The validation of a five-item screening scale for personality disorders in Dutch-speaking community adolescents and adults.

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Abstract

In Section III of the Diagnostic and Statistical Manual of Mental Disorders – fifth edition (DSM-5), an Alternative Model for Personality Disorders (AMPD) is proposed, including a criterion for personality functioning impairment (Criterion A) to assess severity of personality pathology. The present study examined the structure, reliability, and convergent validity of the Dutch version of a five-item screening scale for Criterion A - the Five-Item Screening Scale for Personality Disorders (FISSPD; Skodol et al., 2011) - in a community sample of 1,477 adolescents and 546 adults. To assess convergent validity, identity and personality (pathology) questionnaires were completed by adolescents and adults. Confirmatory factor analysis yielded a single factor structure for the FISSPD, which proved to be (partially) invariant across age and gender. Adequate reliability coefficients were obtained for the FISSPD. In both the adolescent and adult sample, significant correlations were found between the FISSPD and consolidated identity (negative) and disturbed identity/lack of identity (positive). In the adult sample, the FISSPD showed significant correlations with several personality disorders (and especially with the borderline personality disorder), maladaptive personality traits (Criterion B of the AMPD), and general personality impairment. In the adolescent sample, the FISSPD was positively correlated with borderline personality disorder characteristics. Furthermore, significant correlations were found with the Big-Five personality traits in the adolescent sample: the FISSPD correlated significantly positive with neuroticism, and negative with extraversion, agreeableness, and conscientiousness. In sum, the present study supports the reliability and validity of the FISSPD to screen for (severity of) personality pathology.

Keywords: FISSPD, AMPD, personality pathology, identity, factor structure, measurement invariance

1. Introduction

1.1. The DSM-5 Section III Alternative Model for Personality Disorders and Criterion A

As an alternative to the categorical classification of personality disorders (PDs) in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5; American Psychiatric Association [APA], 2013), an Alternative Model for Personality Disorders (AMPD) was suggested in Section III of the DSM-5 (APA, 2013). The AMPD adopts a dimensional perspective on personality pathology and describes personality pathology according to two criteria: 1) core impairments in personality functioning (Criterion A), and 2) maladaptive personality traits (Criterion B). Criterion A consists of two domains: self- and interpersonal functioning. Each domain comprises two subdomains: identity and self-direction for self-functioning, and empathy and intimacy for interpersonal functioning. Each of these (sub)domains is assessed by means of the Level of Personality Functioning Scale (LPFS; APA, 2013) and is rated on a continuum ranging from 0 (no impairment) to 4 (extreme impairment). According to the AMPD, impairment in personality functioning (Criterion A) manifests itself by moderate to extreme impairments in at least two of the four subdomains. The LPFS is rated by clinicians who can rely on extensive descriptions of each level of impairment per domain.

Since the publication of the DSM-5 (APA, 2013), several self-report questionnaires and interviews were developed to assess Criterion A of the AMPD (Birkhölzer et al., 2020; Zimmerman et al., 2019). Most of these measures – although useful for detailed assessment – are time-consuming for patients and/or clinicians and thus might not be as convenient in practice. By means of a short screening instrument, clinicians would be able to easily and rapidly detect those patients with potential impairment in their personality functioning at the beginning of treatment as well as monitor change during treatment without overburdening their patients. To the best of our knowledge, there is only one screening instrument available at the moment, the Level of Personality Functioning Scale Brief Form (LPFS-BF; Hutsebaut et al., 2016; Weekers et al., 2018), which is a 12-item self-report questionnaire developed for patients to quickly self-assess personality dysfunctioning.

Furthermore, PD assessment is often perceived by clinicians as a task solely to be carried out in adult patients (Sharp, 2017), despite empirical evidence indicating that PDs are already present and moderately stable in adolescence (Morey & Hopwood, 2013; Sharp & Tackett, 2014; Sharp & Wall, 2018; Shiner, 2009). In a recent review, Sharp (2020) argues that the AMPD is suitable for personality pathology assessment in adolescents because it integrates a developmental perspective on personality pathology by focusing on identity functioning. However, research on existing Criterion A measures in adolescent samples is scarce (Fossati & Somma, 2021) and to date, only two measures of Criterion A for adolescents are available: the Adolescent Personality Structure Questionnaire (APS-Q; Benzi et al., 2021) and the LoPF-Q 12-18 (Goth et al., 2018).

To conclude, the fields of clinical research and practice could benefit from a short screening instrument to obtain a first indication of severity of personality pathology, both for adults and adolescents. Skodol et al. (2011) proposed a Five-Item Screening Scale for Personality Disorder (FISSPD; see Table 1) as a brief self-report measure of Criterion A. Skodol and colleagues (2011) derived these five items from the General Personality Pathology Scale (GPP), developed by Morey et al., 2011. The GPP is a 65-item scale that was created based on the Severity Indices of Personality Problems (SIPP-118; Verheul et al., 2008) and the General Assessment of Personality Disorder (GAPD; Livesley, 2006). Morey and colleagues (2011) constructed a unidimensional set of items of the GPP that differentiated across different levels of impairment in personality functioning using Item Response Theory. Later, Skodol et al. (2011) extracted five items of the GPP to create the FISSPD. Thus, in contrast to the LPFS-BF (Hutsebaut et al., 2016; Weekers et al., 2018), the FISSPD aims to measure severity of personality pathology as a global construct instead of a two-dimensional construct. Also, the FISSPD is shorter (5 items vs. 12 items) than the LPFS-BF (Hutsebaut et al., 2016; Weekers et al., 2018), which could make the FISSPD more convenient to use, especially for adolescent patients.

