

Research article

Borderline Personality Features Scale for Children - 11: Psychometric properties in a Greek early adolescent clinical sample from a community child and adolescent mental health service.

Iouliani Koullourou,¹ Konstantinos Kotsis,¹ Giovanni Abrahão Salum,² Carla Sharp,³ Emmanouel Tsalamaniotis,⁴ Evangelia Karagiannopoulou,⁵ Thomas Hyphantis,¹ Christos Mantas¹

¹University of Ioannina, Faculty of Medicine, Department of Psychiatry, Ioannina, Greece

²Child Mind Institute, New York, USA

³University of Houston, Department of Psychology, Houston, Texas, USA

⁴General Hospital Asklepieio, Department of Child and Adolescent Psychiatry, Athens, Greece

⁵University of Ioannina, Department of Psychology, Ioannina, Greece

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ABSTRACT

Borderline personality disorder (BPD) is a severe mental health condition typically identified in adolescence. We aim to investigate the factor structure, internal consistency, item analysis, convergent validity, and diagnostic accuracy of the Greek version of the Borderline Personality Features Scale for Children-11 (BPFSC-11). A sample of 112 early adolescents aged 11 to 14 years was recruited from an outpatient community child and adolescent mental health service. Confirmatory Factor Analysis was used to explore the fit of the unidimensional model to our sample. Reliability was assessed using the omega coefficient, and regression analysis was employed to evaluate convergent validity with the dysregulation profile of psychopathology, as measured by the Youth Self Report (YSR). Item analysis was assessed via Item Response Theory, while criterion validity was evaluated against clinical evaluation using the ROC curve. We found that BPFSC-11 did not fit the data well, while a 9-item version provided a good fit (RMSEA = 0.058, CFI = 0.986, TLI = 0.982). Reliability was strong ($\omega = 0.81$). Convergent validity was demonstrated, as adolescents with high scores on the dysregulation profile of the YSR had statistically significantly higher summed scores on the BPFSC. The ROC curve analysis suggested high diagnostic accuracy (AUC=0.86). Sensitivity at the optimum cut-off point of 26 was found to be 0.88, while specificity was 0.75. Our study presents evidence for the reliability and validity of the BPFSC and provides a cut-off point for its use in outpatient clinical settings to timely identify adolescents with high borderline personality traits.

KEYWORDS: Borderline personality, community child and adolescent mental health service, early adolescence, psychometrics.

Introduction

Borderline personality disorder (BPD) is a severe mental health condition characterized by identity problems, instability of interpersonal relationships, and emotional dysregulation.¹ Recent evidence suggests that traits of

BPD (BPTs) typically start in adolescence²⁻⁴ and a noticeable proportion of adolescents evolve to present BPD in adulthood.⁵ BPD affects 2-3% of adolescents in the community and is associated with poor outcomes such as problems in school and work, difficulties in friendships

Corresponding author: Konstantinos Kotsis, 1st Department of Psychiatry, Department of Psychiatry, Faculty of Medicine, School of Health Sciences, University of Ioannina, 45110 Ioannina, Greece; Email: konkotsis@uoi.gr

and romantic relationships, increased service use, and high-risk behaviors. This disorder is particularly prevalent in outpatient mental health services, affecting approximately 11% - 22% of patients⁶⁻¹⁰ and in inpatient services affecting up to 33%⁶⁻⁹ of patients. Furthermore, some studies suggest the prevalence of BPD is increasing over time,^{11,12} particularly in girls.¹³ Therefore, having reliable tools to assess BPD is essential to continue to advance research for adolescents with BPTs.

One of the most used tools assessing borderline features is the Borderline Personality Features Scale for Children (BPFS-C). This tool was developed by Crick et al.¹⁴ and measures key domains such as affective instability, identity problems, negative relationships, and self-harm behaviors. The BPFS-C has shown adequate validity, reliability, and consistency, with features assessed demonstrating moderate stability over time. The authors of the original scale provided support for the construct validity, as the indicators of borderline pathology based on the developmental psychopathology model, such as emotional sensitivity and aggression, were tracked together with BPTs over a period of one year.¹⁴ In addition, Sharp et al.¹⁵ demonstrated concurrent validity of BPFS-C by providing evidence that youth with borderline features have poorer clinical and psychosocial functioning. As the only dimensional tool specifically developed for screening BPD in children aged 9 years and older, the BPFS-C serves as a valuable resource for researchers and clinicians working to identify and understand borderline personality features in this age group.

