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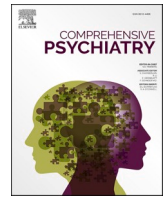
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## Efficient screening and outcome assessment for borderline personality disorder: A psychometric evaluation of the uBPDc

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### ABSTRACT

There is a need for a brief and psychometrically sound questionnaire to assess borderline personality disorder (BPD) symptomatology that can serve both as a screening tool and outcome measure. We conducted a comprehensive psychometric evaluation of a shortened version of the validated BPD Checklist, the Ultrashort BPD Checklist (uBPDc). Data from 204 individuals diagnosed with BPD, 57 individuals diagnosed with Cluster-C personality disorder, and 103 non-clinical controls were analysed. As an initial step, we determined the final item composition, with separate items to index the presence or absence of intense anger or difficulty controlling anger (DSM-5 BPD criterion 8), and of paranoid ideation or dissociation (DSM-5 BPD criterion 9). The final 11-item version demonstrated strong internal consistency, and our findings provide consistent support for its concurrent and known-group validity. The uBPDc also showed satisfactory diagnostic accuracy and sensitivity to change. The one-factor structure of the uBPDc was confirmed by factor analysis. Measurement invariance was subsequently assessed across individuals with BPD and non-clinical controls, revealing support for partial measurement invariance. To conclude, the uBPDc demonstrated strong psychometric properties and thus makes for an efficient tool for screening and outcome assessment in BPD.

### 1. Introduction

Borderline personality disorder (BPD) is an important public health issue, with a prevalence of 1 % to 3 % in the general population and between 10 % and 22 % in psychiatric outpatient and inpatient settings [1–3]. This severe mental disorder is characterized by instability in interpersonal relationships, self-image, impulse control, and affect regulation [4]. BPD is associated with high rates of comorbid mental disorders, severe functional impairment, low quality of life, high risk of suicide, and serious physical conditions [5–10]. Moreover, individuals with BPD are among the highest utilizers of psychiatric and nonpsychiatric treatment services [11–13]. Considering the detrimental effects of BPD on both the individual and society, it is important to enhance our understanding of BPD and improve treatment effectiveness. As

instruments form the basis for diagnosis, prognosis, and treatment evaluation [14], having reliable and user-friendly tools to accurately identify the presence and severity of BPD psychopathology is therefore essential for both clinical and research purposes.

Research has shown that BPD is often misdiagnosed or underdiagnosed [13,15–17]. The misdiagnosis of BPD might be related to the high comorbidity rates and heterogeneity of BPD [18]. These factors, along with the stigma associated with BPD and the resulting hesitation among clinicians to diagnose it, may also contribute to the underdiagnosis of BPD [19]. Moreover, there is limited agreement between structured interviews and personal judgments of clinicians [20,21]. Research has shown that without information from a semi-structured diagnostic interview, clinicians rarely give the BPD diagnosis during a routine intake evaluation [16,22]. Using semi-structured diagnostic

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interviews to identify BPD (e.g., Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition [DSM-5] Personality Disorders [SCID-5-PD] [23], Revised Diagnostic Interview for Borderline [DIB-R] [24]) is therefore crucial in clinical and research practice. However, diagnostic interviews are time-consuming, therefore more costly, and substantial clinical expertise is needed to perform such interviews [25].

To save time, several authors [26,27] recommended a two-step diagnostic procedure, starting with a screening instrument, followed by a semi-structured interview for patients scoring above the clinical threshold. One of the most commonly studied screening instruments for BPD is the McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD) [28]. However, the suggested threshold of 7 [28] resulted in a sensitivity below the recommended 90 % [19]. Lowering the threshold to 6 yielded a near satisfactory sensitivity (89 %), but resulted in considerably lower specificity (66 %) [28]. Another drawback of the MSI-BPD is its use of a categorical approach to BPD (yes-no questions), assuming a clear distinction between the presence or absence of a BPD symptom. This contradicts findings from studies suggesting BPD exhibits a dimensional nature [29,30]. Moreover, it is also assumed that the dichotomous structure may result in a decreased ability to detect subtle changes when repeatedly used, due to the loss of information when transforming a dimensional variable into a dichotomy [31]. In addition, dimensional scoring seems especially important for subthreshold levels of BPD pathology [31], rendering the MSI-BPD less suitable for assessing treatment outcomes. However, longer instruments are related to increased perceived burden [32], making them less suitable to evaluate changes during treatment. To illustrate, Hoerger [33] found an association between the number of survey items and study dropout. Moreover, aside from an increased burden and lower compliance, longer questionnaires are related to careless responding [34]. To conclude, there is a need for a brief questionnaire assessing BPD symptomatology that can serve both as a screening tool and as a (repeated) outcome measure.

In the context of a multicenter randomized clinical trial (RCT) into the effectiveness of Dialectical Behavior Therapy (DBT) and Schema Therapy (ST) [35], a brief questionnaire for measuring BPD symptoms was developed: the Ultrashort BPD Checklist (uBPDc) [36]. This questionnaire is a shortened version of the validated BPD Checklist by Bloo et al. [25], which measures the self-reported burden of BPD symptoms during the last month using 47 items. Although an initial evaluation of a preliminary version of the uBPDc showed promising psychometric properties [36], its final composition has not been established due to the lack of a comprehensive psychometric evaluation. The aims of the current study were therefore to (i) determine the final item composition, and (ii) evaluate the suitability of the uBPDc as a screening tool and outcome instrument. Specifically, using data from individuals with BPD, individuals with Cluster-C personality disorder (PD), and non-clinical controls, we aimed to (1) explore the optimal selection of items (i.e., 9, 10 or 11 items) of the uBPDc, (2) assess the psychometric properties, including reliability (internal consistency and item-rest correlations) and validity (concurrent and known-group validity), (3) examine the sensitivity to change, (4) derive clinical norms, and (5) evaluate the factor structure as well as measurement invariance across the BPD and non-clinical control samples. It was hypothesized that the uBPDc would exhibit similar psychometric properties as did the BPD Checklist [25], including adequate reliability across all three samples and sufficient known-group validity, demonstrated by higher total scores on the uBPDc for individuals with BPD compared to individuals with Cluster-C PD, and non-clinical controls. For concurrent validity, it was hypothesized that the uBPDc would correlate positively with the severity of BPD symptoms in the BPD sample (measured with the Borderline Personality Disorder Severity Index version 5 [BPDSI-5] [37,38]) and with the number of BPD symptoms across all three samples (measured with the screener or interview versions of the SCID-5-PD Borderline Personality Disorder section [SCID-5-PD-BPD] [23,39]). In addition, based on the findings by

Bloo et al. [25], we hypothesized that the uBPDc would be sensitive to change, as indicated by significant reductions in uBPDc scores of individuals with BPD who received an evidence-based treatment (DBT or ST [35]). Finally, we expected to find support for a one-factor structure of the uBPDc [25].

## 2. Methods

### 2.1. Participants

The total sample comprised participants with BPD ( $N = 204$ , of whom 90 completed treatment), participants with Cluster-C PD ( $N = 57$ ), and non-clinical controls ( $N = 103$ ). All participants were at least 18 years old and had adequate proficiency in the Dutch language. Participants with BPD were included if they: (1) had BPD as their primary diagnosis, with a severity score above 20 on the BPDSI-5, (2) were motivated and available for treatment and assessments, (3) did not meet criteria in the previous year of a psychotic disorder or bipolar I disorder with at least one manic episode, (4) were not diagnosed with antisocial personality disorder combined with violent interpersonal behavior in the previous two years, (5) had an IQ above 80, (6) lived within a travel distance of 45 min from the mental healthcare center, (7) had a permanent home address, and (8) had not received ST or DBT in the previous year [35]. Participants with Cluster-C PD were included if they met the following criteria: (1) a primary Cluster-C PD diagnosis, (2) motivated and available for treatment, (3) no acute suicidal risk, (4) not received ST in the previous year, and (5) no BPD diagnosis [40]. Finally, non-clinical controls were included if they: (1) had no psychiatric diagnosis or severe psychological complaints, (2) did not abuse alcohol or drugs, (3) had not consumed alcohol or drugs in the past 24 h, (4) had no history of brain injury, and (5) did not have an intellectual disability.

