Psychometric Properties of the French Version of the Borderline Personality Features Scale for Children and Adolescents

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Abstract: Background: The Borderline Personality Feature Scale for Children (BPFS-C) is currently the only dimensional measure of child and adolescent borderline features and the English version has been shown to have good psychometric properties. To extend the use of this measure with French speaking adolescents, it is essential to examine the reliability and validity of the French BPFS-C.

Objective: The present study sought to assess the psychometric properties of the French BPFS-C.

Methods: A community sample of 394 adolescents and young adults completed the Borderline Personality Features Scale for Children (BPFS-C), as well as the Million Adolescent Clinical Inventory (MACI) borderline tendency subscale, the Child Behavior Checklist-Youth Self-Report (CBCL-YSR) and the Beck Youth Inventories (BYI).

Results: The findings show that both the long and short French BPFS-C have good internal consistency and convergent validity. Affect regulation, identity, relationship difficulties and self-harm were found to be closely inter-connected rather than distinct factors.

Conclusion: The findings indicate that both long and short versions of French BPFS-C have good psychometric properties and provide preliminary evidence that the total scores are reliable and valid indicators of borderline personality features in adolescents and young adults.

Keywords: Borderline personality, adolescents, personality, BPFS-C, MACI, CBCL-YSR, BYI.

1. INTRODUCTION

Borderline Personality Disorder (BPD) is an impairing mental disorder that commonly emerges during adolescence and is characterized by a pattern of impulsivity and instability of affect, identity and interpersonal relationships (Diagnostic and Statistical Manual of Mental Disorders; DSM-5, APA, 2013). Additional diagnostic criteria include attempts to avoid abandonment, chronic feelings of emptiness, recurring suicidal impulses and self-harm. Adolescents with BPD are at high risk of impaired functioning (Chanen et al., 2007) and psychopathology and frequently co-occurs with other personality disorders, substance abuse and internalizing and externalizing difficulties (Becker, Grilo, Edell, & McGlashan, 2000; Ha, Balderas, Zanarini, Oldham, & Sharp, 2014; Kaess et al., 2012; Loas et al., 2012). Furthermore, there are long-term implications as adolescents with BPD are at elevated risk for adult mental illness (Chanen et al., 2007). Early intervention and identification have been shown to be associated with better outcomes (Chanen, 2015). However, there are few validated instruments for assessing BPD features in adolescents (Crick, Murray-Close, & Woods, 2005). The Borderline Personality Features Scale for Children (BPFS-C) is a potentially useful screening questionnaire and both long and short versions have been demonstrated to have good psychometric properties (Crick et al., 2005; Sharp, Steinberg, Temple, & Newlin, 2014). To extend the use of this measure with French-
speaking adolescents, it is important to validate the French translation of this questionnaire. In addition, replication of Sharp’s (Sharp, Steinberg, Temple, & Newlin, 2014) findings that BPD in adolescents tend to present as a closely interrelated cluster of symptoms rather than distinct factors, is needed. The aim of this study was to help to address this gap and examine the psychometric properties of both long and short versions of the French BPFS-C.

1.1. BPD Screening Instruments

Self-report screening instruments have an important potential advantage for facilitating screening and identification of adolescents that may benefit from early intervention and treatment. Until recently, the Child Interview for Borderline Personality Disorder (CI-BPD; Zanarini, 2003) was the most widely used screening instrument for identifying adolescents with BPD. Despite its utility in assessing BPD features in children and adolescents, the interview format of the CI-BPD has the disadvantage of being time-consuming and requiring administration by trained mental health professionals. This limits the extent to which it can be used to screen larger numbers of children and adolescents. For this reason, a self-report measure, the BPFS-C (Crick et al., 2005) was developed. As one of very few dimensional measures specifically for assessing borderline personality features in children and adolescents, the BPFS-C also makes it possible to examine symptom variability in adolescents (Meijer, Goedhart, & Treffers, 1998), as well as fluctuations in the intensity and range of BPD symptoms over time (Sharp et al., 2014).

