73	<.001	97	.58	<.001

Note. Pearson correlation coefficients (*r*) and point-biserial correlation coefficients (*rpb*) are used for analyses.

Table 3. Correlations between DITS-ID-adults total number of PTSD symptoms and PTSD classification (“yes” or “no”) and BPI scores (total score and subscales).

BPI		Number of PTSD symptoms			("yes" or "no") PTSD classification		
		<i>n</i>	<i>r</i>	<i>p</i>	<i>n</i>	<i>rpb</i>	<i>p</i>
Total score	Frequency	92	.21	.050	92	.12	.244
	Severity	91	.28	.077	91	.18	.098
Self-injurious behaviour	Frequency	93	.19	.066	93	.11	.227
	Severity	94	.23	.024	94	.14	.178
Aggressive/destructive behavior	Frequency	92	.09	.415	92	.06	.601
	Severity	92	.14	.194	92	.7	.540
Stereotyped behavior	Frequency	95	.17	.106	95	.10	.326
	Severity	93	.23	.028	93	.16	.12

Note. Pearson correlation coefficients (*r*) and point-biserial correlation coefficients (*rpb*) are used for analyses.

Table 4. Correlations between DITS-ID-adults total number of PTSD symptoms and PTSD classification (“yes” or “no”) and ADESS scores (total score and subscales).

ADESS	Number of PTSD symptoms			("yes" or "no") PTSD classification		
	<i>n</i>	<i>r</i>	<i>p</i>	<i>n</i>	<i>rpb</i>	<i>p</i>
Total score	95	.46	<.001	95	.40	<.001
Depressive mood	95	.45	<.001	95	.37	<.001
Anxiety and stress	95	.48	<.001	95	.42	<.001
Social avoidance	95	.28	.006	95	.26	.012
Other problems	96	.38	<.001	96	.40	<.001

Note. Pearson correlation coefficients (*r*) and point-biserial correlation coefficients (*rpb*) are used for analyses.

total score or for the subscales of the BPI were statistically significant (see Table 3).

Association Between PTSD Symptom Scores and IES-ID Scores

A very strong correlation was found between the total score on the IES-ID completed by the participant and the total number of PTSD symptoms on the DITS-ID-adults ($n = 96$, $r = .81$, $p < .001$) and the total score on the IES-ID and the PTSD classification based in the DITS-ID-adults (“yes” or “no”) ($n = 96$, $r = .65$, $p < .001$).

Association Between PTSD Symptom Scores and ADESS Scores

Moderate to strong correlations were found between the DITS-ID-adults (completed by the participant), total number of PTSD symptoms, and PTSD classification (“yes” or “no”) and ADESS scores (completed by proxy informants) in terms of overall score and subscales (see Table 4).

Association Between Reporting a PTSD Criterion A Event and PTSD Symptom Criteria

Results of a chi-square test (in the group of participants who had not received trauma treatment) showed that participants who reported a criterion A event

significantly more often fulfilled all PTSD symptom criteria (criteria B, C, D, E, F, G, and H) compared to participants who did not reported a criterion A event ($\chi^2(1) = 5.52, p = .022$). The results of an independent samples *t*-test showed that participants who met all PTSD symptom criteria reported more potentially traumatic events ($M = 4.26; SD = 3.19$) than those who did not meet all PTSD symptom criteria ($M = 1.76; SD = 1.68$), $t(62) = 3.80, p < .001$.

DISCUSSION

The interrater reliability of the DITS-ID-adults was good to excellent. Results support the construct validity of the DITS-ID in light of the relationships found with the other measures used in this study. We found a significant association between having been exposed to an event that meets the A criterium for PTSD and fulfilling PTSD symptom criteria.

To this end, our results replicate and extend the findings of Mevissen et al. (2020) who also found positive correlations between the total number of PTSD symptoms and PTSD classification (based on the DITS-ID-adults) and IES-ID and ADESS. Filling a gap left by the study by Mevissen et al. (2020), the correlation between BSI-18, BPI, and DITS-ID-adults was examined. Positive correlations were found between the total number of PTSD symptoms and the PTSD classification and the BSI-18, which measures self-reported somatization, anxiety, and depression. This was expected because of the positive association between PTSD symptoms and anxiety and depression symptoms (Mason-Roberts et al., 2018; Spinhoven et al., 2014). Moderate positive correlations were found between the total number of PTSD symptoms and most of the (severity) BPI subscales, which may also be expected because of the association between PTSD symptoms and behavioral problems (Goldstein et al., 2016; Kildahl et al., 2020; Mason-Roberts et al., 2018; McNally et al., 2021; Rittmannsberger et al., 2020). No correlations were found between the BPI subscale, “Aggressive/destructive behavior” and the total number of PTSD symptoms and the PTSD classification. There may also be explanations other than PTSD for the presence of aggression problems. An illustrative example of another influencing factor is frustration with basic psychological needs (autonomy, relatedness, competence). Research indicates that individuals with MID-BIF more frequently experience frustration with these basic psychological needs, and this frustration is linked to the expression of externalizing behavioral problems (Westera et al., 2023). Overall, it can be concluded that the DITS-ID-adults is a useful instrument to classify PTSD in people with MID-BIF, assessing a sample of participants who were exclusively living in residential care. Overall, it can be concluded that the DITS-ID-adults is a reliable and valid instrument to assess PTSD in people with MID-BIF.