The aim of the current study was to examine the factor structure and reliability of the Dutch version of the FISSPD in both adults and adolescents. Further, to investigate the convergent validity of the FISSPD, we investigated its associations with measures of identity functioning (one of the two domains of Criterion A), personality traits (Criterion B), and symptoms of PDs in community samples.

This is the first study which explores psychometric properties such as factor structure and measurement invariance of the FISSPD. Previous research has examined the sensitivity and specificity of the FISSPD for a semi-structured interview diagnosis of personality disorder, which were 79% and 54%, respectively (Skodol et al., 2011).

1.2 Associations between Criterion A and identity functioning

In the conceptualization of Criterion A, identity functioning constitutes an essential aspect in the assessment of impairment in personality functioning. In the current study, we examined identity functioning from a developmental psychopathology perspective (Kaufman et al., 2014) by means of the Self-Concept and Identity Measure (SCIM; Kaufman et al., 2015). The SCIM assess both normative identity processes (consolidated identity) as well as (normative and pathological) disturbances in identity development (disturbed identity) and extreme identity impairment (lack of identity). Researchers have found associations between the disturbed identity and lack of identity SCIM scales and PD symptoms (Bogaerts et al., 2021a) as well as associations specifically with borderline PD in both adults and adolescents (Bogaerts et al., 2018; Bogaerts et al., 2021b; Kaufman et al., 2015). However, to the best of our knowledge, the link between identity from a developmental psychopathology perspective (i.e., identity consolidation/identity disturbance/lack of identity) and (operationalizations of) Criterion A has not yet been explored.

1.3 Associations between Criterion A and personality traits (Criterion B) and personality disorders

Previous studies have investigated associations between Criterion A measures and personality (pathology) measures. Table 2 displays an overview of the results of these studies. Several studies found high correlations between measures of Criterion A and all maladaptive personality traits of Criterion B (Gamache et al., 2019; Hopwood et al., 2018; Huprich et al., 2018; Nelson et al., 2018; Sleep et al., 2019), with negative affectivity and detachment correlating strongest in most studies. Associations between measures of Criterion A and DSM-5 Section II PDs have been studied as well (Goth et al., 2018; Hopwood et al., 2018; Hutsebaut et al., 2016; Sleep et al., 2019; Weekers et al., 2018). The highest correlations were found between Criterion A measures and the borderline, dependent, and schizotypal

PD. Regarding normative personality traits, a positive correlation was found with neuroticism and negative correlations were found with the other Big-Five personality traits (Hopwood et al., 2018). Finally, significant associations were found between Criterion A measures and general personality impairment, both in self- and interpersonal functioning (Hutsebaut et al., 2016; Morey, 2017; Weekers et al., 2018).

1.4 Current study

The current study addresses three research objectives. Our first objective was to examine the factor structure and reliability of the Dutch version of the FISSPD in community adolescents and adults. Further, we aimed to examine its measurement invariance across gender and age to explore whether the FISSPD is measuring a similar construct for males/females and different age groups. As the FISSPD is derived from the GPP (Morey et al., 2011) which is constructed as a unidimensional scale, we expected the FISSPD to be unidimensional and thus to provide one global measure for severity of personality pathology. Our analyses with regard to measurement invariance were exploratory in nature.

Our second objective was to investigate convergent validity of the FISSPD with an identity measure, both in adolescents and adults. Based on previous literature (Bogaerts et al., 2018; Bogaerts et al., 2021a; Bogaerts et al., 2021b; Kaufman et al., 2015), the FISSPD was expected to be negatively associated with consolidated identity and positively associated with disturbed identity and lack of identity.

As a third objective, we examined convergent validity of the FISSPD with several personality (pathology) measures. In adults, we examined associations between the FISSPD and DSM-IV/DSM-5 Section II (symptoms of) PDs, normative/pathological personality traits, and general personality impairment. With regard to PDs, we expected the FISSPD to be positively associated with all PDs, given that Criterion A is considered to capture generic, overarching impairment in all PDs (Morey et al., 2011). Based on previous studies (Hopwood et al., 2018; Hutsebaut et al., 2016), we expected that the borderline, dependent, and schizotypal PD would correlate stronger with the FISSPD compared to other PDs. As for Criterion B personality traits, we hypothesized positive correlations between all five

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personality domains and the FISSPD, with the strongest correlations occurring for negative affectivity, detachment, and psychoticism (Gamache et al., 2019, Hopwood et al., 2018; Huprich et al., 2018). Furthermore, we expected a positive relation between the FISSPD and general personality impairment in adults, both in self-functioning and interpersonal functioning domains (Hutsebaut et al., 2016; Morey, 2017). In adolescents, we examined associations between the FISSPD and borderline PD features as well as Big-Five personality traits. We expected the FISSPD to be correlated positively with borderline PD features (Goth et al., 2018). Finally, we hypothesized that the FISSPD would correlate positively with neuroticism and negatively with extraversion, conscientiousness, agreeableness, and openness (Hopwood et al., 2018).