A number of studies have examined the psychometric properties of the BPFS-C and have focused on internal consistency and concurrent validity (Chang, Sharp, & Ha, 2011; Crick et al., 2005; Sharp, Mosko, Chang, & Ha, 2011). In a longitudinal validation study, BPD features measured with the BPFS-C were shown to be relatively stable over one year, in contrast to symptoms of other disorders (Crick et al., 2005). In addition, the BPFS-C was also found highly effective in detecting adolescent inpatients identified as having BPD on the CI-BPD interview (Chang et al., 2011). Subsequently, a short 11-item version was developed using Item Response Theory methodology to identify the items which contributed most to detecting adolescents identified as having BPD using the CI-BPD (Sharp et al., 2014). The short version was found to be as effective as the long version in detecting adolescents with BPD and both long and short versions had similar patterns of correlations with emotion dysregulation and self-harm.

The items of the BPFS-C were adapted from the four theoretically derived subscales of the adult Personality Assessment Inventory (PAI; Morey, 1991) namely affect instability, identity problems, negative relationships and self-harm. These four dimensions are widely used in thinking about BPD in adolescents, but there is currently no factor analytic findings confirming a four-factor structure and there is evidence suggesting that BPD associated difficulties in adolescents are highly interrelated and present as a core construct (Sharp et al., 2014). In line with this, a recent study using confirmatory factor analysis found poor model fit for the four-factor structure in both a clinical and a forensic sample (Venta, Magyar, Hossein & Sharp, 2018).

1.2. This Study Aim

The aim of this study was to investigate the psychometric properties of the French translation of the BPFS-C. The first objective was to examine whether the four-factor structure (affect instability, identity problems, negative relationships and self-harm) identified by Crick et al. (2005) could be replicated, or whether the total scores of the long and short BPFS-C are good indicators of the general construct of BPD features in adolescents. One previous study examined whether the BPFS-C subscales proposed by Crick et al. (2005) on a theoretical basis could be replicated using a factor analysis approach, but found instead that BPFS-C items measured a single core BPD construct (Sharp et al., 2014). Based on these findings we expected the total score to be a good indicator of BPD features. The second objective was to examine and compare the convergent validity of both long and short versions of the BPFS-C and the MACI borderline tendency scale, as well as the BYI depression and anxiety subscales, and the CBCL internalizing and externalizing scales.

With regard to the convergent validity of the BPFS-C, it was expected that the total scores of the 24-item version and 11-item brief version
would be strongly correlated with the MACI borderline tendency subscale since both measures are considered to evaluate the same construct. We also hypothesized that scores on the BPFS-C would be associated with BYI depression and anxiety, as well as CBCL internalizing and externalizing based on previous findings suggesting that BPD features are associated with general psychiatric difficulties (Chanen et al., 2007).

2. METHODS

2.1. Sample and Participant Selection

The sample was composed of 394 adolescents and young adults (78% girls, 22% boys) aged between 12 and 21 years (mean age = 16.62, SD = 3.23). The majority were Caucasian (92%), reflecting the low ethnic diversity of the region where the study took place. Participants were recruited from high schools in the Quebec City region. For 12- and 13-year-olds, parental consent was required prior to their participation in the study. Adolescents aged 14 years and older consented to participate in the study by signing the paper or electronic consent form. The consent provided by the adolescents was in accordance with Article 21 of the Civil Code of Québec which specifies that from age 14 adolescents can consent to activities such as participating in research. This was considered acceptable considering the potential benefit of the study, the low potential risk of emotional upset which is not greater than might be expected in the course of a normal day, and the fact that adolescents who participated in the study had access to psychologists who were part of the research team. Once consent was received, a link was forwarded by email to the adolescents so they could complete the online questionnaires. The study was approved by the Ethics Committee for Research with Human Subjects of Laval University.