### 2.2. Procedure

The clinical participants participated in two RCTs evaluating the effectiveness of treatment for BPD [35] and Cluster-C PD (QUEST-CLC study [40]) and were recruited in various mental healthcare centers in the Netherlands. The non-clinical participants were recruited using convenience sampling, via online advertisements (e.g., Facebook, LinkedIn) or face-to-face (friends, family or relatives of students). The BOOTS study received approval from the Medical Ethics Committee of the Academic Medical Center Amsterdam (NL66731.018.18). The QUEST-CLC study and the study involving the non-clinical controls were approved by the Ethics Review Board of the Faculty of Social and Behavioural Sciences, University of Amsterdam (2020-CP-12948 and FMG-5576\_2023, respectively). All participants provided informed consent. Diagnoses of clinical participants were assessed with the SCID-5-PD and SCID-5 for syndrome disorders (SCID-5-S [41]). Data of the BPD sample were collected between December 2019 and January 2024 through interviews and self-report questionnaires at multiple time-points: before treatment (screening and baseline assessment) and four reassessments every six months until the end of the 2-year treatment. Patients were randomized to either DBT or ST, but only patients who completed treatment and all assessments were included in the sensitivity to change analysis. Data of the Cluster-C PD sample were collected between September and December 2021 during the screening and baseline assessments, consisting of interviews and self-report questionnaires. The data from the non-clinical controls were collected in December 2022 and between December 2023 and January 2024 using online self-report questionnaires.

### 2.3. Materials

#### 2.3.1. uBPDc

The Ultrashort BPD Checklist (uBPDc) ([36]; see Appendix A) is a shortened version of the BPD Checklist [25] and assesses patient's

experienced burden of BPD symptoms during the last month. The test version of the uBPDc consists of 11 five-point Likert scale items (1 = *not at all* to 5 = *extremely*) related to the nine DSM-5 criteria. These items were selected based on their item-rest correlations in the study by Bloo et al. [25]. The first seven DSM-5 criteria are measured with one item each, whereas the last two criteria (anger and paranoid ideation or dissociation) are, potentially, measured with two items each. The initial version of the uBPDc included only one item for each of criteria 8 and 9 (“hating yourself, everybody and the world” and “distrusting other people”, respectively). However, it was suggested that adding two items measuring anger outbursts and dissociation could provide a more comprehensive coverage of the DSM-5 criteria 8 and 9, as both criteria encompass two aspects (criterion 8: intense anger or difficulty controlling anger, criterion 9: paranoid ideation or dissociation [4]). When criteria 8 and 9 were measured with two items each, the scores of the two items were either averaged or the highest score was selected. Consequently, seven different versions of the uBPDc were examined to determine the optimal composition of items (see Appendix A). The total score ranges from 9 to 45, where a higher score indicates a higher experienced burden of BPD symptoms.

### 2.3.2. SCID-5 BPD

The number of DSM-5 BPD symptoms was assessed in clinical participants using the interview version of the BPD section of the SCID-5-PD (SCID-5-PD-BPD [23]), while the self-report screening version (SCID-5-SPQ-BPD [39]) was utilized for non-clinical controls. In the SCID-5-PD-BPD, the nine BPD criteria are rated on a 3-point Likert scale (0 = *absent*, 1 = *subthreshold*, 2 = *present*), yielding a total score ranging from 0 to 18. The SCID-5-SPQ-BPD includes 15 yes/no items assessing the nine BPD criteria. Each criterion is represented by a single item, except for criteria 3 (four questions), 5 (two questions), and 8 (three questions). To prevent overrepresentation of criteria, items belonging to the same criterion were merged into one item and assigned a score of 1 if at least one “yes” response was present. Subsequently, a sum score was calculated ranging from 0 to 9. Previous studies found adequate psychometric properties for both the SCID-5-PD and SCID-5-SPQ [42–46].

### 2.3.3. BPDSI-5

The Borderline Personality Disorder Severity Index version 5 (BPDSI-5 [37,38]) is a semi-structured interview comprising 70 items that assesses the severity of the nine DSM-5 BPD criteria within the prior three months. Each item is rated on an 11-point Likert scale (0 = *never* to 10 = *daily*), except for the items measuring criterion 3 (Identity disturbance), which are rated on a 5-point Likert scale (0 = *absent* to 4 = *dominant, clear, and well-defined*) and then multiplied by 2.5. The total score is calculated as the sum of the nine criteria scores (range: 0–90). The BPDSI-5 is a revised version of the BPDSI-IV [37,38]; modifications include a slight rephrasing of a few items and addition of exact frequency scores. The BPDSI-IV showed good psychometric properties among (BPD) patients and non-patients [37].

## 2.4. Statistical analysis

First, the optimal item composition was examined by evaluating the psychometric properties (reliability and validity) of seven different versions (see Appendix A) as well as the discriminative capacity of the items that were subject to discussion (items 8 to 11). Moreover, the content coverage of the items was also taken into consideration, with the inclusion of two items for both criterion 8 and criterion 9 most closely resembling the DSM-5 [4]. Reliability was evaluated by assessing the internal consistency with Cronbach’s  $\alpha$ , McDonald’s omega ( $\omega$ ), and their ordinal coefficients to account for the Likert response format [47,48]. Alpha values  $>0.70$  and omega values  $>0.75$  were considered acceptable [49]. In addition, item-rest correlations ( $r_{ir}$ ) were calculated, with  $r_{ir} > 0.30$  deemed satisfactory [50]. Pearson or Spearman correlations were calculated to assess concurrent validity. Known-group

validity was examined with independent-samples *t*-tests as well as ANCOVAs that included relevant covariates to account for group differences in demographics. In addition, effect sizes (Cohen’s *d*) were calculated and interpreted according to Cohen’s [51] guidelines (0.20 = small, 0.50 = medium, and  $\geq 0.80$  = large).

Second, sensitivity to change was assessed using four paired-samples *t*-tests combined with effect size coefficients (Cohen’s *d*), comparing scores before treatment with scores on the reassessments. Next, receiver operating characteristic (ROC) analysis was conducted to extract the area under the ROC curve (AUC), sensitivity, and specificity. Swets’ [52] guidelines were applied to interpret the AUC ( $\geq 0.70$  = moderate and  $\geq 0.90$  = high). Moreover, the ROC analysis was used to determine the optimal cutoff value based on Youden (*J*) index [53], Euclidean distance [54], and Liu’s method [55], as well as the recommended minimal sensitivity of 0.90 [56].

Finally, factor analyses were conducted to evaluate the dimensional structure of the uBPDc and its measurement invariance. A one-factor model was examined using confirmatory factor analysis (CFA) with robust weighted least squares mean and variance adjustment (WLSMV) and theta parameterization [57], including all participants. Several fit indices were used to evaluate model fit, including the Comparative Fit Index (CFI [58]), Tucker-Lewis Index (TLI [59]), and Root Mean Square Error of Approximation (RMSEA [60]). For the CFI and TLI, values larger than 0.90 or 0.95 indicate an acceptable or good fit, respectively. For the RMSEA, values below 0.08 are considered as acceptable and values below 0.06 as good [61]. Subsequently, measurement invariance of the factor structure of the uBPDc was assessed across individuals with BPD and non-clinical controls using multiple-group confirmatory factor analysis (MG-CFA). The Cluster-C PD sample was excluded due to the low sample size [61,62]. MG-CFA was initially planned to be conducted with WLSMV as the estimation method. However, due to an unequal number of item categories between the groups, Maximum Likelihood was utilized [63]. This approach was considered justified given the number of item categories (five [64]) and under the prerequisite that the CFA fit indices did not differ considerably between the one-factor model estimated using WLSMV versus ML [65].

Three levels of invariance were consecutively tested, including configural invariance, metric invariance, and scalar invariance. A fourth level, strict invariance, was omitted from the invariance tests, as testing residual invariance is not a prerequisite for examining mean differences across groups [66,67]. The comparative fit of the models was assessed by evaluating the magnitude of change in the CFI, TLI, and RMSEA. For the CFI and TLI, a change greater than  $-0.010$  was considered indicative of a significant decrease in model fit, whereas a change greater than 0.015 for the RMSEA indicated a significant decrease in fit [68]. Chi-square statistics were not compared as this statistic appears over-sensitive with large sample sizes [67]. Modification indices were used to identify potential sources of model misspecification.

The analyses were performed using Mplus (factor analyses; version 8.8 [69]), R software (version 4.2.2 [70]) with the psych package (internal consistency [71]), and IBM SPSS (all other statistical analyses; version 28.0.1.0 [72]), with a two-sided *p*-value of  $<0.05$ .

## 3. Results

### 3.1. Descriptive statistics

Demographic data of the three groups are shown in Table 1, including tests (ANOVAs and chi-square tests) for between-group differences. The groups differed significantly with respect to age, gender, Dutch ethnicity, and employment status, while no significant difference was observed for education level. Therefore, between-group analyses (known-group validity) were repeated by correcting for these variables, except for employment status which was considered a common contextual factor in individuals diagnosed with BPD [73].

**Table 1**  
Demographic Data of the Three Groups.

Characteristic	BPD (N = 204)		Cluster-C PD (N = 57)		Non-clinical (N = 103)		Analysis	
	M	SD	M	SD	M	SD	F	p
Age	32.2 <sup>a</sup>	9.6	36.7 <sup>b</sup>	10.5	33.0 <sup>a/b</sup>	13.9	3.61	.028 <sup>1</sup>
Education <sup>2</sup>	4.2	1.7	4.5	1.7	4.4	1.5	1.32	0.268
	N	%	N	%	N	%	$\chi^2$	p
Women	172 <sup>a</sup>	84.3	36 <sup>b</sup>	63.2	81 <sup>a</sup>	78.6	12.24	0.002
Dutch ethnicity	150 <sup>a</sup>	73.5	52 <sup>b</sup>	91.2	91 <sup>b</sup>	88.3	14.53	<0.001
Employed	57 <sup>a</sup>	27.9	24 <sup>b</sup>	42.1	57 <sup>b</sup>	55.3	22.33	<0.001

Note. Follow-up analyses without correction were conducted when the main effect was significant. Demographics with different letters (a, b) were significantly different from each other.