The BPFS-C original instrument consists of 24 items in a 4-factor structure. However, Sharp et al.¹⁶ found that this structure was not supported in an adolescent community sample. Using Item Response Theory, they found evidence for a shorter unidimensional version, consisting of 11 items (BPFS-11) with good reliability (Cronbach's alpha = 0.85). This shorter version of BPFS-11 has been translated and validated in various languages, indicating the relevance of assessing BPTs in different countries and cultures.¹⁷⁻²³

Despite its widespread use, there are still important questions to be addressed regarding the BPFS-C 11-item factor structure and adequacy of the item pool. The Italian version²⁰ was tested in a community sample. While it demonstrated acceptable reliability overall, item 3 ('My feelings are very strong') exhibited appropriate factor loadings only in specific populations, not across all groups. Second, the Portuguese validation presented with adequate reliability but with a unidimensional structure of a 10-item, excluding item 11 ('Lots of times, my friends and I are really mean to each other.'). Third, the Turkish validation study²³ also supported a unidimensional 10-item scale, but with the exclusion of item 3. Therefore, the ideal item pool for the instrument is still a focus of important empirical examination.

Furthermore, cultural context significantly influences the experience, expression, and reporting of psychopathological symptoms.^{24,25} Evidence also suggests that cross-cultural differences affect the perceived utility of emotions and emotion regulation—both central constructs in borderline personality disorder (BPD).²⁶ Cross-cultural studies have demonstrated that adolescents from different cultural backgrounds report varying levels of anxiety and depressive symptoms.²⁷ For instance, Greek adolescents have been shown to exhibit distinct patterns of anxiety compared to their Irish counterparts.²⁸ These differences are further reflected in general psychopathology research, where relevant assessment instruments have been standardized for the Greek population.²⁹ Additionally, the diagnostic criteria for personality disorders explicitly state that such disorders involve "an enduring pattern of inner experience and behavior that deviates markedly from the expectations of the individual's culture," underscoring the critical role of cultural context in diagnosis.³⁰ This cultural dimension further underscores the importance of examining the item pool of the scale to ensure its relevance and sensitivity across diverse cultural contexts.

The present study aimed to test the factor structure, reliability (internal consistency), item analysis, and convergent validity (in relation to the dysregulation profile of psychopathology) of the BPFS-11 in an outpatient clinical sample comprised of early adolescents. Given the controversies in the literature regarding the item pool, we tested the BPFS 11-item version, as well as two different ten-item versions, one excluding item 3, and one excluding item 11, and eventually a nine-item version excluding items 3 and 11. Moreover, we aimed to establish the criterion validity by examining how well it discriminates patients with BPTs and explore its diagnostic accuracy in identifying adolescents with clinically meaningful BPTs. We hypothesized that BPFS will be a reliable tool that measures BPTs, and we expected that establishing a cut-off score will consequently help clinicians to early detect those traits, given the total gap of tools for BPTs in Greece.

Methods

Participants

All children aged 11-14 years old who sought a psychiatric assessment in a Community Child and Adolescent Mental Health Service between June 2022 and September 2024 were invited to participate in the study. Exclusion criteria were the inability to read and write in Greek and the presence of psychotic symptoms and moderate and lower levels of intellectual developmental disability. The sample was composed of 112 (out of 124 invited; participation rate: 90.3%) early adolescents aged 11 to 14 years (mean = 12.8, SD=1.16). There were 63 girls (56.3%) and 48 boys (43.7%). Adolescents were

assessed by an experienced child and adolescent psychiatrist (with 20 years of clinical experience and trained in psychodynamic psychotherapy), and they were requested to fill out the study questionnaires. Those who have presented with symptoms of borderline personality disorder were also assessed for BPD features' stability over time and across situations. In case the features from the medical history were evident in the long term, the child and adolescent psychiatrist classified those adolescents as "having high BPTs" based on the clinical assessment. To minimize potential bias, the child psychiatrist who conducted the clinical assessment was blinded to the BPFSC scores. All parents and adolescents were informed about the purpose of the study, and they gave consent in written and verbal respectively. Ethical approval was granted by the Scientific Research Committee of the University General Hospital of Ioannina [approval number 2/28-01-2021].