2.2. Assessments and Measures

Borderline Personality Features Scale for Children (BPFS-C) is based on a developmental perspective. The BPFS-C is a self-report questionnaire that assesses borderline personality features in children and adolescents aged 9 and older (Crick et al., 2005). The 24-item questionnaire includes four theoretically derived subscales, namely affective instability (e.g.: “I go back and forth between different feelings, like being mad or sad or happy”), identity problems (e.g.: “I feel there is something important missing about me, but I don’t know what it is”), negative interpersonal relationships (e.g.: “I’ve picked friends who have treated me badly”) and self-harm (e.g.: “I get in trouble because I do things without thinking”: Crick et al., 2005). Each item is ranked on a 5-point Likert scale ranging from 1 “Not at all true” to 5 “Always true” (Crick et al., 2005). Scores of the 24 items can be summed and the total score ranging from 24-120 can be used as an indicator of BPD features, with higher scores indicating a greater number of BPD-associated characteristics. The BPFS-C has been shown to have moderate to strong internal consistency with Cronbach’s alpha ranging from 0.76 (Crick et al., 2005) and 0.89 (Sharp et al., 2011). In this study, a French translation of the BPFS-C was produced using the standard method of translation and back-translation where the latter was compared with the original version. Non-identical items were discussed by an expert group (KE, MB, LN) to identify the source of the difference and then corrected with repeated back-translation until no differences can be detected.

Sharp and her colleagues, (2014) also selected 11-items that best predicted BPD and refer to this as the short version of the BPFS-C. In the present study, we used the complete questionnaire, but also examined the psychometric of the short version using the selection of items Sharp identified. See Table 3 for a list of these items.

Millon Adolescent Clinical Inventory (MACI). The MACI is a self-report personality inventory developed by Millon (1993) for use with adolescents and young adults. Subscales were designed to differentiate between disorders from axis I and axis II as described by the DSM-IV-TR. The MACI consists of 160 dichotomous (“true” or “false”) items and has 27 subscales that assess 3 psychopathology factors related to personality styles, expressed concerns and clinical syndromes. Millon and colleagues (1993) have reported moderate to strong internal consistency (0.73 - 0.91) and a good test-retest reliability (0.57 - 0.92). In the context of this study, only the Borderline tendency scale was used in order to evaluate the convergent validity of the BPFS-C.
**Child Behavior Checklist - Youth Self-Report (CBCL-YSR).** The French version of the Youth Self-Report (YSR; Achenbach, 2001) 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. Externalizing and internalizing scores can be calculated by summing up the individual score of the relevant subscales; withdrawal, somatic complaints, anxiety and depression comprise the internalizing scale whereas social problems, aggressive behavior and delinquent behavior are included in the externalizing scale. In our sample, the internalizing and externalizing scales showed good internal consistency with Cronbach’s alpha of 0.9 and 0.82.

**Depression subscale of the Beck’s Youth Inventories (BDI-Y).** The BDI-Y (Beck, Beck & Steer, 2005) is one of the five self-report scales of the Beck Youth Inventories. It consists of 20 items rated on a 4-point frequency scale that are designed to measure symptoms of depression in children and adolescents consistent with the DSM-4-TR (APA, 2000) criteria. An elevated score on this scale implies higher levels of depression. The questionnaire yields a standardized total score. The BDI-Y shows good to excellent internal consistency (α = 0.90–0.95), convergent validity (r = 0.72) and test-retest reliability (r = 0.79-0.92).

**Anxiety subscale of the Beck’s Youth Inventories (BAI-Y).** The BAI-Y (Beck, Beck & Steer, 2005) aims to assess symptoms of anxiety in children and adolescents. Respondents report the level of intrusion of various worries on a 4-point frequency scale that ranges from 0 (not at all) to three (severely - it bothered me a lot). Results are computed and standardized scores are then derived. The reliability and validity of this measure are supported with satisfactory concurrent and discriminant validity, good to excellent internal consistency (α = 0.89-0.92) and test-retest reliability (r = 0.77-0.90).