<sup>1</sup> Welch's ANOVA was also conducted due to the violation of the homogeneity of variances assumption and indicated a significant main effect ( $p = .017$ ).

<sup>2</sup> Based on the International Standard Classification of Education, 2011 version.

### 3.2. Optimal composition of items

The psychometric properties of the seven versions and the between-group comparisons for the items under debate (items 8 to 11) can be found in Appendix B, Table B.1. Minimal differences were observed in psychometric properties between the alternative versions of the uBPDc. Therefore, the optimal version was selected based on content coverage and the differentiating capacity of the items. Including 11 items with two items to index the presence or absence of intense anger or difficulty controlling anger (criterion 8), as well as paranoid ideation or dissociation (criterion 9), most closely resembles the DSM-5 BPD criteria. Moreover, selecting the highest score of the two items measuring the same criterion resulted in the largest differences in scores between participants with BPD and non-clinical controls (criteria 8:  $t(302.99) = 19.92, d = 1.94$ ; criteria 9:  $t(295.14) = 17.82, d = 1.85$ ; Appendix B, Table B.2). Accordingly, version 5 was deemed the optimal version, including all 11 items, whereby for criteria 8 and 9 the highest score was selected among the two items measuring the same criterion. Subsequent analyses were performed with this version.

### 3.3. Psychometric properties

Psychometric properties, including reliability and validity, are presented in Table 2. First, the internal consistency of the uBPDc proved to be good for both the total group and specific groups. Item-rest correlations in the total group were satisfactory and ranged from 0.50 to 0.79. Item-rest correlations were also adequate in the specific groups, except for items 4 (impulsivity;  $r = 0.25$  and  $r = 0.29$ ) and 5 (non-suicidal self-injury and suicidality;  $r = 0.19$  and  $r = 0.11$ ) in the Cluster-C PD and non-clinical control groups, respectively (see Appendix C, Table C.1). However, removal of these items did not result in substantial improvements in the internal consistencies. Second, moderate to large associations were observed between the uBPDc and two instruments measuring the severity and number of BPD symptoms. Finally, the average uBPDc total score of the BPD sample ( $M = 30.74$ ) was significantly higher compared to the average uBPDc total scores of the Cluster-C PD sample ( $M = 21.67$ ) and non-clinical control sample ( $M = 14.03$ ), with large effect sizes.

### 3.4. Sensitivity to change

The sensitivity to change analysis included 90 participants with BPD who completed two years of treatment (DBT or ST) as well as the respective assessments. The uBPDc was administered before treatment and six-monthly during treatment. Table 3 presents the mean scores on the assessments and results of the paired-samples  $t$ -tests, comparing the baseline assessment with the reassessments. The results indicated significant improvements between the pre-treatment assessment and reassessments, with large effect sizes.

**Table 2**  
Reliability and Validity of the uBPDc in the Total Group, BPD Group, Cluster-C PD Group, and Non-Clinical Control Group.

Psychometric property	Total group	BPD	Cluster-C PD	Non-clinical
Internal consistency ( $\alpha$ /ordinal $\alpha$ )	0.92/0.93	0.80/ 0.83	0.79/0.70	0.78/0.80
Internal consistency ( $\omega$ /ordinal $\omega$ )	0.93/0.95	0.83/ 0.86	0.84/0.75	0.84/0.89
Mean item-rest correlations ( $r_{it}$ )	0.70	0.49	0.47	0.46
Concurrent validity ( $r$ )				
Number of BPD symptoms (SCID-5-PD/SPQ)	0.72*** <sup>1,2</sup>	0.29***	0.33*** <sup>2</sup>	0.44*** <sup>2</sup>
Severity of BPD symptoms (BPDSI-5)	NA	0.48***	NA	NA
		BPD vs. Cluster-C PD	BPD vs. Non-clinical	
Known-group validity				
$t$ -value/ $F$ -value	-9.37***/79.33*** <sup>3</sup>		-27.43***/530.41*** <sup>4</sup>	
Cohen's $d$ /corrected	1.40/1.38 <sup>3</sup>		2.83/2.81 <sup>4</sup>	
Cohen's $d$				

Note. BPDSI-5 = Borderline Personality Disorder Severity Index version 5; NA = not available; SCID-5-PD = Structured Clinical Interview for DSM-5 Personality Disorders; SCID-5-SPQ = Structured Clinical Interview for DSM-5 Screening Personality Questionnaire.

<sup>1</sup> Since the range of the SCID-5-PD scores was twice as large as the range of the SCID-5-SPQ scores, the SCID-5-PD scores were first divided by two before being combined into one variable.

<sup>2</sup> Spearman correlation was calculated, due to a severe violation of the normality assumption.

<sup>3</sup> Based on ANCOVA, corrected for age, gender, and Dutch ethnicity.

<sup>4</sup> Based on ANCOVA, corrected for Dutch ethnicity.

\*\*\*  $p < .001$ .

### 3.5. Clinical norms

The ROC analysis indicated that the uBPDc was highly effective as a screening tool ( $AUC = 0.93$ ). Based on the Youden ( $J$ ) index, Euclidean distance, and Liu's method, a cutoff value of 22.5 was proposed, resulting in a sensitivity of 0.89 (182 out of 204 individuals with BPD were correctly classified) and specificity of 0.84 (134 out of 160 individuals without BPD were correctly classified). In addition, a cutoff value of 21.5 exceeded the desired minimum sensitivity for a screener of 0.90 (0.92; 187 out of 204 individuals with BPD were correctly classified) with a specificity of 0.81 (129 out of 160 individuals without BPD were correctly classified).

### 3.6. Factor analyses

First, a one-factor model was fitted including all participants ( $N = 364$ ) to evaluate the dimensional structure of the uBPDc. Results showed that model fit was good according to the CFI and TLI, but unacceptable

**Table 3**  
Descriptives and Paired Samples t-test Statistics for the Assessments Before and During Treatment (N = 90).

Assessment	Descriptives		Analysis			
	M	SD	$\Delta_{\text{baseline-reassessment}}$	SD $\Delta_{\text{baseline-reassessment}}$	t-value	Cohen's d
Pre-treatment	29.97	6.39				
6 months	23.57	6.27	6.40	6.43	9.45***	1.00
12 months	19.76	6.55	10.21	8.18	11.84***	1.25
18 months	18.07	5.98	11.90	7.17	15.75***	1.66
24 months	17.66	6.56	12.31	8.23	14.19***	1.50

\*\*\*  $p < .001$ .

according to the RMSEA ( $\chi^2(27) = 94.31$ , RMSEA = 0.083, 90 % CI [0.065, 0.101], CFI = 0.988, TLI = 0.984). Modification indices were therefore examined to identify measurement error correlations that penalized model fit. A respecified model was tested by adding an error correlation between item 3 ("Uncertainty about who you really are") and item 7 ("Feeling bored or empty inside"), which yielded an adequate fit ( $\chi^2(26) = 81.98$ , RMSEA = 0.077, 90 % CI [0.058, 0.096], CFI = 0.990, TLI = 0.986). Next, measurement invariance was tested across individuals with BPD and non-clinical controls using the one-factor model with an error correlation between items 3 and 7 as baseline model. However, due to an unequal number of item categories between the samples, the analyses were proceeded by treating the variables as continuous, using ML instead of WLSMV as the estimation method. The results of the one-factor model including all participants and using ML aligned with the results based on WLSMV (initial one-factor model:  $\chi^2(27) = 92.49$ , RMSEA = 0.082, 90 % CI [0.064, 0.100], CFI = 0.964, TLI = 0.953; respecified model:  $\chi^2(26) = 71.74$ , RMSEA = 0.069, 90 % CI [0.051, 0.089], CFI = 0.975, TLI = 0.966), justifying the use of ML to test for measurement invariance.