Instruments

Borderline Personality Features Scale – Children – 11: The instrument was developed¹⁶ to assess BPTs in the adolescent population aged 9 and older, and derived from a longer 24-item version.¹⁴ It consists of 11 items reflecting core features of BPD, such as affective instability, identity problems, and negative relationships. Items are rated on a 5-point Likert scale ranging from "not true at all" to "always true". The BPFSC-11 yields a total score (range: 11–55) measuring the overall level of borderline characteristics; the higher the BPFSC-11 total score, the greater the intensity of BPD features. Permission to use the original scale was granted by its author. We then used the Greek version, which had been translated and culturally adapted by another research team using the back-translation method.³¹

Youth Self Report – ASEBA: The Greek version of the Youth Self Report (YSR) was used.^{32,33} YSR is a 112-item questionnaire that assesses child and adolescent emotional and behavioral function, namely internalizing and externalizing behaviors. The items are rated on a three-point Likert scale and are divided into 8 subscales. For the current study, we used the Dysregulation Profile (DP), which can be computed in various ways based on the Anxious/Depressed, Attention Problems, and Aggressive Behavior syndrome scales.³⁴ The DP is defined categorically with various definitions in the literature, ranging from strict to less strict criteria^{34–43} and is based (a) on T-scores ≥ 70 on the Anxious/Depressed, Attention Problems, and Aggressive Behavior syndrome scales, (b) on a sum of T-scores ≥ 210 , (c) on a sum of T-scores ≥ 180 , and (d) on T-scores ≥ 60 on the Anxious/Depressed, Attention Problems, and Aggressive Behavior syndrome scales. Besides the above literature suggestions, we also chose participants to fit the dysregu-

lation profile if they had T-scores ≥ 65 . This cut-off was chosen to include adolescents with borderline as well as clinical scores on the YSR subscales based on the Greek norms³³. Children with a DP profile (T-scores ≥ 60) are at risk for severe psychiatric symptomatology, including cluster B personality disorders.⁴⁴ Moreover, the components of DP, such as attention problems, aggression, and anxiety/depression, are associated with BPD. For example, emotion dysregulation has been proposed as an underlying mechanism of aggression in BPD.^{45,46}

Statistical analysis

Confirmatory Factor Analysis (CFA) was performed to explore the fit of the unidimensional model to our sample, by using the Weighted Least Squares Estimator (WLSMV). Model fit was evaluated with the following fit indices: the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), and the Root Mean Square Error of Approximation (RMSEA). The following value thresholds were used to assess the goodness of fit: RMSEA ≤ 0.06 ; TLI ≥ 0.95 , CFI ≥ 0.95 , indicating a good fit, whereas an adequate or mediocre fit is considered by values of RMSEA ≤ 0.08 (or ≤ 0.1), TLI ≥ 0.90 , CFI ≥ 0.90 .^{47–49} We should note that the sample size to free parameter ratio is 2.04, suggesting an underpowered ratio.

Regarding model testing, the literature cautions that modifications based solely on statistical indices may lead to overfitting and compromise interpretability and that all model respecifications must be justified based on prior research or theory.^{50–53} Therefore, we adopted a multi-criteria approach grounded in both psychometric principles and theoretical considerations. To guide model refinement, we relied on relevant literature from countries sharing some similarities with Greece, alongside our statistical analyses. Strong evidence of model misfit emerged from the modification index (MI) between Items 3 and 7 (MI = 16.798), which might lead to local dependency since it seems to capture overlapping content. Specifically, Item 3 ("My feelings are very strong. For instance, when I get mad, I get really really mad. When I get happy, I get really really happy") and Item 7 ("I go back and forth between different feelings, like being mad or sad or happy") appear to capture similar emotional intensity and variability. This high MI supports, beyond theoretical rationale, the statistical justification for eliminating Item 3. Additional modification indices exceeding 3.84 (yet below 10) and standardized residuals above 2.58 were observed for some items. Based on these findings, informed by the literature and grounded in theoretical relevance, we sequentially excluded item 3, then item 11, and finally both, to evaluate which model provided the best fit to our data.^{51,53}

Reliability analysis by means of internal consistency was performed using the Omega (ω) coefficient. Omega estimates the proportion of variance in the observed

total score attributable to all “modeled” sources of common variance. A value of >0.8 is considered strong, although values of 0.65 are considered acceptable. Moreover, to evaluate item characteristic curves, we used Item Response Theory. Given the polytomous nature of our items, we employed the Graded Response Model (GRM), and we used Marginal Maximum Likelihood (MML) estimation implemented via the *mirt* package in R.