Reporting a potentially traumatic event (A-criterion) was associated with fulfilling the PTSD-symptom criteria. Furthermore, people who met the PTSD

symptom criteria reported more potentially traumatic events (criterion A) compared to those who did not meet the PTSD symptom criteria. This is in line with the study by Mevissen et al. (2020) and underpins the cumulative effect of trauma (Kessler et al., 2017); experiencing a potentially traumatic event increases the likelihood of reporting more potentially traumatic events.

PTSD is Unrecognized

Of the 97 participants, 88% had reported at least one A-criterion event in their life, and 58% of the participants could be classified with PTSD according to the DITS-ID-adults. This is remarkably high, as only 7% of the participants were diagnosed with PTSD before participating in the study. Mevissen et al. (2020) and Nieuwenhuis et al. (2019) also found higher rates of PTSD diagnosis in their sample of participants than the rates known in advance. These data support the notion that PTSD is unrecognized in people with MID-BIF. Possibly because of the lack of evidence for appropriate diagnostic tools and missing guidelines in the field of PTSD in people with MID-BIF, diagnostic testing is rarely performed. Another possible explanation for not recognizing PTSD in individuals with MID-BIF is that PTSD symptoms are attributed to MID-BIF, a phenomenon known as diagnostic overshadowing (Jopp & Keys, 2001). In addition, PTSD symptoms may be incorrectly attributed to other mental disorders (Kildahl & Helverschou, 2023). For example, intrusion symptoms (PTSD criterion B) can incorrectly be interpreted as hallucinations belonging to a psychotic disorder, and alterations in arousal and reactivity (PTSD criterion E) may appear to be manifestations of ADHD. Finally, the difficulty to recognize PTSD in this target group could be explained by the fact that caregivers are often insufficiently aware of the trauma history (Hoogstad et al., 2023) and PTSD symptoms (Versluis et al., 2024) of the individuals they work with.

As stated in the Introduction, undetected and untreated PTSD is related to serious problems in daily life, which may specifically hold true for individuals with MID-BIF (McNally et al., 2021). It is important that PTSD is better recognized in people with MID-BIF so that they can receive proper treatment. In recent years, an increasing number of studies have shown that trauma treatments, such as EMDR therapy, are suitable, safe, and potentially effective for adults with MID-BIF who have been diagnosed with PTSD (e.g., Penninx Quevedo et al., 2021; Unwin et al., 2018).

LIMITATIONS OF THE STUDY

The present study has limitations. First, since the introduction of DSM, MID and BIF should no longer be diagnosed by an IQ-score alone. When

determining a MID or BIF, adaptive functioning should be considered in addition to the IQ score. All participants in this study were previously classified with MID or BIF as mentioned in their client file, but often the classification was based only on an IQ score and not on their adaptive skills. The latter is due to the lack of an up-to-date Dutch language and standardized instruments for measuring adaptive skills in people with MID-BIF. Consequently, it remains uncertain whether all participants would fulfill all DSM-5-TR criteria for MID or BIF. Second, we investigated a specific sample of adults with MID-BIF all living in supported housing in two ID care services, which implies these findings may not be generalizable to the MID-BIF population in general.

RECOMMENDATION FOR FUTURE RESEARCH

The DITS-ID-adults contains a follow-up measurement, with which a clinician can assess whether there is still a PTSD classification and/or whether the number of PTSD symptoms has decreased following trauma treatment. However, given that, until now, no data are available on the test-retest reliability of the DITS-ID-adults follow-up measurement, future studies should address this issue. Availability of these data is important as this would enable clinicians to assess whether the difference in scores on the follow-up measurement before and after an intervention reflects a reliable change.

CONCLUSION

This study underscores the importance of recognizing and classifying PTSD in individuals with MID-BIF, as it is often overlooked. Our findings support the DITS-ID-adults as a reliable and valid basis for classifying PTSD for this population. It is imperative for healthcare and psychology professionals to become aware of the potentially high risk of PTSD in individuals with MID-BIF and consider the use of DITS-ID-adults as a valuable tool for classifying PTSD in individuals with MID-BIF.

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Data availability statement

Because of the nature of this research, the participants in this study did not provide consent for the public sharing of their data; hence, supporting data is unavailable.

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