The results of the measurement invariance tests are presented in Table 4. First, for configural invariance, model fit was considered acceptable based on the RMSEA and CFI, but unsatisfactory according to the TLI. The modification indices indicated an error correlation between item 4 ("Impulsively doing unwise things") and recoded item 9 (highest score of items 9 "Distrusting other people" and 11 "Not feeling like yourself anymore, as if you are out of touch with reality or experiencing life like a movie or dream"). Including this error correlation improved the model fit to an adequate level. Second, factor loadings were constrained across groups to assess metric invariance. The metric invariance model provided a significantly worse fit than the configural invariance model, indicating that the factor loadings were not equal across groups. Using modification indices, three factor loading constraints (items 3, 5 and 7) were sequentially identified and freed before a partial metric invariance model was identified that did not differ in model fit from the configural invariance model. The factor loadings of items 3 ("Uncertainty about who you really are") and 7 ("Feeling bored or empty inside") were substantially lower in the BPD sample (item 3:  $\lambda = 0.56$ , item 7:  $\lambda = 0.59$ ) compared to the non-clinical sample (item 3:  $\lambda = 0.67$ , item 7:  $\lambda = 0.71$ ), whereas the factor loading of item 5 ("Injuring yourself on purpose (cutting, pricking, hitting, burning) or the urge to kill yourself") was substantially higher in the BPD sample ( $\lambda = 0.31$ ) compared to the non-clinical sample ( $\lambda = 0.12$ ). Finally, constraining item intercepts to assess scalar invariance yielded a fit that approximated the fit of the

partial metric invariance model.

#### 4. Discussion

The aim of this study was to examine the suitability of the uBPDc, a shortened version of the validated BPD Checklist [25], as a screening tool and outcome instrument. Using data from individuals with BPD, individuals with Cluster-C PD, and non-clinical controls, the optimal item composition of the uBPDc was determined. Emphasis was placed on the differentiating capacity of the items and content coverage. The preferred version was the 11-item version, including one item for each DSM-5 criterion, except for criteria 8 and 9, which were measured with two items each and followed by selecting the highest score among the two items measuring the same criterion. Including two items for both criterion 8 and criterion 9 most closely resembles the DSM-5, as each criterion encompasses two aspects (criterion 8: intense anger or difficulty controlling anger, criterion 9: paranoid ideation or dissociation [4]). Using this version of the uBPDc, the results indicated that the questionnaire is both valid and reliable across the three samples, with satisfactory diagnostic accuracy. Moreover, the uBPDc proved to be sensitive to change, and support was found for a unidimensional construct with partial measurement invariance across individuals with BPD and non-clinical controls.

A close inspection of the psychometric properties of the uBPDc showed that the internal consistency was satisfactory in all samples, although slightly lower compared to the original questionnaire ( $\alpha = 0.92$  versus  $\alpha = 0.97$  in the total group, and  $\alpha = 0.80$  versus  $\alpha = 0.92$  in the BPD group [25]). This difference is probably related to the higher number of items in the original questionnaire, since more items can lead to improved internal consistency [74]. Additionally, adequate item-rest correlations were found, although two items (item 4: impulsivity and item 5: non-suicidal self-injury and suicidality) were suboptimal in the non-BPD samples. These behaviours are common in individuals with BPD but less common in those with Cluster-C PD or in the general population [11,75–78]; hence, restricted variance and skewed distributions likely limited the item-rest correlations. Second, there was support for the concurrent and known-group validity of the uBPDc. Moderate to large associations were observed between the uBPDc and two instruments measuring the severity and number of BPD symptoms. The moderate associations observed between the uBPDc and the number of BPD symptoms in the BPD and Cluster-C PD samples were likely due to the restricted score ranges (BPD sample: predominantly high scores, Cluster-C PD sample: predominantly low scores). Moreover, the BPD

**Table 4**  
Results of Measurement Invariance Tests.

Model	$\chi^2$ (df)	RMSEA (90 % CI)	CFI	TLI	$\Delta$ RMSEA	$\Delta$ CFI	$\Delta$ TLI
Configural	94.27 (52)	0.073 (0.049; 0.096)	0.927	0.899			
Configural <sup>1</sup>	84.25 (50)	0.067 (0.041; 0.091)	0.941	0.915			
Metric <sup>1</sup>	130.53 (58)	0.090 (0.070; 0.111)	0.875	0.845	0.023	-0.066	-0.070
Metric <sup>1,2</sup>	92.19 (55)	0.066 (0.042; 0.090)	0.936	0.916	-0.001	-0.005	0.001
Scalar <sup>1,2</sup>	654.30 (63)	0.065 (0.042; 0.087)	0.929	0.919	-0.001	-0.007	0.003

<sup>1</sup> Including an error correlation between item 4 and recoded item 9.

<sup>2</sup> Factor loadings were freed for items 3, 5, and 7.

Checklist, along with its shortened version, was developed to complement the two other instruments, for example in format (self-report versus interview format) and focus (subjective burden versus frequency of BPD symptoms) [25]. Finally, large differences in scores were found between the BPD sample and non-BPD samples, indicating that the uBPDc can be used to discriminate between individuals diagnosed with and without BPD [79].

The uBPDc was developed in the context of an RCT [35] to enable the frequent assessment of BPD symptoms. The primary purpose of the uBPDc is therefore its utilization as an outcome instrument, rendering sensitivity to change a crucial aspect of this psychometric evaluation. Scores in a BPD sample receiving an evidence-based treatment (DBT or ST) decreased substantially between the pre-treatment assessment and reassessments during treatment, with effect sizes comparable to those of the original version (BPD Checklist [25]). This suggests that the uBPDc is sufficiently sensitive to measure change over time, thereby confirming its suitability as an outcome instrument. Furthermore, the uBPDc showed promise as a screening tool for BPD. A high AUC (0.93) was observed, with a cutoff value of 22.5 yielding a sensitivity of 0.89 and a specificity of 0.84. However, a sensitivity above 0.90 is recommended for screening tools in clinical practice, since a follow-up diagnostic assessment would only occur for those who screen positive [56]. A cutoff value of 21.5 resulted in a sensitivity of 0.92, with a reasonable specificity of 0.81. Compared to other short screening instruments for BPD (e.g., MSI-BPD [28], screening instrument for borderline personality disorder [SI-Bord] [80], Personality Diagnostic Questionnaire-4 BPD [PDQ-4 BPD] [81], International Personality Disorder Examination Screener [IPDE-S] BPD subscale [82]), the uBPDc demonstrated similar or even better properties [19,80,83,84].

Finally, factor analyses confirmed the one-factor structure of the uBPDc, albeit with the inclusion of an error correlation between items 3 (identity problems) and 7 (emptiness). This is not surprising, as both theoretical and empirical research suggest that feelings of emptiness are closely linked to identity disturbance [85–89]. Moreover, in a qualitative study among individuals with BPD, feelings of emptiness were frequently described as a disconnection from themselves, including a lack of identity or an unstable identity [90]. In addition, previous factor analytic and latent class analytic studies have shown that identity problems and emptiness load on the same component or class [91–94]. Next, measurement invariance analysis provided support for partial measurement invariance of the one-factor model across individuals with BPD and non-clinical controls. There were indications of unequal factor loadings of items 3 (identity problems), 5 (non-suicidal self-injury and suicidality), and 7 (emptiness), suggesting that these items contributed differently to the latent factor (i.e., partial metric invariance). Accepting some degree of measurement noninvariance is however common practice, although guidelines for partial invariance vary [67]. Some authors (e.g., [95–97]) suggested that partial invariance is acceptable if most of the items are invariant, which is the case for the uBPDc. Moreover, research has shown that valid comparisons between groups are possible even in cases of partial invariance [98]. Additionally, Steinmetz [99] demonstrated that while scalar noninvariance resulted in significant misinterpretation of true mean differences, metric noninvariance had only minor effects.

There are several limitations of this study that should be noted. First, the BPD sample differed significantly from the non-BPD samples on several demographic characteristics. Therefore, between-group analyses were conducted twice by correcting for these demographics, except for employment status. The difference in employment status was considered

related to BPD symptoms [100], hindering the ability to control for it [73]. Second, the non-clinical sample was selected using convenience sampling, which increased the risk of sampling bias and may limit the generalization of the findings [101]. Finally, MG-CFA was conducted without the Cluster-C PD sample, because of the low sample size. The measurement invariance across BPD and other clinical samples remains to be investigated in future research. In addition, MG-CFA was conducted using ML rather than WLSMV as the estimation method, due to an unequal number of item categories across groups. This approach was deemed suboptimal given the ordinal format of the uBPDc items. However, using ML was considered justified based on the number of response categories and the comparable fit indices of the one-factor model estimated with ML versus WLSMV [64,65].

Overall, the uBPDc demonstrated satisfactory psychometric properties in our samples, including good reliability and validity as well as adequate diagnostic accuracy. Additionally, a unidimensional construct with partial measurement invariance across groups was supported. Moreover, the short nature of the uBPDc, in combination with its sensitivity to change, renders the uBPDc an appealing option for evaluating BPD symptoms in clinical and research practice, particularly when frequent assessments are required or time is limited. In conclusion, although replication studies are indicated, the uBPDc appears to be an efficient screening tool and outcome instrument for borderline symptomatology.