### 2.3. Procedure

The study was presented to students in high schools of the Quebec City region, the Lower St-Lawrence region and the Chaudières-Appalache region. After giving their consent, students at schools were invited, depending on the agreements with school’s principals, to log onto a secure website which contained the self-report questionnaires used in this study or to complete paper-and-pencil versions of the questionnaires. The secure website included a description of the study, a consent page, and all questionnaires in a user-friendly online format. Each questionnaire was displayed on a unique webpage and proceeding to a subsequent questionnaire was permitted only once all questions in the current questionnaire had been answered. All items were in multiple-choice format. A percentage of participants received gift cards, using a draw. Adolescents and young adults were informed that they could contact the team if they have any questions or concerns regarding the topics raised in the questionnaires.

### 2.4. Analysis

First, we examined whether the French BPFS-C presented a clear factor structure, using an exploratory structural equation model (Exploratory Structural Equation Modeling; ESEM) with the Mplus 7.12 software (Muthén & Muthén, 1998-2012). This method was selected because it overcomes certain shortcomings of regular confirmatory factor analysis as it combines exploratory and confirmatory factor analyses. Thus, this model helps to eliminate the assumption of null cross-loadings by making it possible for items to regroup under one or more factors compared to the confirmatory analysis (Asparouhov & Muthén, 2009). Finally, this method makes it possible to evaluate the factor structure with adjustment statistics. A GEOMIN rotation solution was selected to enable the identification of the factors by increasing the stronger factor loadings and by decreasing the lower ones. Since the main objective of the factor analysis was to evaluate if the proposed model can explain the links between various items from the questionnaire, five adjustment factors statistics were used to test model’s fit: the Chi-square ratio divided by the degrees of freedom (χ²/dl), the Root Mean Square Error of Approximation (RMSEA), the Standardised Root Mean Residual (SRMR), the Comparative Fit index (CFI) and the Tucker-Lewis index. The χ²/dl statistic presents a good fit when the chi-square is non-significant and when the χ²/dl ratio is lower than 3 (Ulman, 2001). Regarding the RMSEA and the SRMR, a value between 0.01 and 0.06 suggests an excellent fit.
whereas a value situated between 0.06 and 0.08 is considered acceptable (Browne & Cudek, 1993). The CFI and the TLI are statistics for which a value superior to 0.9 is considered acceptable (Schumacker & Lomax, 2009) and a value superior to 0.95 is considered good and is recommended (Hu & Bentler, 1999).

To examine the scale properties of the long and short versions of the French BPFS-C, we calculated the scale alpha as well as item-total correlations and used these statistics to determine whether the total scores could be considered as representing the construct and whether all the items measured the construct and correlated sufficiently with the total score. To examine whether the total score sufficiently represents the central construct measured by the items, scale alphas are examined. Scale alphas superior to .70 are considered acceptable and indicative of moderate reliability when the total score is used to represent the construct, whereas scale alphas superior to .90 are considered indicative of excellent reliability in terms of the total score being indicative of the construct measured by the different items. To examine at the item level whether each individual item is sufficiently related to the central construct measured using the total score, we followed the convention that considers item-total correlations of .4 and higher indicating that items correlate sufficiently with the total score and measure the construct that the total score is considered representative. Convergent validity was evaluated with correlations using SPSS version 23 with a bilateral alpha level set at .05.

3. RESULTS

3.1. Preliminary Analysis

An Exploratory Structural Equation model (ESEM) was used to examine whether the four theoretically-based factors of the BPFS-C could be identified. The four-factor model depicts an adjustment ranging from acceptable (TLI = 0.928) to excellent ($\chi^2$/df ratio = 1.86; CFI = 0.951; RMSEA = 0.046; SRMR = 0.030). Significant factor intercorrelations ranging from 0.25 to 0.41 were present (Table 1).

The standardized four-factor loading matrix is presented in Table 2. The first factor did not clearly map onto any specific theoretical factor and is constituted by a combination of items from affect instability, self-harm, identity difficulties and interpersonal difficulties. The second factor predominantly contained items associated with self-harm and the third factor contained items associated with affect instability. The fourth factor contained items associated with interpersonal difficulties and identity difficulties. The remainder of the items theoretically associated with identity problems did not group as one coherent factor and one item (item 24) did not load on any factor. Given the absence of a clear factor structure, we decided to examine whether the total score of the BPFS-C could be used as a good indicator of a more general construct of BPD where items related to affective instability, identity difficulties, interpersonal difficulties and self-harm are highly interrelated rather than separate factors.