2. Method

2.1 Participants and procedure

Data were collected in three different samples between 2017 and 2019 in Flanders, the Dutch-speaking part of Belgium. Data from participants below the age of 12 (children) and above the age of 65 (older adults) were excluded as well as data from participants who did not complete the FISSPD.

Sample 1 included 231 adult participants (ages 18-64, $M_{age} = 42.02$, $SD_{age} = 13.94$, 48.90% female). A total of 99.60% ($n = 230$) of the participants had the Belgian nationality. To obtain a representative sample of the Flemish population in terms of gender, age and educational level, data from the National Institute for Statistics' national register of the Flemish community (NIS; Statistics Belgium, 2016) were examined. Next, these data were reduced to a sample of 500 people. A total amount of 500 envelopes were prepared, each containing an informed consent document and a questionnaire booklet for a specific individual representative of the Flemish community (e.g.: men between age 23-27 with a master's degree). Next, researchers and master students searched for these individuals in their network (family, friends, neighbors, family of colleagues, friends of their family, etc.). None of the master students or researchers knew each other personally and therefore it is most probable that they have searched for and found participants independent of each other. Despite our efforts, we could not obtain an equal distribution in our sample regarding educational level compared to the Flemish community.

Once individuals agreed to partake in the study, they received two weeks to complete the questionnaire booklet and deliver it back in a closed envelope to the researchers/master students. All respondents signed the informed consent document.

The second sample consisted of 315 adults, aged 18-65 (M_{age} = 29.74, SD_{age} = 12.52, 73.70% female). A total of 96.82% (n = 305) of the participants had the Belgian nationality. This sample was collected through an online questionnaire platform (Qualtrics). A web link was distributed through social media and personal connections. When directed to the webpage, participants were able to read information regarding the study and agree to partake in the study. Only after consent was given, respondents could access the questionnaires.

The third data sample consisted of 1477 adolescents aged between 12 and 17 (M_{age} = 14.39, SD_{age} = 1.71, 59.50% girls). A total of 95.67% (n = 1413) of the participants had the Belgian nationality. This sample was part of the Longitudinal Study on Identity in Adolescents (Buelens et al., 2020a; Buelens et al., 2020b). There were two different versions of the surveys, with one of the versions focusing on personality measures. Only respondents who took part in the version with personality measures were included in the current study. Data collection took place in four secondary schools in Flanders. Informed consent letters were sent out to parents of 2598 students of the four participating schools, as minor participants required active parental consent to participate. A total of 1674 students received parental consent. 1562 of them agreed to participate themselves after reading the informed assent document. Questionnaires were completed during school hours or online if the participants were absent on the day of data collection. During school hours, researchers were present at all times in case of questions or distress. After participating, respondents received a movie ticket. A total amount of 85 participants were excluded from this data sample because they were under the age of 12 and/or did not complete the FISSPD.

Taken together, the three samples included a total of 2023 participants, with 1224 (60.50%) female participants and 799 (39.50%) male participants. Analyses in adults were conducted in Samples 1 and 2 combined (n = 546), whereas analyses in adolescents were conducted in Sample 3 (n = 1477).

All three data collections were approved by the Ethical Committee of the Faculty of Psychology and Educational Sciences (SMEC).

2.2. Measures

All measures in this study were self-report questionnaires. Table 3 displays an overview of the measures that were used to examine convergent validity per sample.

2.2.1 Five-Item Screening Scale for Personality Disorder (FISSPD). To assess Criterion A, all participants completed the Dutch version of the Five-Item Screening Scale for Personality Disorder (FISSPD; Skodol et al., 2011; see Table 1). The FISSPD consists of five items rated on a 5-point Likert scale ranging from 0 (completely disagree) to 4 (completely agree), resulting in a single severity score calculated by the mean of the five item scores. The original English items of the FISSPD (Skodol et al., 2011) were translated into Dutch, followed by an independent back translation. The back translation was compared to the original English version and items were altered where necessary.

2.2.2 Identity functioning. To assess identity functioning, all participants filled out the Dutch version of the Self-Concept and Identity Measure (SCIM; Kaufman et al., 2015). The SCIM is a self-report questionnaire consisting of 27 items. The items are rated on a 7-point Likert scale ranging from 1 (completely disagree) to 7 (completely agree), resulting in three subscales: consolidated identity, disturbed identity, and lack of identity. In a previous study in community adults (in Sample 1 of this study), the Dutch version of the SCIM yielded reliable and valid test scores if items 11 and 16 were excluded from the calculation of the total score in the adult samples (Bogaerts et al., 2018). In a validation study in an adolescent sample (Sample 3 of this study), four items (items 3, 11, 16, and 18) needed to be excluded to obtain valid and reliable test scores (Bogaerts et al., 2021b). In the adult samples of the present study (for the 25-item version of the SCIM), Cronbach's alpha coefficients for consolidated identity, disturbed identity, and lack of identity were .64, .81, and .87, respectively (Sample 1) and .75, .82, and .91, respectively (Sample 2). In the adolescent sample (for the 23-item version of the SCIM), Cronbach's alpha coefficients were .76, .82, and .91, respectively.