#### CRediT authorship contribution statement

**Carlijn J.M. Wibbelink:** Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization, Writing – original draft. **Jan H. Kamphuis:** Supervision, Methodology, Funding acquisition, Conceptualization, Writing – review & editing. **Marieke Eftting:** Investigation, Writing – review & editing. **Roland Sinnaeve:** Methodology, Writing – review & editing, Funding acquisition. **Michiel Boog:** Resources, Writing – review & editing. **Eliane C.P. Dek:** Resources, Writing – review & editing. **Arnoud Arntz:** Supervision, Methodology, Conceptualization, Writing – review & editing, Funding acquisition.

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#### Declaration of competing interest

None.

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**Appendix A. Items of the uBPDc and Overview of Different Versions**

**Questionnaire**

During last month, to what extent were you troubled by:		Not at all	Slightly	Moderately	To a large degree	Extremely
1.	Fear that others will leave you	1	2	3	4	5
2.	Strong changes in feelings for other people	1	2	3	4	5
3.	Uncertainty about who you really are	1	2	3	4	5
4.	Impulsively doing unwise things (such as spending of too much money that you cannot afford to spend, binge eating, drinking too much, being reckless (e.g., in traffic))	1	2	3	4	5
5.	Injuring yourself on purpose (cutting, pricking, hitting, burning) or the urge to kill yourself	1	2	3	4	5
6.	Quick changes of mood	1	2	3	4	5
7.	Feeling bored or empty inside	1	2	3	4	5
8.	Hating yourself, everybody and the world	1	2	3	4	5
9.	Distrusting other people	1	2	3	4	5
10.	Anger outbursts	1	2	3	4	5
11.	Not feeling like yourself anymore, as if you are out of touch with reality or experiencing life like a movie or dream (not because of drugs)	1	2	3	4	5

**Versions**

Seven different versions of the uBPDc were examined to determine the optimal item composition:

- Version 1: comprises nine items, with the exclusion of items 10 and 11.
- Version 2: includes all 11 items, whereby for criteria 8 and 9 the average was calculated of the two items measuring the same criterion (criterion 8: items 8 and 10, criterion 9: items 9 and 11).
- Version 3: comprises 10 items, with the inclusion of item 8 and exclusion of item 10, and for criterion 9, the average was calculated of items 9 and 11.
- Version 4: comprises 10 items, with the inclusion of item 10 and exclusion of item 8, and for criterion 9, the average was calculated of items 9 and 11.
- Version 5: includes all 11 items, whereby for criteria 8 and 9 the highest score was selected among the two items measuring the same criterion (criterion 8: items 8 and 10, criterion 9: items 9 and 11).
- Version 6: comprises 10 items, with the inclusion of item 8 and exclusion of item 10, and for criterion 9, the highest score of items 9 and 11 was selected.
- Version 7: comprises 10 items, with the inclusion of item 10 and exclusion of item 8, and for criterion 9, the highest score of items 9 and 11 was selected.

**Appendix B. Psychometric Properties of the Seven uBPDc Versions and Between-Group Comparisons of Items 8 to 11**

**Table B.1**  
Psychometric Properties of Seven Different Versions of the uBPDc.

Psychometric property	Version 1	Version 2	Version 3	Version 4	Version 5	Version 6	Version 7
<b>Internal consistency (<math>\alpha</math>/ordinal <math>\alpha</math>)</b>							
Total group	0.91/0.93	0.91/0.93	0.91/0.93	0.91/0.93	0.92/0.93	0.91/0.93	0.91/0.93
BPD	0.79/0.83	0.80/0.83	0.80/0.84	0.78/0.82	0.80/0.83	0.79/0.83	0.78/0.81
Cluster-C PD	0.78/0.71	0.78/0.71	0.77/0.69	0.76/0.63	0.79/0.70	0.78/0.70	0.77/0.68
Non-clinical	0.75/0.71	0.76/0.77	0.76/0.77	0.76/0.77	0.78/0.80	0.76/0.77	0.76/0.77
<b>Internal consistency (<math>\omega</math>/ordinal <math>\omega</math>)</b>							
Total group	0.93/0.95	0.93/0.95	0.93/0.95	0.92/0.94	0.93/0.95	0.93/0.95	0.92/0.94
BPD	0.83/0.86	0.84/0.89	0.84/0.87	0.82/0.86	0.83/0.86	0.83/0.86	0.82/0.85
Cluster-C PD	0.85/0.77	0.84/0.80	0.83/0.76	0.82/0.71	0.85/0.75	0.85/0.76	0.83/0.77
Non-clinical	0.80/0.84	0.83/0.79	0.82/0.88	0.83/0.76	0.84/0.89	0.82/0.87	0.83/0.87
<b>Mean item-rest correlations</b>							
Total group	0.69	0.70	0.70	0.68	0.70	0.70	0.68
BPD	0.48	0.50	0.49	0.47	0.49	0.48	0.46
Cluster-C PD	0.46	0.46	0.45	0.43	0.47	0.46	0.44
Non-clinical	0.42	0.45	0.43	0.44	0.46	0.44	0.44
<b>Concurrent validity (<math>r</math>)</b>							
Number of BPD symptoms (SCID-5-PD/SPQ)							
Total group <sup>1,2</sup>	0.72***	0.72***	0.72***	0.73***	0.72***	0.72***	0.72**
BPD	0.30***	0.31***	0.30***	0.31***	0.29***	0.29***	0.30***
Cluster-C PD <sup>2</sup>	0.32***	0.33***	0.33***	0.32***	0.33***	0.32***	0.33***
Non-clinical <sup>2</sup>	0.45***	0.44***	0.45***	0.44***	0.44***	0.45***	0.44***
Severity of BPD symptoms (BPDSI-5)							
BPD	0.49***	0.49***	0.49***	0.49***	0.48***	0.48***	0.48***
<b>Known-group validity</b>							
BPD vs. Cluster-C PD							
t-value (p-value)	-9.09***	-10.70***	-10.30***	-10.97***	-9.37***	-9.22***	-9.70***

(continued on next page)

**Table B.1** (continued)

Psychometric property	Version 1	Version 2	Version 3	Version 4	Version 5	Version 6	Version 7
Cohen's <i>d</i>	1.36	1.41	1.37	1.44	1.40	1.38	1.45
BPD vs. Cluster-C PD – corrected <sup>3</sup>							
<i>F</i> -value ( <i>p</i> -value)	74.29***	79.26***	75.08***	81.93***	79.33***	76.77***	83.75***
Cohen's <i>d</i>	1.33	1.38	1.34	1.40	1.38	1.36	1.42
BPD vs. non-clinical							
<i>t</i> -value ( <i>p</i> -value)	-27.45***	-27.07***	-27.07***	-26.85***	-27.43***	-27.31***	-27.07***
Cohen's <i>d</i>	2.79	2.76	2.74	2.74	2.83	2.79	2.79
BPD vs. non-clinical – corrected <sup>4</sup>							
<i>F</i> -value ( <i>p</i> -value)	514.19	502.45	500.02	495.45	530.41	518.06	512.76
Cohen's <i>d</i>	2.76	2.73	2.73	2.71	2.81	2.77	2.76

Note. BPDSI-5 = Borderline Personality Disorder Severity Index version 5; SCID-5-PD = Structured Clinical Interview for DSM-5 Personality Disorders; SCID-5-SPQ = Structured Clinical Interview for DSM-5 Screening Personality Questionnaire.

<sup>1</sup> Since the range of the SCID-5-PD scores was twice as large as the range of the SCID-5-SPQ scores, the SCID-5-PD scores were first divided by two before being combined into one variable.

<sup>2</sup> Spearman correlations were calculated, due to a severe violation of the normality assumption.

<sup>3</sup> Based on ANCOVA, corrected for age, gender, and Dutch ethnicity.

<sup>4</sup> Based on ANCOVA, corrected for Dutch ethnicity.

\*\*\* *p* < .001.

**Table B.2**

Discriminant Validity of the uBPDc Items Under Discussion.

Item	<i>M</i> BPD	<i>M</i> Cluster-C PD	<i>M</i> Non- clinical	<i>t</i> -value BPD vs. Cluster-C PD	<i>d</i> BPD vs. Cluster-C PD	<i>t</i> -value BPD vs. Non- clinical	<i>d</i> BPD vs. Non- clinical
Criterion 8							
Item 8 (hate)	2.94	2.04	1.17	-5.12***	0.72	-17.58***	1.64
Item 10 (anger outbursts)	2.37	1.39	1.16	-8.34***	0.92	-13.57***	1.25
Average items 8 and 10	2.65	1.71	1.16	-8.370***	0.99	-18.96***	1.75
Highest score items 8 and 10	3.22	2.21	1.26	-5.89***	0.86	-19.92***	1.94
Criterion 9							
Item 9 (paranoid)	3.38	2.53	1.53	-4.63***	0.69	-16.92***	1.70
Item 11 (dissociation)	2.26	1.56	1.20	-4.60***	0.57	-10.19***	0.96
Average items 9 and 11	2.82	2.04	1.37	-5.28***	0.79	-17.38***	1.68
Highest score items 9 and 11	3.56	2.61	1.63	-5.39***	0.81	-17.82***	1.85

\*\*\* *p* < .001.