For testing convergent validity, we performed a linear regression analysis of BPFS total score against the Dysregulation Profile of the YSR, hypothesizing that they would show a positive relationship. We performed four linear regressions with each one of the DP definitions, except the stricter one (T-scores on all scales ≥ 70), because only one participant filled this criterion.

To assess the diagnostic accuracy of the BPFS, a receiver operating characteristic (ROC) analysis was performed for all possible cutoff points on the BPFS against cases identified as presented with borderline features according to the clinical evaluation by the child and adolescent psychiatrist. A curve was fitted by a maximum likelihood technique to ascertain the area under the curve (AUC), which is a useful index of the diagnostic accuracy of the screening test. The optimal threshold value was chosen based on the value corresponding to the greater value of the Youden Index.

Analysis was performed using the software RStudio version 2024.12.0 and the packages *lavaan*, *psych*, *ltm*, *semTools*, *mirt*, *pROC*, and *ROCR*. The database sheet and the R code are available upon reasonable request.

Results

BPFS-11: descriptive assessment

Mean scores of the 11 items are shown in Table 1. Highest scores were observed in items 3 and 7, showing mainly affective instability, whereas the lowest score was observed in item 11, indicating that adolescents do not report seeing themselves as mean to their friends.

Confirmatory Factor Analysis

Evaluating the unidimensional model of the BPFS-11, our results (Table 2) showed a poor fit (RMSEA = 0.093 , CFI = 0.953 , TLI = 0.942). Excluding item 3 (“My feelings are very strong. For instance, when I get mad, I get really, really mad. When I get happy, I get really, really happy”) the fit was improved but still is considered suboptimal (RMSEA = 0.071 , CFI = 0.976 , TLI = 0.969). Exclusion of Item 11 only (“Lots of times, my friends and I are really mean to each other”) revealed a poor fit (RMSEA = 0.096 , CFI = 0.957 , TLI = 0.945). Exclusion of both items 3 and 11 resulted in a much-improved fit that can be considered optimal (RMSEA = 0.058 , CFI = 0.986 , TLI = 0.982). Factor loadings and fit indices for all models tested are shown in Table 2.

Reliability

Internal consistency of the scale was found to be strong, and although it was affected by item removal, (Table 2) remained good. The final solution of 9 items revealed a McDonald’s omega = 0.81 .

Item Analysis

Item analysis revealed that items provide various degrees of information to the scale. Item 8 provides very little information, while item 1 provides a lot of information (Figure 1).

Figure 2 shows the BPFS 9-item information curve that shows how well the construct is measured at all levels of the underlying construct continuum. BPFS-9 captures the BPTs well between 0.5 SD below and 2 SD above the mean.

Convergent Validity

Convergent validity was demonstrated for the total BPFS-9 score (Figure 3). Those with T-scores ≥ 60 on the YSR Anxious/Depressed, Attention Problems, and Aggressive Behavior syndrome scales had 8.59 higher summed scores in the BPFS-9 (SMD= 1.15 , $t = 4.77$, $p < 0.001$). Those with T-scores ≥ 65 had 8.56 higher summed scores in the BPFS-9 (SMD= 1.15 , $t = 2.35$, $p = 0.02$). The same results were revealed for adolescents with T-scores ≥ 210 , as they were the same 4 participants with T-scores ≥ 65 . Last, those with a sum of T-scores ≥ 180 had 7.94 higher summed scores in the BPFS-9 (SMD= 1.07 , t -value = 5.58 , $p < 0.001$).

Criterion Validity

ROC curve analysis was performed to study the cut-off point, sensitivity, and specificity of the BPFS. The ROC curve analysis (Figure 4) indicated a good diagnostic fit for the BPFS-9 with an AUC of 0.86 (95% CI [$0.76 - 0.96$]), suggesting high diagnostic accuracy. Sensitivity and specificity analysis indicated an adequate cut-off point of 26 to discriminate between early adolescents with high BPTs and adolescents without such traits. Sensitivity at the cut-off point was found to be 0.88 , while specificity was 0.75 . ROC curve analysis on the BPFS-11 showed that the difference in AUC between the two models is not statistically significant ($p = 0.75$). The cut-off point for the 11-item version was 34 (sensitivity = 0.8 , specificity = 0.85).