2.2.3 Personality disorder symptomatology. The Assessment of DSM-IV Personality Disorders (ADP-IV, Schotte et al., 1998) was used to assess DSM-IV/DSM-5 Section II PD symptomatology in the combined adult sample. The ADP-IV is a Dutch self-report questionnaire consisting of 94 items, assessing the criteria of the 12 PD categories described in the DSM-IV. In the ADP-IV, items are scored on a Trait scale and a Distress scale. The Trait scale is answered on a 7-point Likert scale ranging from 1 (totally disagree) to 7 (totally agree) and measures to which degree a certain train is applicable to the respondent. If an item is scored with a Trait score higher than 4, participants are asked to fill in the Distress scale, a 3-point scale ranging from 1 (totally not) to 3 (most certainly), assessing the level of distress caused by the trait. For example, if a participant rates the following statement 'I am very shy and vulnerable in social situations because I am always afraid of being criticized or rejected' (item 44) with a score of 6 (agree), the participant is asked if this trait ever caused him/her or others distress or problems, which he/she can answer with totally not (1), somewhat (2) or most certainly (3). As all of our samples were community samples, we used the dimensional scoring of the ADP-IV, that is, adding the Trait scores for each PD. Validity of the ADP-IV has been investigated and established in previous studies (Schotte et al., 1998; Schotte et al., 2006). Cronbach's alpha coefficients in this study were adequate, ranging from .75 (schizoid and schizotypal PD) to .88 (avoidant PD) in Sample 1 and from .74 (schizoid PD) to .89 (avoidant PD) in Sample 2.

2.2.4 Borderline personality disorder features. Adolescent participants from Sample 3 completed the 11-item Borderline Personality Features Scale for Children (BPFS-11; Sharp et al., 2014). The BPFS-11 is a self-report questionnaire of 11 items rated on a 5-point Likert scale from 0 (not true at all) to 4 (always true) and covers the core borderline PD features. The validity of the BPFS-11 has been demonstrated in several studies (Fossati et al., 2016; Sharp et al., 2014; Vanwoerden et al., 2019). Cronbach's alpha coefficient in this sample was .84.

2.2.5 General personality impairment. Adult participants from Sample 1 filled out the Dutch Severity Indices of Personality Problems-118 (SIPP-118; Verheul et al., 2008). The SIPP-118 is a self-report questionnaire consisting of 118 items, measuring core components of personality functioning. Both self and other aspects of Criterion A are integrated in this questionnaire. Items are rated on a 4-point Likert

scale ranging from 1 (fully disagree) to 4 (fully agree). The questionnaire provides 16 facet scores. The 16 facets cluster into five higher-order domains: self-control, identity integration, relational capacities, social concordance, and responsibility. The SIPP-118 has been validated in several studies (Arnevik et al., 2009; Feenstra et al., 2011; Verheul et al., 2008). Cronbach's alpha coefficients of the five higher-order domains in this sample were .94, .94, .92, .93, and .89, respectively.

2.2.6 Maladaptive personality traits. To examine maladaptive personality traits described in Criterion B of the DSM-5 AMPD, adult participants from Sample 1 completed the Dutch Personality Inventory for DSM-5 Personality Disorders (PID-5; Krueger et al., 2012). The PID-5 is a self-report questionnaire of 220 items rated on a 4-point Likert scale ranging from 0 (not at all true) to 3 (very true) and assesses 25 maladaptive personality traits that cluster into five higher-order domains, being Negative Affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism. The validity of the PID-5 has been originally demonstrated by Krueger et al. (2012) and has been corroborated by numerous studies (Bastiaens et al., 2016; De Fruyt et al., 2013; Fossati et al., 2013; Wright et al., 2012; Zimmerman et al., 2014). Cronbach's alpha coefficients in this sample were .77, .80, .83, .82, and .85, respectively.

2.2.7 Normative personality traits. The Big-Five personality traits were measured in the adolescent sample (Sample 3) by the 25-item Big-Five Inventory (BFI; Denissen et al., 2008; Gerlitz & Schupp, 2005). Participants rated 25 statements about themselves on a 5-point Likert scale, ranging from 1 (completely untrue) to 5 (completely true). The BFI has been validated in adolescents by Denissen et al. (2008). This self-report questionnaire yields scores on five personality traits: extraversion, neuroticism, openness, conscientiousness, and agreeableness, with Cronbach's alpha coefficients in this sample of .76, .80, .79, .72, and .61, respectively.

2.3 Analysis

With regard to our first objective, the unidimensional factor structure of the FISSPD was tested using Confirmatory Factor Analysis (CFA). Model parameters were estimated with a Weighted Least Square Mean and Variance adjusted (WLSMV) estimation algorithm (MPLUS; Muthén & Muthén, 2017) as advised for ordinal data (e.g., Li, 2016a, 2016b). The model-to-data fit was evaluated with two