**Appendix C. Item-Rest Correlations and Mean Scores of the Final uBPDc Items**

**Table C.1**

Item-rest Correlations (*r*<sub>ir</sub>) and Mean scores of the uBPDc items.

Item	Total group		<i>r</i> <sub>ir</sub>	BPD		Cluster-C PD		Non-clinical	
	<i>r</i> <sub>ir</sub>	<i>M</i>		<i>r</i> <sub>ir</sub>	<i>M</i>	<i>r</i> <sub>ir</sub>	<i>M</i>	<i>r</i> <sub>ir</sub>	<i>M</i>
Item 1	0.69	2.83	0.43	3.52	0.43	2.53	0.55	1.61	
Item 2	0.73	2.75	0.52	3.50	0.59	2.03	0.51	1.66	
Item 3	0.72	3.23	0.47	3.90	0.63	3.41	0.58	1.82	
Item 4	0.65	2.68	0.44	3.38	0.25	2.09	0.29	1.61	
Item 5	0.50	1.58	0.33	1.98	0.19	1.17	0.11	1.02	
Item 6	0.79	2.93	0.60	3.75	0.39	2.36	0.50	1.60	
Item 7	0.74	3.21	0.46	3.92	0.68	3.19	0.61	1.82	
Recoded item 8 <sup>1</sup>	0.78	2.50	0.61	3.22	0.48	2.21	0.52	1.26	
Recoded item 9 <sup>2</sup>	0.74	2.87	0.53	3.56	0.56	2.64	0.44	1.63	

<sup>1</sup> Highest score of items 8 and 10.

<sup>2</sup> Highest score of items 9 and 11.

**References**

[1] Ellison WD, Rosenstein LK, Morgan TA, Zimmerman M. Community and clinical epidemiology of borderline personality disorder. *Psychiatr Clin N Am* 2018;41. <https://doi.org/10.1016/j.psc.2018.07.008>.

[2] Leichsenring F, Fonagy P, Heim N, Kernberg OF, Leweke F, Luyten P, et al. Borderline personality disorder: a comprehensive review of diagnosis and clinical presentation, etiology, treatment, and current controversies. *World Psychiatry* 2024;23:4–25. <https://doi.org/10.1002/wps.21156>.

[3] ten Have M, Verheul R, Kaasenbrood A, van Dorsselaer S, Tuithof M, Kleinjan M, et al. Prevalence rates of borderline personality disorder symptoms: a study based on the Netherlands mental health survey and incidence Study-2. *BMC Psychiatry* 2016;16:249. <https://doi.org/10.1186/s12888-016-0939-x>.

[4] American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 5th ed. APA Publishing; 2013.