Discussion

The present study aimed to investigate the factor structure, reliability (internal consistency), and convergent validity of the BPFS-11 scale in a sample of Greek early adolescents. Moreover, we aimed to find the optimal cut-off score for early assessment of BPTs. Based on our literature review, no available tool was found in Greece to assess borderline features in adolescents. In

Table 1. Item descriptive statistics (N=112).

No	Item	Frequencies (N, %)					Descriptive
		Not at all true	Hardly ever true	Sometimes true	Often true	Always true	
1	I feel very lonely	31 (27.6)	31 (27.6)	35 (31.2)	9 (8.0)	6 (5.4)	2.36
2	I want to let some people know how much they've hurt me	24 (21.4)	25 (22.3)	25 (22.3)	23 (20.5)	15 (13.4)	2.82
3	My feelings are very strong. For instance, when I get mad, I get really, really mad. When I get happy, I get really, really happy	12 (10.7)	17 (15.4)	24 (20.9)	33 (29.1)	26 (23.6)	3.39
4	I feel that there is something important missing about me, but I don't know what it is	45 (40.2)	21 (18.7)	18 (16.1)	12 (10.7)	16 (14.3)	2.40
5	I'm careless with things that are important to me	35 (31.2)	23 (20.5)	21 (18.7)	25 (22.3)	8 (7.1)	2.54
6	People who were close to me have let me down	33 (29.5)	34 (30.4)	24 (21.4)	14 (12.5)	7 (6.2)	2.36
7	I go back and forth between different feelings, like being mad or sad, or happy	20 (17.9)	12 (10.7)	34 (30.4)	26 (23.2)	20 (17.9)	3.12
8	I get into trouble because I do things without thinking	40 (35.7)	29 (25.9)	21 (18.7)	11 (9.8)	11 (9.8)	2.32
9	I worry that people I care about will leave and not come back	37 (33.0)	16 (14.3)	21 (18.7)	14 (12.5)	24 (21.4)	2.75
10	How I feel about myself changes a lot	33 (29.5)	23 (20.5)	19 (17.0)	20 (17.8)	17 (15.2)	2.69
11	Lots of times, my friends and I are really mean to each other	44 (39.3)	35 (31.2)	17 (15.2)	8 (7.1)	8 (7.1)	2.12

accordance with our hypothesis, BPFS proved to be a reliable tool that measures borderline personality features as a unidimensional construct. However, the 11-item solution showed a poor fit, while the removal of two specific items, based on previous studies conducted in other countries^{17,20,23} and on statistical analysis, improved the model, without affecting its reliability and diagnostic accuracy. We also demonstrate that BPFS exhibits good convergent validity and provide a clinical cut-off point to detect early adolescents with high BPTs.

The overall fit of the 11-item scale was poor. Removing item 3 ("My emotions are very strong. For example, if I get angry, I feel really angry, and if I am happy, I feel really happy") improved the model fit, though it's still considered only mediocre. The Turkish study²³ also removed item 3 as it did not correlate with the other items of the scale. The authors concluded that item 3 was unsuitable for measuring BPTs within a single-factor structure. Indeed, the scale was not constructed to provide information useful in clinical practice on dimensions of BPD; therefore, a unidimensional scale would be more appropriate in clinical settings. Furthermore, similar to the present study, both Turkish and Italian validation studies,^{20,23} found that the mean score of item 3 was very high compared with those of the rest of the items. The high score may be explained by the fact that the intensity of emotions is a typical aspect of early adolescence. Therefore, this item may not be a feature presented exclusively in adolescents with high BPTs. The retention of item 3 and the removal of item 11 ("Lots of times, my friends and I are really mean to each other"), as in the Portuguese study,¹⁷ resulted in a poor fit. In contrast to item 3, the mean score of item 11 was low compared to the other items. This suggests that be-

ing mean to friends does not strongly characterize early adolescents with BPTs. However, removing both items resulted in a 9-item model that fit the data well. Moreover, although item 8 appears to perform poorly psychometrically, it was retained in the scale due to its conceptual relevance. The item captures impulsivity, a core feature of BPD, and there were no literature-based recommendations supporting its removal.