criteria (Hu & Bentler, 1998): the comparative fit index (CFI) for fit relative to a null model, with values above .90 referring to acceptable model fit and values above .95 referring to good fit (Hu & Bentler, 1999), and the standardized root mean square residual (SRMR) as the standardized difference between the observed and the predicted correlations, for which values below .06 and below .08 refer to good and acceptable model fit respectively (Hooper et al., 2008). We opted for the SRMR in favor of the RMSEA (Root Mean Square Error of Approximation) as SRMR seems to yield more acceptable type I error rates for ordinal data (Shi et al., 2020). However, we did report the results of the RMSEA fit index to make comparison with future studies using the FISSPD possible. Measurement invariance of the FISSPD was investigated for gender and for age with a series of multigroup CFA using the WLSMV estimation algorithm (Muthén & Muthén, 2017). Configural, metric, and scalar invariance across samples was tested. To test for scalar and metric invariance, we relied on the combination of two fit indices: (1) the ΔCFI, for which values below .01, and (2) the ΔSRMR, for which values below .03 refer to measurement invariance, respectively (Chen, 2007). To test reliability of the FISSPD, Cronbach's alpha coefficients were calculated in all three samples. Alpha values above .70 are considered acceptable (Field, 2018). To examine our second and third research objectives, correlational analyses were conducted between the FISSPD and identity and PD/trait measures/personality impairment. Fisher's r to z transformations were performed online (Weiss, 2011) and the z-test and Cohen's q were used to examine significant differences between correlations. Values of q between .10 and .30 indicate small differences between correlations, values between .30 and .50 indicate moderate differences and values above .50 indicate large differences (Cohen, 1988).

3. Results

3.1 Factor structure, measurement invariance, and reliability

The one-factor model fitted our data well, $\chi^2 = 143.249$; df = 5; CFI = .986; SRMR = .022. All item loadings were high and positive (see Table 1). For gender, metric invariance was obtained, but not scalar invariance, meaning that factor loadings were equivalent across gender, but not item intercepts. Table 4 displays the goodness-of-fit statistics for measurement invariance of the FISSPD across gender. For adults versus adolescents, scalar invariance was reached, meaning that item intercepts could be

constrained across age groups. Table 5 presents the fit indices for measurement invariance of the FISSPD across age (adolescents versus adults). As scalar invariance was obtained for adolescents versus adults, mean differences in FISSPD were calculated between Sample 3 (adolescents) and Samples 1 and 2 (adults). Adolescents, $M = 1.48$, $SD = 0.85$, scored significantly higher on the FISSPD than adults, $M = 0.73$, $SD = 0.72$; $F(1, 2017) = 329.45$, $df = 1$, $p < .001$.

Internal consistency coefficients in all three samples were adequate. Cronbach's alpha coefficients in Sample 1, Sample 2, and Sample 3 were .83, .86, and .78, respectively.

3.2 Associations with identity measures

Correlations between the FISSPD and SCIM dimensions in adults and adolescents are presented in Table 6. All correlations were significant at $p < .001$. Correlations were similar in both age groups, i.e. a significant positive correlation with consolidated identity and significant negative correlations with disturbed identity and lack of identity. In both age groups, the correlation between lack of identity and the FISSPD was significantly stronger compared to the correlation between disturbed identity and the FISSPD, $z = 4.07$, $p < .001$, $q = .25$ in the adult sample, and $z = 3.69$, $p < .001$, $q = .14$ in the adolescent sample.

3.3 Associations with personality disorders/traits

Correlations between the FISSPD and personality measures in adults and adolescents are displayed in Table 7.

In adults, all PDs correlated significantly and positively with the FISSPD. Table 8 displays z-values and Cohen's q's for the Fisher's r to z transformations. The borderline PD correlated strongest with the FISSPD, followed by the histrionic, dependent, avoidant, and schizotypal PD. The correlation between the borderline PD and the FISSPD was significantly stronger compared to the correlations between the FISSPD and all other PDs except for the histrionic PD. The histrionic, dependent, avoidant, and schizotypal PD correlated significantly stronger with the FISSPD compared to correlations with the schizoid, antisocial, narcissistic, and obsessive-compulsive PD. As for Criterion B personality traits, all five PID-5 domains correlated significantly positively with the FISSPD. The domains negative

affectivity, detachment, disinhibition, and psychoticism showed significantly stronger correlations with the FISSPD than PID-5 domain antagonism, z = 2.51-3.51, $p < .05$, q = .26-.36. Regarding general personality impairment, significant negative correlations were found between the FISSPD and all SIPP-118 domains. The identity integration domain correlated significantly stronger with the FISSPD than the responsibility domain, z = 2.49, $p < .01$, q = .23, the relation capacities domain, z = 2.43, $p < .01$, q = .23, and the social concordance domain, z = 2.92, $p < .01$, q = .27.

As for adolescents, the FISSPD correlated significantly positively with borderline PD features. As for Big-Five personality traits, all five personality traits were significantly correlated with the FISSPD, with neuroticism correlating positively and extraversion, openness, conscientiousness, and agreeableness correlating negatively. Neuroticism correlated significantly stronger with the FISSPD compared to other Big-Five traits, z = 17.31-25.11, $p < .001$, q = .29-.99, whereas openness correlated significantly lower with the FISSPD compared to the other traits, z = 6.82-17.31, $p < .001$, q = .25-.64.

4. Discussion

The aim of the current study was to examine the structure, reliability, and convergent validity of a five-item screener for Criterion A of the AMPD in both adults and adolescents. A short screener could be of added value to clinical research and practice as it provides a first indication of severity of personality pathology.