- [5] Dixon LJ, Linardon J. A systematic review and meta-analysis of dropout rates from dialectical behaviour therapy in randomized controlled trials. *Cogn Behav Ther* 2020;49:181–96. <https://doi.org/10.1080/16506073.2019.1620324>.
- [6] Laurensen EMP, Eeren HV, Kikkert MJ, Peen J, Westra D, Dekker JJM, et al. The burden of disease in patients eligible for mentalization-based treatment (MBT): quality of life and costs. *Health Qual Life Outcomes* 2016;14. <https://doi.org/10.1186/s12955-016-0538-z>.
- [7] El-Gabalawy R, Katz LY, Sareen J. Comorbidity and associated severity of borderline personality disorder and physical health conditions in a nationally representative sample. *Psychosom Med* 2010;72:641–7. <https://doi.org/10.1097/PSY.0b013e3181e10c7b>.
- [8] Paris J. Suicidality in Borderline Personality Disorder *Medicina (B Aires)* 2019; 2019. p. 223. <https://doi.org/10.3390/medicina55060223>.
- [9] Tomko RL, Trull TJ, Wood PK, Sher KJ. Characteristics of borderline personality disorder in a community sample: comorbidity, treatment utilization, and general functioning. *J Personal Disord* 2014;28:734–50. [https://doi.org/10.1521/pedi\\_2012\\_26\\_093](https://doi.org/10.1521/pedi_2012_26_093).
- [10] Wibbelink CJM, Arntz A, Kamphuis JH, Groot IZ, Sinnaeve R, Evers SMAA. Burden of disease of borderline personality disorder: a comprehensive evaluation of quality of life and societal cost of illness. *J Clin Psychol* 2025. <https://doi.org/10.1002/jclp.70000>.
- [11] Ansell EB, Sanislow CA, McGlashan TH, Grilo CM. Psychosocial impairment and treatment utilization by patients with borderline personality disorder, other personality disorders, mood and anxiety disorders, and a healthy comparison group. *Compr Psychiatry* 2007;48:329–36. <https://doi.org/10.1016/j.comppsy.2007.02.001>.
- [12] Bode K, Vogel R, Walker J, Kröger C. Health care costs of borderline personality disorder and matched controls with major depressive disorder: a comparative study based on anonymized claims data. *Eur J Health Econ* 2017;18:1125–35. <https://doi.org/10.1007/s10198-016-0858-2>.
- [13] Gregory R, Sperry SD, Williamson D, Kuch-Cecconi R, Spink GL. High prevalence of borderline personality disorder among psychiatric inpatients admitted for suicidality. *J Personal Disord* 2021;35. [https://doi.org/10.1521/pedi\\_2021\\_35\\_508](https://doi.org/10.1521/pedi_2021_35_508).
- [14] de Vet HCW, Terwee CB, Mokkink LB, Knol DL. *Measurement in medicine*. Cambridge University Press; 2011. <https://doi.org/10.1017/CBO9780511996214>.
- [15] Comtois KA, Carmel A. Borderline personality disorder and high utilization of inpatient psychiatric hospitalization: concordance between research and clinical diagnosis. *J Behav Health Serv Res* 2016;43:272–80. <https://doi.org/10.1007/s11414-014-9416-9>.
- [16] Zimmerman M, Mattia JI. Differences between clinical and research practices in diagnosing borderline personality disorder. *Am J Psychiatry* 1999;156. <https://doi.org/10.1176/ajp.156.10.1570>.
- [17] Zimmerman M, Galione JN, Ruggero CJ, Chelminski I, Young D, Dalrymple K, et al. Screening for bipolar disorder and finding borderline personality disorder. *J Clin Psychiatry* 2010;71:1212–7. <https://doi.org/10.4088/JCP.09m05161yel>.
- [18] Culina I, Maillard P, Loosli J, Martin-Soelch B, Berner S, Kolly S, et al. Validation of the French version of the revised diagnostic interview for borderlines (DIB-R) for assessing the psychopathology of borderline personality disorder. *Borderline Person Disord Emot Dysregul* 2023;10:27. <https://doi.org/10.1186/s40479-023-00233-0>.
- [19] Zimmerman M, Balling C. Screening for borderline personality disorder with the mclean screening instrument: a review and critique of the literature. *J Personal Disord* 2021;35. [https://doi.org/10.1521/pedi\\_2019\\_33\\_451](https://doi.org/10.1521/pedi_2019_33_451).
- [20] Aronen ET, Noam GG, Weinstein SR. Structured diagnostic interviews and clinicians' discharge diagnoses in hospitalized adolescents. *J Am Acad Child Adolesc Psychiatry* 1993;32:674–81. <https://doi.org/10.1097/00004583-199305000-00027>.
- [21] Lewczyk CM, Garland AF, Hurlburt MS, Gearing J, Hough RL. Comparing DISC-IV and clinician diagnoses among youths receiving public mental health services. *J Am Acad Child Adolesc Psychiatry* 2003;42. <https://doi.org/10.1097/00004583-200303000-00016>.
- [22] Magnavita JJ, Levy KN, Critchfield KL, Lebow JL. Ethical considerations in treatment of personality dysfunction: Using evidence, principles, and clinical judgment. *Prof Psychol Res Pr*; 2010. p. 41. <https://doi.org/10.1037/a0017733>.
- [23] First MB, Williams JB, Benjamin L, Spitzer RL. *User's guide for the SCID-5-PD (structured clinical interview for DSM-5 personality disorder)*. Arlington, VA: American Psychiatric Association; 2015.
- [24] Zanarini MC, Gunderson JG, Frankenburg FR, Chauncey DL. The revised diagnostic interview for borderlines: discriminating BPD from other Axis II disorders. *J Personal Disord* 1989;3. <https://doi.org/10.1521/pedi.1989.3.1.10>.
- [25] Bloo J, Arntz A, Schouten E. The borderline personality disorder checklist: psychometric evaluation and factorial structure in clinical and nonclinical samples. *Roczniki Psychologiczne* 2017;20:311–36. <https://doi.org/10.18290/rpsych.2017.20.2-3en>.
- [26] Siefert CJ. Screening for personality disorders in psychiatric settings: four recently developed screening measures. *Handbook Clin Rat Scales Assess Psychiatry Mental Health* 2009. [https://doi.org/10.1007/978-1-59745-387-5\\_6](https://doi.org/10.1007/978-1-59745-387-5_6).
- [27] Widiger TA, Hines A, Crego C. Evidence-based assessment of personality disorder. *Assessment* 2024;31. <https://doi.org/10.1177/10731911231176461>.
- [28] Zanarini MC, Vujanovic AA, Parachini EA, Boulanger JL, Frankenburg FR, Hennen J. A screening measure for BPD: the McLean screening instrument for borderline personality disorder (MSI-BPD). *J Personal Disord* 2003;17:568–73. <https://doi.org/10.1521/pedi.17.6.568.25355>.
- [29] Arntz A, Bernstein D, Gielen D, van Nieuwenhuyzen M, Penders K, Haslam N, et al. Taxometric evidence for the dimensional structure of Cluster-C, paranoid, and borderline personality disorders. *J Personal Disord* 2009;23:606–28. <https://doi.org/10.1521/pedi.2009.23.6.606>.
- [30] Rothschild L, Cleland C, Haslam N, Zimmerman M. A Taxometric study of borderline personality disorder. *J Abnorm Psychol* 2003;112. <https://doi.org/10.1037/0021-843X.112.4.657>.
- [31] Zimmerman M, Chelminski I, Young D, Dalrymple K, Martinez J. Is dimensional scoring of borderline personality disorder important only for subthreshold levels of severity? *J Personal Disord* 2013;27. [https://doi.org/10.1521/pedi\\_2012\\_26\\_022](https://doi.org/10.1521/pedi_2012_26_022).
- [32] Rolstad S, Adler J, Rydén A. Response burden and questionnaire length: is shorter better? A review and meta-analysis. *Value Health* 2011;14. <https://doi.org/10.1016/j.jval.2011.06.003>.
- [33] Hoerger M. Participant dropout as a function of survey length in internet-mediated university studies: implications for study design and voluntary participation in psychological research. *Cyberpsychol Behav Soc Netw* 2010;13. <https://doi.org/10.1089/cyber.2009.0445>.
- [34] Eisele G, Vachon H, Laftit G, Kuppens P, Houben M, Myin-Germeys I, et al. The effects of sampling frequency and questionnaire length on perceived burden, compliance, and careless responding in experience sampling data in a student population. *Assessment* 2022;29:136–51. <https://doi.org/10.1177/1073191120957102>.
- [35] Wibbelink CJM, Arntz A, Grasman RPPP, Sinnaeve R, Boog M, Bremer OMC, et al. Towards optimal treatment selection for borderline personality disorder patients (BOOTS): a study protocol for a multicenter randomized clinical trial comparing schema therapy and dialectical behavior therapy. *BMC Psychiatry* 2022;22:89. <https://doi.org/10.1186/s12888-021-03670-9>.
- [36] Wibbelink CJM, Arntz A. Psychometric properties of the ultrashort BPD checklist. 2019.
- [37] Giesen-Bloo JH, Wachters LM, Schouten E, Arntz A. The borderline personality disorder severity index-IV: psychometric evaluation and dimensional structure. *Personal Individ Differ* 2010;49:136–41. <https://doi.org/10.1016/j.paid.2010.03.023>.
- [38] Arntz A, van den Hoorn M, Cornelis J, Verheul R, van den Bosch WMC, de Bie AJHT. Reliability and validity of the borderline personality disorder severity index. *J Personal Disord* 2003;17:45–59. <https://doi.org/10.1521/pedi.17.1.45.24053>.
- [39] First MB, Williams JB, Benjamin L, Spitzer RL. *Structured clinical interview for DSM-5 screening personality questionnaire (SCID-5-SPQ)*. Arlington, VA: American Psychiatric Association; 2016.
- [40] Groot IZ, Venhuizen A-SSM, Bachrach N, Walhout S, de Moor B, Nikkels K, et al. Design of an RCT on cost-effectiveness of group schema therapy versus individual schema therapy for patients with Cluster-C personality disorder: the QUEST-CLC study protocol. *BMC Psychiatry* 2022;22:637. <https://doi.org/10.1186/s12888-022-04248-9>.
- [41] First MB, Williams JBW, Karg RS, Spitzer RL. *Gestructureerd klinisch interview voor DSM-5 Syndroomstoornissen (SCID-5-S). Nederlandse vertaling van structural clinical interview for DSM-5® disorders-clinician version (SCID-5-CV) en user's guide to structured clinical interview for DSM-5® disorders-C*. Amsterdam: Boom; 2018.
- [42] Bayad S, Alp Topbas O, Kocabas T, Elbir M, Gokten Ulusoy D, Korkmaz U, et al. Adaptation and the psychometric properties of Turkish version of the structured clinical interview for the DSM-5-personality disorders - clinician version (SCID-5-PD/CV). *Turk J Psychiatry* 2020. <https://doi.org/10.5080/u25484>.
- [43] Ekselius L, Lindström E, von Knorring L, Bodlund O, Kullgren G. SCID II interviews and the SCID screen questionnaire as diagnostic tools for personality disorders in DSM-III-R. *Acta Psychiatr Scand* 1994;90:120–3. <https://doi.org/10.1111/j.1600-0447.1994.tb01566.x>.
- [44] Gharraee B, Shabani A, Masoumian S, Zamirinejad S, Yaghmaeezadeh H, Khanjani S, et al. Psychometric properties of Persian version of structured clinical interview for DSM-5 for personality disorders. *East Asian Arch Psychiatr* 2022;32. <https://doi.org/10.12809/eaap2208>.
- [45] Jacobsberg L, Perry S, Frances A. Diagnostic agreement between the SCID-II screening questionnaire and the personality disorder examination. *J Pers Assess* 1995;65. [https://doi.org/10.1207/s15327752jpa6503\\_4](https://doi.org/10.1207/s15327752jpa6503_4).
- [46] Somma A, Borroni S, Maffei C, Besson E, Garbini A, Granozio S, et al. Inter-rater reliability of the Italian translation of the structured clinical interview for DSM-5 personality disorders (SCID-5-PD): a study on consecutively admitted clinical adult participants. *J Psychopathol* 2017;23:105–11.
- [47] Gadermann AM, Guhn M, Zumbo BD. Estimating ordinal reliability for likert-type and ordinal item response data: A conceptual, empirical, and practical guide. *Practical Assessment, Research and Evaluation*; 2012. p. 17.
- [48] Zumbo BD, Gadermann AM, Zeisser C. Ordinal versions of coefficients alpha and theta for likert rating scales. *J Mod Appl Stat Methods* 2007;6. <https://doi.org/10.22237/jmasm/1177992180>.
- [49] Watkins MW. The reliability of multidimensional neuropsychological measures: from alpha to omega. *Clin Neuropsychol* 2017;31. <https://doi.org/10.1080/13854046.2017.1317364>.
- [50] Zijlman EAO, Tijmstra J, van der Ark LA, Sijtsma K. Item-score reliability as a selection tool in test construction. *Front Psychol* 2019;9. <https://doi.org/10.3389/fpsyg.2018.02298>.
- [51] Statistical Cohen J, Analysis Power. *Curr Dir Psychol Sci* 1992;1:98–101. <https://doi.org/10.1111/1467-8721.ep10768783>.
- [52] Swets JA. Measuring the accuracy of diagnostic systems. *Science* 1979;1988 (240):1285–93. <https://doi.org/10.1126/science.3287615>.