We examined the internal consistency of both versions. The Cronbach’s alpha for the 24 items altogether was .91, indicating excellent reliability whereas the one for the 11-item version was .85, also indicating good reliability. The item-total correlations are presented in Table 3. The correlations ranged from .290 to .709 for the 24-item version and from .484 to .727 for the 11-item version.

| | F1 | F2 | F3 | F4 |
|---|---|---|---|---|
| F1 | 1.00 | - | - | - |
| F2 | .246 | 1 | - | - |
| F3 | .395 | .409 | 1 | - |
| F4 | .366 | .277 | .383 | 1.00 |

Notes : F1 = Affective instability ; F2 = Identity problems ; F3 = Self-harm ; F4 = Negative relationships. All correlations are significant at $p < .001$. 

Table 1. Correlations between factors in the four-factor model of the BPFS-C.
Table 2. Factor loadings of the 24 items of the BPFS-C on the four-factor model using ESEM.

| Theoretical Factors | Item | Factor 1 | Factor 2 | Factor 3 | Factor 4 |
|---------------------|------|----------|----------|----------|----------|
| Factor 1: Affective Instability | 01   | .672***  | -.002    | .030     | .067     |
| 05                  | .131 | -.225*** | .490***  | -.109    |          |
| 08                  | -.114*| .189**  | .590***  | .133*    |          |
| 14                  | .206***| -.011   | .695***  | .049     |          |
| 17                  | -.124*| .517***  | .347***  | .148*    |          |
| 21                  | .074 | .401***  | .338***  | .068     |          |
| Factor 2: Identity Problems | 03   | .048     | .015     | -.001    | .439***  |
| 09                  | .435***| .038    | .148*    | .210***  |          |
| 12                  | .167**| .169**  | .155*    | .125     |          |
| 16                  | .031 | -.031    | .245***  | .553***  |          |
| 18                  | .293***| .000    | .347***  | .140*    |          |
| 22                  | .226***| .136*   | .038     | .353***  |          |
| Factor 3: Self-harm | 04   | .155**  | .581***  | .131*    | .040     |
| 07                  | .067 | .683***  | .048     | .113*    |          |
| 11                  | .305***| .289***| .106     | .155***  |          |
| 15                  | .066 | .653***  | .156**   | .048     |          |
| 19                  | .275***| .385***| .290***  | .035     |          |
| 23                  | .471***| .345***| .023     | -.179**  |          |
| Factor 4: Negative Relationships | 02   | .616***| -.121*   | .150**   | .211***  |
| 06                  | -.028| .089     | .193**   | .445***  |          |
| 10                  | .106 | -.010*  | .042     | .422***  |          |
| 13                  | .240***| .013    | -.029    | .595***  |          |
| 20                  | -.034| .361***  | .030     | .285***  |          |
| 24                  | .015 | .058     | .007     | -.095    |          |

Notes. Strongest loading for each item is bolded. *p < .05 ; ** p < .01 ; *** p < .001.

Table 3. Item-total correlations of the 24 and 11 item version of the BPFS.

| No. | Items | BPFS-C 24 Items | BPFS-C 11 Items |
|-----|-------|----------------|----------------|
| 1   | I'm a pretty happy person. | 0.547 | - |
| 2   | I feel very lonely. | 0.62 | 0.626 |
| 3   | I get upset when my parents or friends leave town for a few days. | 0.401 | - |
| 4   | I do things that other people consider wild or out of control. | 0.634 | - |
| 5   | I feel pretty much the same way all the time. My feelings don't change very often. | 0.29 | - |
| 6   | I want to let some people know how much they've hurt me. | 0.532 | 0.603 |

(Table 3) Contd...
4. DISCUSSION

The aim of this study was to examine the psychometric properties of the French BPFS-C. The first objective was to examine whether the four-factor structure (affect instability, identity problems, unstable interpersonal relationships and self-harm) initially reported by Crick and al. (2005) could be replicated, or if not, whether the total scores of the long and short versions of the French BPFS-C were reliable indicators of core construct of BPD in adolescents. A second objective was to assess the convergent validity of the French BPFS-C by examining correlations with the MACI borderline personality tendency scale, CBCL-YSR externalizing and internalizing, as well as BYI depression and anxiety.