As expected, the FISSPD turned out to be unidimensional in our combined sample, with high item loadings. Metric invariance, but not scalar invariance, was obtained for gender. This means that each item contributed to a similar degree to the total factor in both gender groups, but item intercepts were not equivalent across gender. Males and females seem to respond differently on certain items of the FISSPD, regardless of their position on the latent factor. More studies have found scalar non-invariance (or partial scalar invariance) across gender in DSM Section II/Section III measures (Benzi et al., 2021; Carreiras et al., 2020; Haltigan & Vaillancourt, 2016; Jane et al., 2007; Vanwoerden et al., 2019), in which women endorse more intra- and interpersonal items and men endorse more impulsivity-related items. The FISSPD measures intra- and interpersonal functioning in personality disorders and

thus it is possible that the scalar non-invariance in this study was also caused by women scoring higher on certain of these items, regardless of their position on the latent trait. Future research could further examine why intercepts may not be equivalent across gender and could specify which items are endorsed differently in males and females. For the time being, caution is warranted when comparing FISSPD mean scores based on gender since scalar invariance was not reached. For age, metric and scalar invariance was obtained, meaning that factor loadings were equivalent across age and all mean differences in the shared variance of the items were captured by mean differences in the latent construct. Adolescents scored significantly higher on the FISSPD compared to adults. From an identity perspective, this finding makes sense given that identity formation is a prominent task in adolescent development. Consequently, identity distress peaks in adolescence and the transition to adulthood (Erikson, 1968; Bogaerts et al., 2021c). From a personality pathology perspective, this finding may appear surprising at first, given that PDs are considered to be mainly an adult pathology. However, as mentioned before, Criterion A incorporates the developmental aspect of personality pathology by focusing on identity processes (Sharp, 2020; Sharp et al., 2018). Sharp and colleagues suggest that adolescence is a very sensitive phase in terms of self-development and, therefore, is a pre-eminent period for the development of personality pathology. Furthermore, they argue that in some individuals, personality pathology declines towards adulthood because individuals increasingly manage to develop a coherent identity and meet the environments' expectations of taking on an adult role. Other individuals do not succeed in these tasks and, consequently, personality pathology may develop further into adulthood in these individuals. Indeed, studies have found that PD levels tend to decline from childhood to adulthood and that the greatest risk for displaying PD symptoms is during adolescence and early adulthood (Morey & Hopwood, 2013). Taken into account the aforementioned studies, our finding that adolescents score higher on the FISSPD compared to adults makes sense from the personality pathology point of view as well.

In both adolescent and adult samples, the FISSPD was negatively related to consolidated identity and positively related to disturbed identity and lack of identity. Correlations with lack of identity were significantly stronger compared to correlations with disturbed identity. This may indicate that the

FISSPD indeed assesses impairment regarding self-functioning in a dimensional way, as it correlates strongly with disturbed identity, a scale that measures normative identity-related struggles and severe identity distress, and even stronger with lack of identity, a scale that measures a fundamental lack of identity (Kaufman et al., 2015).

As for the link with personality (pathology) in adults, the FISSPD showed strong positive associations with all PDs, which is in line with our hypotheses. Borderline PD correlated stronger with the FISSPD compared to other PDs. This finding is in accordance with research suggesting that borderline personality symptomatology is an indication for general personality dysfunctioning instead of a manifestation of one specific PD (Sharp & De Clercq, 2020). Regarding maladaptive personality traits (Criterion B), all five domains of the PID-5 correlated significantly and positively with the FISSPD. Negative affectivity, detachment, disinhibition, and psychoticism correlated stronger with the FISSPD than the PID-5 domain antagonism, as expected. The FISSPD showed positive associations with all self-functioning and interpersonal functioning domains of the SIPP-118, which is an indication for convergent validity.

In adolescents, a positive association was found between the FISSPD and the borderline PD, as expected. As for Big-Five personality traits, all five personality traits were associated with the FISSPD, confirming our hypothesis of a positive association with neuroticism and a negative association with extraversion, openness, conscientiousness, and agreeableness. Neuroticism correlated most strongly with the FISSPD and openness correlated least strongly. These findings are in accordance with a well-established link between Big-Five personality traits and personality pathology (Widiger et al., 2017). Moreover, the nature of associations found in this study resembles the Big-Five personality traits profile of the borderline PD (studied in adults and adolescents), in which high neuroticism and low conscientiousness and agreeableness are related to the borderline PD (Distel et al., 2009; Samuel & Widiger, 2008; Few et al., 2016; Kendler et al., 2010; Koster et al., 2019).

In sum, this study showed a unidimensional factor structure of the FISSPD and good reliability and convergent validity, both in adolescent and adult samples. However, some limitations and suggestions for future research should be addressed. First, data were collected at one time point and thus

we cannot draw conclusions on test-retest reliability or directionality of effects. Future research should address this limitation by adopting a longitudinal study design. Second, only self-report questionnaires were used to test for convergent validity which may have led to higher correlations due to shared method variance (Podsakoff et al., 2003). Future research could make use of alternative assessment methods to examine associations with the FISSPD such as multi-informant measures or gold-standard interviews, such as the Semi-Structured Interview for Personality Functioning DSM–5 (STIP-5.1; Hutsebaut et al., 2017). Third, all data were collected in community adolescents and adults. Therefore, our findings cannot be generalized to clinical populations of adolescents and adults. It would be interesting to examine if and how findings in clinical samples differ from findings in community samples, both in adults and adolescents. Furthermore, implementing item response theory on the FISSPD in a clinical sample could help to establish which items are better indicators of personality pathology severity.