Reliability of the scale was good across all solutions; however, as we removed items, reliability decreased while remaining at acceptable levels. The reliability was similar to the original study and the French validation, and it was higher than the Portuguese and Italian versions.^{17,19,20}

In terms of convergent validity, results demonstrated significant correlations between the BPFS-9 and the dysregulation profile that includes Anxious/Depressed, Attention, and Aggressive problems. The findings indicate that adolescents who exhibit high BPTs tend to exhibit high levels of dysregulation as well. This result is consistent with the literature suggesting that dysregulation profile may be associated with severe psychiatric disorders such as borderline personality disorder.³⁵ The small number of adolescents (N = 4) classified within the more "severe" dysregulation profiles (T-scores ≥ 65 and summed scores > 210) may contribute to the low p-value observed, despite its statistical significance. Nonetheless, interpretation of these findings is limited and should be approached with caution—or potentially avoided—given the restricted sample size.

Our results also revealed that the BPFS has high accuracy in discriminating adolescents with high BPTs based on a clinical examination. Moreover, no differences were detected in the diagnostic accuracy between the 11-

Table 2. Confirmatory Factor Analysis parameters and reliability coefficients.

No	Item	BPFS 11	BPFS 10 (Excluding item 3)	BPFS 10 (Excluding item 11)	BPFS 9 (Excluding items 3 and 11)
		Factor loadings	Factor loadings	Factor loadings	Factor loadings
1	I feel very lonely	0.780	0.802	0.788	0.810
2	I want to let some people know how much they've hurt me	0.443	0.455	0.427	0.437
3	My feelings are very strong. For instance, when I get mad, I get really really mad. When I get happy, I get really really happy	0.455	-	0.450	-
4	I feel that there is something important missing about me, but I don't know what it is	0.629	0.643	0.644	0.658
5	I'm careless with things that are important to me	0.583	0.593	0.585	0.594
6	People who were close to me have let me down	0.677	0.691	0.668	0.681
7	I go back and forth between different feelings, like being mad or sad or happy	0.568	0.496	0.548	0.472
8	I get into trouble because I do things without thinking	0.381	0.335	0.357	0.307
9	I worry that people I care about will leave and not come back	0.672	0.677	0.684	0.690
10	How I feel about myself changes a lot	0.657	0.654	0.667	0.664
11	Lots of times, my friends and I are really mean to each other	0.397	0.390	-	-
Model Fit					
	RMSEA	0.093	0.071	0.096	0.058
	CFI	0.953	0.976	0.957	0.986
	TLI	0.942	0.969	0.945	0.982
Reliability					
	McDonald's ω	0.84	0.84	0.83	0.81

Note: RMSEA: root-mean-square error of approximation; CFI: comparative fit index; TLI: Tucker–Lewis index.

item and 9-item solutions. With a cut-off score of 26, the BPFS-9 demonstrates high sensitivity (0.88) in identifying adolescents with BPTs, which is higher than that of the BPFS-11. However, it also exhibits lower specificity (0.75) compared to the BPFS-11, resulting in a higher rate of false positives. In the context of our outpatient community service setting, prioritizing the early detection of adolescents with high BPTs, even at the cost of some false positives, may be a more clinically appropriate approach. Early identification allows for timely intervention, while subsequent clinical assessment can effectively rule out adolescents who do not exhibit true BPTs. On the other hand, consistent with the original study of Sharp et al.¹⁶ in an inpatient setting, the optimal cut-off point of BPFS-11 was 34.

Moreover, the scale captures more information for adolescents with high levels of BPTs. This finding suggests that BPFS-9 is better at capturing the higher levels of BPTs. We can argue, from a clinical point of view, that emphasis should be placed on adolescents exhibiting high levels of borderline features to facilitate timely identification and intervention.

Our study has several limitations that need to be

addressed. First, the sample size may be considered small, thus limiting the generalizability of our findings. The sample size was small for the CFA and IRT analyses; therefore, the ratio of free parameters was below standard guidelines, which may affect the precision of parameter estimates. Results should be interpreted cautiously, and replication with a larger sample is recommended. Second, the clinical outpatient population does not allow for drawing conclusions for the community and inpatient population; therefore, future studies are needed to replicate the results and validate the scale in these settings in Greece. A third limitation lies in the cross-sectional nature of the study, which inhibits test-retest reliability. Although the clinical assessment was conducted by the same child and adolescent psychiatrist, the absence of a standardized diagnostic tool for BPD remains a limitation.