- [53] Youden WJ. Index for rating diagnostic tests. *Cancer* 1950;3. [https://doi.org/10.1002/1097-0142\(1950\)3:1<32::AID-CNCR2820030106>3.0.CO;2-3](https://doi.org/10.1002/1097-0142(1950)3:1<32::AID-CNCR2820030106>3.0.CO;2-3).
- [54] Perkins NJ, Schisterman EF. The inconsistency of "optimal" cutpoints obtained using two criteria based on the receiver operating characteristic curve. *Am J Epidemiol* 2006;163. <https://doi.org/10.1093/aje/kwj063>.
- [55] Liu X. Classification accuracy and cut point selection. *Stat Med* 2012;31. <https://doi.org/10.1002/sim.4509>.
- [56] Zimmerman M, Mattia JI. A self-report scale to help make psychiatric diagnoses: the psychiatric diagnostic screening questionnaire. *Arch Gen Psychiatry* 2001;58. <https://doi.org/10.1001/archpsyc.58.8.787>.
- [57] Wells CS. Assessing measurement invariance for applied research. Cambridge University Press; 2021. <https://doi.org/10.1017/9781108750561>.
- [58] Bentler PM. Comparative fit indexes in structural models. *Psychol Bull* 1990;107:238–46. <https://doi.org/10.1037/0033-2909.107.2.238>.
- [59] Tucker LR, Lewis C. A reliability coefficient for maximum likelihood factor analysis. *Psychometrika* 1973;38. <https://doi.org/10.1007/BF02291170>.
- [60] Browne MW, Cudeck R. Single sample cross-validation indices for covariance structures. *Multivar Behav Res* 1989;24:445–55. <https://doi.org/10.1207/s15327906mbr2404.4>.
- [61] Kline RB. Principles and practices of structural equation modelling. 4th ed. New York: The Guilford Press; 2016.
- [62] Wang J, Wang X. Structural equation modeling: Applications using mplus. 2019. <https://doi.org/10.1002/9781119422730>.
- [63] Robitzsch A. Why ordinal variables can (almost) always be treated as continuous variables: clarifying assumptions of robust continuous and ordinal factor analysis estimation methods. *Front Educ (Lausanne)* 2020;5. <https://doi.org/10.3389/feeduc.2020.589965>.
- [64] Rhemtulla M, Brosseau-Liard PÉ, Savalei V. When can categorical variables be treated as continuous? A comparison of robust continuous and categorical SEM estimation methods under suboptimal conditions. *Psychol Methods* 2012;17. <https://doi.org/10.1037/a0029315>.
- [65] Sass DA, Schmitt TA, Marsh HW. Evaluating model fit with ordered categorical data within a measurement invariance framework: a comparison of estimators. *Struct Equ Model* 2014;21. <https://doi.org/10.1080/10705511.2014.882658>.
- [66] Meredith W. Measurement invariance, factor analysis and factorial invariance. *Psychometrika* 1993;58. <https://doi.org/10.1007/BF02294825>.
- [67] Putnick DL, Bornstein MH. Measurement invariance conventions and reporting: the state of the art and future directions for psychological research. *Dev Rev* 2016;41. <https://doi.org/10.1016/j.dr.2016.06.004>.
- [68] Chen FF. Sensitivity of goodness of fit indexes to lack of measurement invariance. *Struct Equ Model* 2007;14:464–504. <https://doi.org/10.1080/10705510701301834>.
- [69] LindaK Muthén, BengtO Muthén. Mplus user's guide: statistical analysis with latent variables, user's guide. Journal 2017;20.
- [70] R Core Team. R: A language and environment for statistical computing. Vienna, Austria: R Foundation for Statistical Computing; 2022. p. 2022.
- [71] Revelle MW. psych: Procedures for personality and psychological research (R package). October 2017.
- [72] IBM Corp. IBM SPSS statistics for windows, version 28.0. 2021.
- [73] Miller GA, Chapman JP. Misunderstanding analysis of covariance. *J Abnorm Psychol* 2001;110. <https://doi.org/10.1037/0021-843X.110.1.40>.
- [74] Tavakol M, Dennick R. Making sense of Cronbach's alpha. *Int J Med Educ* 2011;2. <https://doi.org/10.5116/ijme.4dfb.8dfb>.
- [75] Fossati A, Barratt ES, Borroni S, Villa D, Grazioli F, Maffei C. Impulsivity, aggressiveness, and DSM-IV personality disorders. *Psychiatry Res* 2007;149. <https://doi.org/10.1016/j.psychres.2006.03.011>.
- [76] Linhartová P, Širůček J, Ejova A, Barteček R, Theiner P, Kašpárek T. Dimensions of impulsivity in healthy people, patients with borderline personality disorder, and patients with attention-deficit/hyperactivity disorder. *J Atten Disord* 2021;25. <https://doi.org/10.1177/1087054718822121>.
- [77] Pompili M, Girardi P, Ruberto A, Tatarelli R. Suicide in borderline personality disorder: a meta-analysis. *Nord J Psychiatry* 2005;59. <https://doi.org/10.1080/08039480500320025>.
- [78] Yen S, Shea MT, Pagano M, Sanislow CA, Grilo CM, McGlashan TH, et al. Axis I and Axis II disorders as predictors of prospective suicide attempts: findings from the collaborative longitudinal personality disorders study. *J Abnorm Psychol* 2003;112. <https://doi.org/10.1037/0021-843X.112.3.375>.
- [79] Davidson M. Known-Groups Validity. Encyclopedia of quality of life and well-being research. Cham: Springer International Publishing; 2023. [https://doi.org/10.1007/978-3-031-17299-1\\_1581](https://doi.org/10.1007/978-3-031-17299-1_1581). 3764–3764.
- [80] Lohanan T, Leesawat T, Wongpakaran T, Wongpakaran N, Karawekpanyawong N, Oon-Arom A, et al. Development and validation of a screening instrument for borderline personality disorder (SI-Bord) for use among university students. *BMC Psychiatry* 2020;20. <https://doi.org/10.1186/s12888-020-02807-6>.
- [81] Hyler SE. Personality diagnostic Questionnaire-4 (PDQ-4). 1994.
- [82] Loranger AW. International personality disorder examination (IPDE): DSM-IV and ICD-10 interviews. Psychological Assessment Resources; 1999.
- [83] Chanen AM, Jovev M, Djaja D, McDougall E, Yuen HP, Rawlings D, et al. Screening for borderline personality disorder in outpatient youth. *J Personal Disord* 2008;22:353–64. <https://doi.org/10.1521/pedi.2008.22.4.353>.
- [84] Van Alebeek A, Van Den Heijden PT, Hessels C, Thong MSY, Van Aken M. Comparison of three questionnaires to screen for borderline personality disorder in adolescents and young adults. *Eur J Psychol Assess* 2017;33. <https://doi.org/10.1027/1015-5759/a000279>.
- [85] Kernberg OF. Severe personality disorders: Psychotherapeutic strategies. Yale University Press; 1984.
- [86] Linehan MM. Cognitive-behavioral treatment of borderline personality disorder. Guilford Press; 1993.
- [87] Martin JA, Levy KN. Chronic feelings of emptiness in a large undergraduate sample: starting to fill the void. *Personal Ment Health* 2022;16. <https://doi.org/10.1002/pmh.1531>.
- [88] Mearns R, Gerull F, Stevenson J, Korner A. Is self disturbance the core of borderline personality disorder? An outcome study of borderline personality factors. *Aust N Z J Psychiatry* 2011;45. <https://doi.org/10.3109/00048674.2010.551280>.
- [89] Miller CE, Townsend ML, Day NJS, Grenyer BFS. Measuring the shadows: a systematic review of chronic emptiness in borderline personality disorder. *PLoS One* 2020;15. <https://doi.org/10.1371/journal.pone.0233970>.
- [90] Miller CE, Townsend ML, Grenyer BFS. Understanding chronic feelings of emptiness in borderline personality disorder: a qualitative study. *Borderline Person Disord Emot Dysregul* 2021;8. <https://doi.org/10.1186/s40479-021-00164-8>.
- [91] Clarkin JF, Hull JW, Hurt SW. Factor structure of borderline personality disorder criteria. *J Personal Disord* 1993;7:137–43. <https://doi.org/10.1521/pedi.1993.7.2.137>.
- [92] Ramos V, Canta G, de Castro F, Leal I. Discrete subgroups of adolescents diagnosed with borderline personality disorder: a latent class analysis of personality features. *J Personal Disord* 2014;28. <https://doi.org/10.1521/pedi.2013.27.126>.
- [93] Sanislow CA, Grilo CM, McGlashan TH. Factor analysis of the DSM-III-R borderline personality disorder criteria in psychiatric inpatients. *Am J Psychiatry* 2000;157. <https://doi.org/10.1176/appi.ajp.157.10.1629>.
- [94] Sanislow CA, Grilo CM, Morey LC, Bender DS, Skodol AE, Gunderson JG, et al. Confirmatory factor analysis of DSM-IV criteria for borderline personality disorder: findings from the collaborative longitudinal personality disorders study. *Am J Psychiatry* 2002;159. <https://doi.org/10.1176/appi.ajp.159.2.284>.
- [95] Dimitrov DM. Testing for factorial invariance in the context of construct validation. *Meas Eval Couns Dev* 2010;43:121–49. <https://doi.org/10.1177/0748175610373459>.
- [96] Steenkamp JBEM, Baumgartner H. Assessing measurement invariance in cross-national consumer research. *J Consum Res* 1998;25. <https://doi.org/10.1086/209528>.
- [97] Vandenberg RJ, Lance CE. A review and synthesis of the measurement invariance literature: suggestions, practices, and recommendations for organizational research. *Organ Res Methods* 2000;3. <https://doi.org/10.1177/109442810031002>.
- [98] Byrne BM, Shavelson RJ, Muthén B. Testing for the equivalence of factor covariance and mean structures: the issue of partial measurement invariance. *Psychol Bull* 1989;105:456–66. <https://doi.org/10.1037/0033-2909.105.3.456>.
- [99] Steinmetz H. Analyzing observed composite differences across groups: is partial measurement invariance enough? *Methodology* 2013;9. <https://doi.org/10.1027/1614-2241/a000049>.
- [100] Sansone RA, Wiederman MW. Losing a job on purpose: relationships with borderline personality symptomatology. *Early Interv Psychiatry* 2013;7. <https://doi.org/10.1111/eip.12014>.
- [101] Alan Bryman. Social research method. 4th ed. Oxford University Press; 2016.