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6. Tables

Table 1
Five-Item Screening Scale for Personality Disorder (FISSPD; Skodol et al. (2011) and factor loadings in the current study.

Items	Factor loadings
1. I can hardly remember what kind of person I was only a few months ago.	.62
2. My feelings about people change a great deal from day to day.	.61
3. Most of the time I don't have the feeling of being in touch with my real self.	.82
4. I drift through life without a clear sense of direction.	.81
5. I have very contradictory feelings about myself.	.83

Table 2
Associations between Criterion A measures and personality (pathology) measures.

	Sample	Criterion A measure	Personality (pathology) measure	Associations with personality (disorder) measures
Gamache et al., 2019	Community adults & adult patients	Self and Interpersonal Functioning Scale (SIFS; Gamache et al., 2019)	Maladaptive personality traits (Criterion B)	Significant correlations with all PID-5-SF higher order domains, with highest correlations for detachment ($r = .81$), negative affectivity ($r = .76$) and psychoticism ($r = .64$).
Goth et al., 2018	Community adolescents	LoPF–Q 12–18 (Goth et al., 2018)	DSM-IV PDs	Significant correlation with borderline PD features ($r = .74$).
Hopwood et al., 2018	Community adults	Levels of Personality Functioning Scale (LPFS-SR; Morey, 2017)	Maladaptive personality traits (Criterion B)	Moderate to high correlations with all PID-5 trait facets, with perceptual dysregulation ($r = .74$), depressivity ($r = .71$), irresponsibility ($r = .71$) and perseveration ($r = .70$) showing highest correlations with the LPFS-SR.
			DSM-IV PDs	Significant correlations with all PDs. Correlations were highest with borderline PD ($r = .74$), followed by passive-aggressive ($r = .70$), dependent ($r = .69$) and schizotypal PD ($r = .64$).
			Normative personality traits	Significant positive correlation with neuroticism ($r = .60$) and significant negative correlations with agreeableness ($r = -.55$), conscientiousness ($r = -.52$), extraversion ($r = -.38$) and openness ($r = -.35$).
Huprich et al., 2018	Adult patients	DSM-5 Levels of Personality Functioning Questionnaire (DLOPFQ; Huprich et al., 2018)	Maladaptive personality traits (Criterion B)	Significant correlations with all PID-5 higher-order domains, with highest correlations for negative affectivity ($r = .50-.68$), psychoticism ($r = .43-.47$) and detachment ($r = .30-.66$).
Hutsebaut et al., 2016	Adult patients	DSM-5 Levels of Personality Functioning Scale - Brief Form (LPFS-BF; Hutsebaut et al., 2016)	DSM-IV PDs	Significant correlations with borderline PD ($r = .30$) and avoidant PD ($r = .17$).
			General personality impairment	Significant correlations with all five SIPP-118 domains, with highest correlations for identity integration ($r = .69$) and relational capacities ($r = .68$).
Morey, 2017	Community adults	Levels of Personality Functioning Scale (LPFS-SR; Morey, 2017)	General personality impairment	Significant correlations with the SIPP-118, both in self-functioning as interpersonal functioning domains ($r = .71-.83$).
Nelson et al., 2018	Adult patients	DSM-5 Levels of Personality Functioning Questionnaire (DLOPFQ; Huprich et al., 2018)	Maladaptive personality traits (Criterion B)	Significant correlations between all DLOPFQ subscales and PID-5 domain negative affectivity ($r = .18-.30$). Significant correlations between all DLOPFQ subscales (except for identity) and PID-5 domains detachment ($r = .17-.20$) and disinhibition ($r = .20-.21$).

Sleep et al. (2019)	Community adults (who have received psychological/ psychiatric treatment)	Levels of Personality Functioning Scale (LPFS-SR; Morey, 2017)	DSM-IV PDs	Significant correlations with all PDs. The borderline PD ($r = .70$), the schizotypal PD ($r = .65$), the paranoid PD ($r = .61$), dependent PD ($r = .61$) and avoidant PD ($r = .61$) correlated highest with the LPFS-SR.
			Maladaptive personality traits (Criterion B)	Significant correlations with negative affectivity ($r = .67$), disinhibition ($r = .66$), detachment ($r = .61$) and psychoticism ($r = .56$).
Weekers et al., 2018	Adult patients	DSM-5 Levels of Personality Functioning Scale - Brief Form (LPFS-BF; Hutsebaut et al., 2016)	DSM-IV PDs	Significant correlation between the LPFS-BF and the total number of PDs ($r = .33$).
			General personality impairment	Significant correlations between the LPFS-BF and all SIPP-SF (Verheul et al., 2008) domains ($r = -.37$ to $-.52$).

Note. PD = personality disorder; PID-5-SF = Personality Inventory for DSM-5-Short Form (Maples et al., 2015); PID-5 = Personality Inventory for DSM-5 Personality Inventory for DSM-5 (Krueger et al., 2012); SIPP-118 = Severity Indices of Personality Problems-118 (Verheul et al., 2008).