Our study also has several strengths that should be emphasized. To the best of our knowledge, this is the first study exploring the psychometric properties of a scale for borderline personality features in adolescents in Greece. Therefore, represents the first study providing support for the use of BPFS in outpatient settings.

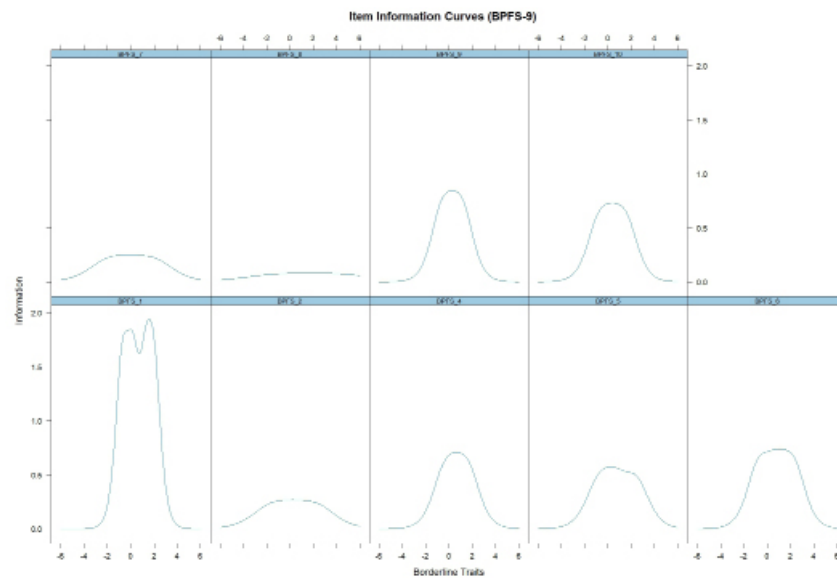


Figure 1. Item Information Curves of the Borderline Personality features Scale (9 items).

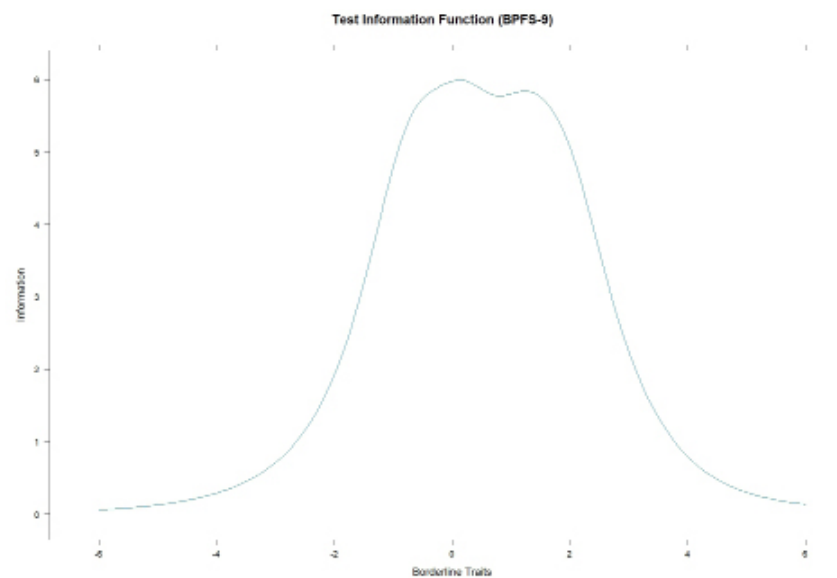


Figure 2. Test Information function of the Borderline Personality features Scale (8 items).