The findings of the study show that the total scores of the long and short versions of the French BPFS-C were reliable indicators of core construct of BPD in adolescents. A second objective was to assess the convergent validity of the French BPFS-C by examining correlations with the MACI borderline personality tendency scale, CBCL-YSR externalizing and internalizing, as well as BYI depression and anxiety.

Table 4. Correlations between the 24-item and the 11 item version of the BPFS-C, MACI (borderline tendency), CBCL-YSR (internalizing and externalizing), BDI-Y (depression) and BAI-Y (anxiety).

| No. | Items | BPFS-C 24 Items | BPFS-C 11 Items |
|-----|-------|----------------|----------------|
| 7   | I do things without thinking. | 0.631 | - |
| 8   | 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. | 0.615 | 0.632 |
| 9   | I feel that there is something important missing about me, but I don’t know what it is. | 0.619 | 0.667 |
| 10  | I've picked friends who have treated me badly. | 0.423 | - |
| 11  | I'm careless with things that are important to me. | 0.625 | 0.638 |
| 12  | I change my mind almost every day about what I should do when I grow up. | 0.482 | - |
| 13  | People who were close to me have let me down. | 0.586 | 0.623 |
| 14  | I go back and forth between different feelings, like being mad or sad or happy. | 0.709 | 0.727 |
| 15  | I get into trouble because I do things without thinking. | 0.65 | 0.593 |
| 16  | I worry that people I care about will leave and not come back. | 0.615 | 0.68 |
| 17  | When I'm mad, I can't control what I do. | 0.64 | - |
| 18  | How I feel about myself changes a lot. | 0.604 | 0.647 |
| 19  | When I get upset, I do things that aren't good for me. | 0.709 | - |
| 20  | Lots of times, my friends and I are really mean to each other. | 0.47 | 0.484 |
| 21  | I get so mad I can't let all my anger out. | 0.647 | - |
| 22  | I get bored very easily. | 0.565 | - |
| 23  | I take good care of things that are mine. | 0.473 | - |
| 24  | Once someone is my friend, we stay friends. | 0.404 | - |

Notes: Internalizing and Externalizing as assessed with the CBCL-YSR ; Depression and Anxiety as assessed with the BYI. * p < .01.
BPFS-C can be used as reliable indicators of BPD features in adolescents. The study findings suggest that during adolescence, affect instability, self-harm, identity difficulties and interpersonal difficulties are closely interconnected and resume to a core construct of BPD rather than presenting as distinct factors as is more evident in adults. The findings of the ESEM model only partially supported the four-factor structure found in adults. Four factors were identified by the ESEM model but the same items loaded on more than one factors, suggesting that BPD related difficulties in affect regulation, identity, relationships and self-harm are highly interrelated. The first factor contained items related to affect regulation, identity, self-harm and interpersonal problems, rather than one dimension in particular. In addition, the second and third factors contained items relating to both affect instability and self-harm. Furthermore, the fourth factor contained items related to both interpersonal difficulties and identity problems. In sum, the findings show no evidence of distinct and clear factors. In light of this, our conclusions are in line with that of Sharp and colleagues (2011), that BPD in adolescents present as a core construct where BPD associated difficulties are highly interrelated.

In light of these findings, the total score of the BPFS-C can be used as a reliable indicator of borderline personality features. The scale alpha and item-total correlations indicate that both the short and long versions of the BPFS-C’s have good internal consistency and that the items measure a core construct of borderline features in adolescents. Our findings are in line with that of Sharp and her colleagues (2011) who also concluded that the BPFS-C can best be seen as measuring a constellation of interrelated symptoms characteristic of BPD. Our findings also extend these prior findings by showing that this is also the case in adolescents across a wide age range from 12-21 years.