Table 3

Overview of the measures per sample to examine convergent validity.

	Sample 1	Sample 2	Sample 3
Identity measure	SCIM	SCIM	SCIM
Personality (pathology) measure	ADP-IV SIPP-118 PID-5	ADP-IV	BPFS-11 BFI

Note. SCIM = Self-Concept and Identity Measure; ADP-IV = Assessment of DSM-IV Personality Disorders; BPFS-11 = 11-item Borderline Personality Features Scale for Children; SIPP-118 = Severity Indices of Personality Problems-118; PID-5 = Personality Inventory for DSM-5 Personality Disorders; BFI = Big-Five Inventory.

Table 4

Goodness-of-fit indices for testing measurement invariance across gender.

	χ^2	df	CFI	ΔCFI	SRMR	ΔSRMR	RMSEA
Configural	154.800	50	.984		.023		.120
Metric	220.546	45	.978	.006	.031	-.008	.116
Scalar	627.267	31	.936	.042	.044	-.013	.143

Note. CFI = Comparative Fit Index; SRMR = Standardized Root Mean Square Residual; RMSEA = Root Mean Square Error of Approximation.

Table 5

Goodness-of-fit indices for testing measurement invariance across age (adolescents versus adults).

	χ^2	df	CFI	ΔCFI	SRMR	ΔSRMR	RMSEA
Configural	121.721	50	.994		.018		.105
Metric	298.173	45	.986	.008	.031	-.013	.137
Scalar	293.810	31	.987	-.001	.032	-.001	.095

Note. CFI = Comparative Fit Index; SRMR = Standardized Root Mean Square Residual; RMSEA = Root Mean Square Error of Approximation.

Table 6

Correlations between the FISSPD and SCIM dimensions in adults and adolescents.

	Adults (Sample 1 & 2)	Adolescents (Sample 3)
Consolidated identity	-.60	-.64
Disturbed identity	.66	.66
Lack of identity	.78	.73

Note. All correlations were significant at $p < .001$.

Table 7

Correlations between the FISSPD and personality measures in adults (Sample 1 and/or 2) and adolescents (Sample 3).

	Sample 1 & 2	Sample 2	Sample 3
ADP-IV			
Paranoid PD	.55		
Schizoid PD	.40		
Schizotypal PD	.58		
Antisocial PD	.45		
Borderline PD	.69		
Histrionic PD	.63		
Narcissistic PD	.46		
Avoidant PD	.58		
Dependent PD	.61		
Obsessive-compulsive PD	.47		
PID-5			
Negative affect		.53	
Detachment		.45	
Antagonism		.22	
Disinhibition		.53	
Psychoticism		.52	
SIPP-118			
Self-control		-.59	
Identity integration		-.67	
Responsibility		-.52	
Relational capacities		-.53	
Social concordance		-.49	
BPFSC			.69
BFI			
Extraversion			-.34
Neuroticism			.50
Openness			-.09
Conscientiousness			-.37
Agreeableness			-.33

Note. All correlations were significant at $p < .001$ (ADP-IV, SIPP-118, BPFSC, BFI) or at $p < .01$ (PID-5). ADP-IV = The Assessment of DSM-IV Personality Disorders; PID-5 = Personality Inventory for DSM-5 Personality Disorders; SIPP-118= Severity Indices of Personality Pathology-118; BPFSC = Borderline Personality Features Scale for Children; BFI = Big-Five Inventory.

Table 8

z-values and Cohen's *q*'s for the Fisher's *r* to *z* transformations of the correlations between the DSM-IV/5 Section II PDs and the FISSPD in adults.

		1	2	3	4	5	6	7	8	9	10
1. Paranoid PD	*z*		**3.08****	0.72	**2.12***	**3.75****	**2.01***	1.96	0.87	1.45	1.79
	q		**.19**	.04	**.13**	**.23**	**.12**	.12	.05	.09	.11
2. Schizoid PD	*z*			**3.80****	0.96	**6.84****	**5.09****	1.13	**3.95****	**4.54****	1.29
	q			**.23**	.06	**.42**	**.31**	.07	**.24**	**.28**	.08
3. Schizotypal PD	*z*				**2.84****	**3.03****	1.29	**2.67****	0.15	0.73	**2.51****
	q				**.17**	**.18**	.08	**.16**	.01	.04	**.15**
4. Antisocial PD	*z*					**5.87****	**4.13****	0.16	**2.99****	**3.58****	0.33
	q					**.36**	**.25**	.01	**.18**	**.22**	.02
5. Borderline PD	*z*						1.74	**5.70****	**2.88****	**2.30***	**5.54****
	q						.11	**.35**	**.17**	**.14**	**.34**
6. Histrionic PD	*z*							**3.96****	1.14	0.56	**3.79****
	q							**.24**	.07	.03	**.23**
7. Narcissistic PD	*z*								**2.82****	**3.41****	0.17
	q								**.17**	**.21**	.01
8. Avoidant PD	*z*									0.58	**2.66****
	q									.04	**.16**
9. Dependent PD	*z*										**3.24****
	q										**.20**
10. Obsessive-compulsive PD											

Note. *z* and *q* are bolded if *p* < .05 and the accompanying *q* > .10.

* *p* <.05, ** *p* <.01, *** *p* <.001