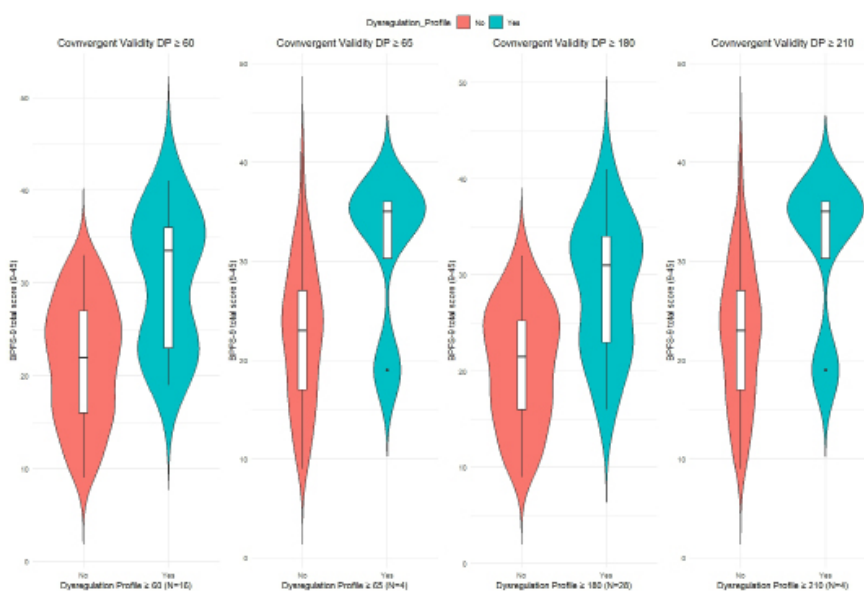


Figure 3. Convergent validity comparing BPFs-9 sum score with different definitions of Dysregulation Profile.

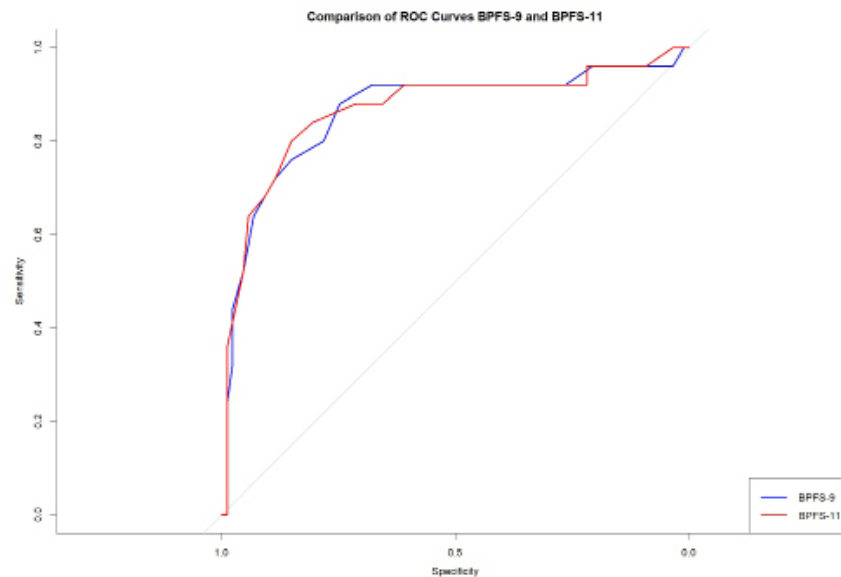


Figure 4. Receiver operating characteristic curves of the BPFS-9 and BPFS-11 in the presence or absence of the BPD at risk clinical diagnosis.

Furthermore, our sample consists of early adolescents, a group for whom early detection of BPTs is crucial for timely intervention. Finally, our study, although it did not include a structured interview for BPD as mentioned above, included a clinical assessment by an experienced child and adolescent psychiatrist.

In this study, we validated the BPFS scale, addressing a gap in tools for detecting BPTs in Greek adolescents, and provided a new insight into the item pool. Early detection of BPTs during adolescence is crucial for timely intervention. Our findings support the use of the BPFS scale for early adolescents in outpatient settings, with the unidimensional model demonstrating an adequate fit for the 9-item solution. The BPFS-9 provides a valid measure of BPTs, with a cut-off of 26, and better iden-

tifies adolescents with elevated BPTs, facilitating early detection and intervention.

Providing Greek mental health professionals with a short, feasibly administered, user-friendly, and easy-scoring scale can significantly aid the early detection of BPTs. This represents a step towards facilitating diagnosis and intervention in this crucial developmental period, but also has the potential to reduce the reluctance around the diagnosis of BPD in that age group.^{54,55} This could lessen the burden of this debilitating disorder on individuals, families, and health systems. In conclusion, our results suggest that BPFS-9 can be used in outpatient clinical settings in the early adolescent population as a brief screening tool.

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