With regard to the convergent validity, as expected, the strongest positive correlation was between BPFS-C and the MACI’s borderline tendency subscale. Furthermore, the total scores of the long and short versions of the French BPFS-C were not associated with other types of personality disorders assessed by the MACI, thus confirming that the BPFS-C measures a BPD specific construct.

The study has a number of strengths including as the use of a relatively large community sample, but the study also has some limitations. Although we especially recruited younger adolescents at schools, like with many other validation studies that rely partially or entirely on student samples, the relatively high mean age of participants means that caution has to be used before generalizing the findings of the current study to younger adolescents. Furthermore, the relatively high mean BPFS scores observed in the current study may have been in part due to the fact that the sample included a majority of girls as they are known to present with more BPD features and higher rates of BPD compared to adolescent boys (APA, 2013; Guilé, Boissel, Alaux-Cantin, & Garny de La Rivière, 2018). The study may have attracted respondents concerned about BPD related symptoms and the topic of personality disorders may have been of greater interest to girls. In future research, recruitment strategies to attract more male participants are required. The present study was not designed to determine the clinical cut-off points of the BPFS-C because we used online questionnaires and did not include interviews in part because the base rate of BPD diagnosis in the community is expected to be rather low and further research with clinical samples with higher rates of BPD diagnoses is required to establish clinical cut-off points for the French BPFS-C. The findings of the present study point to a BPD specific construct where symptoms associated with affect dysregulation, identity difficulties, interpersonal problems and self-harm are highly interrelated.

Further research using a longitudinal developmental design is needed to disentangle possible longitudinal relationships of difficulties in affect regulation, identity, self-harm and interpersonal relationships to determine whether these difficulties are indeed highly intercorrelated from early development or whether there is evidence of a developmental sequence. For example, affect instability may developmentally underlie other BPD related difficulties in identity, self-harm and interpersonal interactions (Glen & Klonsky, 2009; Stepp et al., 2014), but this hypothesis needs to be tested through further research. In further research it may also be important to consider whether it could be useful to add items related to dimensions of BPD considered to be part of the core construct of BPD but which are not assessed with the BPFS-C in its current form, such as items related to ag-
gression (Scott et al., 2017) and darker dimensions of BPD such as callousness, lack of empathy and exploitativeness.

**CONCLUSION**

The study findings show that both the short and long versions of the French BPFS-C have good psychometric properties and are reliable indicators of a core construct of BPD in adolescents. The validation of the French BPFS-C opens the door to early detection and identification of BPD features in French-speaking adolescents. This is, in turn, a step towards facilitating early intervention that can help to decrease the negative impacts of BPD during this crucial developmental period.

**ABOUT THE AUTHORS**

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**LIST OF ABBREVIATIONS**

| Abbreviation | Description |
|--------------|-------------|
| BPD          | Borderline Personality Disorder |
| BPFS-C       | Borderline Personality Features Scale for Children |
| CI-BPD       | Childhood Interview for DSM-IV Borderline Personality Disorder |
| MACI         | Million Adolescent Clinical Inventory |
| CBCL-YSR     | Child Behavior Checklist-Youth Self-Report |
| BYI          | Beck Youth Inventories |
| ESEM         | Exploratory Structural Equation Modeling |
| RMSEA        | Root Mean Square Error of Approximation |
| CFI          | Comparative Fit Index |
| SRMR         | Standardised Root Mean Residual |
| TLI          | Tucker-Lewis Index |

**ETHICS APPROVAL AND CONSENT TO PARTICIPATE**

The study was approved by the Ethics Committee for Research with Human Subjects of Laval University, Canada.

**HUMAN AND ANIMAL RIGHTS**

Humans were used for this study.

**CONSENT FOR PUBLICATION**

Consent obtained from participants.

**AVAILABILITY OF DATA AND MATERIALS**

Not applicable.

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None.
CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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