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The Self-Concept and Identity Measure in patients with personality disorders: A psychometric evaluation and associations with identity processes, core domains of self-functioning, and personality disorder symptoms

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Abstract

As developmental and clinical research on identity has largely developed in disconnect, scholars recommend adopting a developmental psychopathology perspective on identity, which considers adaptive and pathological identity functioning. Such a perspective has also been introduced in the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM*-5) Alternative Model for Personality Disorders (AMPD), which suggests that all personality disorders (PDs) are marked by moderate to extreme deficits in self-functioning (i.e., identity and self-direction). The present study aims to validate the Dutch Self-Concept and Identity Measure (SCIM), a 27-item self-report questionnaire that assesses consolidated identity, disturbed identity, and lack of identity, in 153 psychiatric inpatients with PDs (75.2% female; $M_{\text{age}} = 31.73$). We investigated the factor structure and reliability of the SCIM, and examined associations of SCIM scales with typical identity processes, AMPD domains of self-functioning, and symptoms of all PDs. Results indicated that a 23-item Dutch SCIM produced valid and reliable scores among patients with PDs. Furthermore, SCIM scales were significantly and differentially related to identity commitment processes, ruminative identity exploration, domains of self-functioning, and symptoms of all PDs. Moreover, findings indicated that PDs varied regarding the severity of identity impairment.

Introduction

Developing a sense of personal identity is a psychosocial process that unfolds across the lifespan and is highly relevant during adolescence and the transition to adulthood (Arnett, 2006; Erikson, 1968). Within both developmental and clinical psychology, extensive theory has delineated identity as a primary indicator of personality development (Blatt, 2008; Erikson, 1968; Kernberg, 2006; Marcia, 2006; McAdams, 1996). Nonetheless, there seems to be a lack of shared empirical knowledge on identity across developmental and clinical literature, potentially limiting progress in both research fields (Kaufman et al., 2014; Pasupathi, 2014). Yet, as a dimensional perspective on identity has gained greater footing in current classifications of personality disorders (PDs; e.g., American Psychiatric Association [APA], 2013), scholars increasingly advocate for a developmental psychopathology perspective on identity. Such a perspective considers both adaptive and disturbed identity functioning in the emergence and maintenance of personality pathology (Kaufman et al., 2014; Lind et al., 2022).

To advance this research, the present study aimed to validate the Dutch version of the Self-Concept and Identity Measure (SCIM; Kaufman et al., 2015) in psychiatric inpatients with PDs. The SCIM is a brief self-report questionnaire designed to assess both developmental and clinically significant dimensions of identity (i.e., consolidated identity, disturbed identity, and lack of identity). Furthermore, the SCIM operationalizes identity formation as a process that unfolds in social interactions with the potential of advancing our understanding of identity-personality dynamics in individuals with personality pathology. To evaluate its psychometric properties, the present study (a) evaluated the factor structure and reliability of the Dutch SCIM, (b) examined associations of SCIM scales with identity exploration and commitment processes, and with core domains of self-functioning (self-control, identity integration, and responsibility), and (c) investigated associations between SCIM scales and symptomatology of all PDs.

A Developmental Psychopathology Perspective on Identity

Identity development essentially amounts to addressing the fundamental questions of who one is and who one wants to be (Erikson, 1968). It is a dynamic process that unfolds across the lifespan, but in which progression toward a stable and coherent identity during adolescence and the transition to adulthood is considered paramount to adaptive psychosocial functioning (Arnett, 2006; Erikson, 1968). Within both developmental and clinical psychology, scholars have delineated identity as a crucial developmental task and central to personality development (Blatt, 2008; Erikson, 1950; Kernberg, 2006; Marcia, 2006; McAdams, 2001).

In his pioneering theory on psychosocial development, Erikson (1950, 1968) delineated three potential outcomes of identity formation, which he believed to hold differential associations with personality development. Specifically, he argued that identity synthesis and identity confusion represent markers of normative personality development, whereas identity diffusion indicates risk of personality pathology. Subsequently, Marcia (1966) focused on the behavioral processes through which these identity outcomes may come into being (i.e., exploration and commitment) and suggested that problems associated with these processes indicate risk of personality pathology (Marcia, 2006). Similarly, clinical scientists have long emphasized identity as a marker of personality development, with identity disturbance being a cardinal feature of borderline PD (e.g., Blatt, 2008; Kernberg, 1984, 2006). Although these perspectives on identity can be traced back to different theoretical perspectives, they all highlight identity as one of the core features of personality (dysfunction).

Nonetheless, developmental and clinical research on identity has largely developed in disconnect (Campbell et al., 2021; Kaufman et al., 2014). Whereas developmental scientists have primarily concentrated on typical identity development in young individuals, clinical scientists have mainly considered pathological identity functioning within vulnerable groups. Specifically, contemporary developmental research has moved toward process-oriented

operationalizations of identity formation (e.g., Crocetti et al., 2008; Luyckx et al., 2008) and has linked these processes to indicators of psychosocial functioning. One such identity model includes four processes that are believed to contribute to adaptive identity formation (i.e., exploration in breadth, commitment making, exploration in depth, and identification with commitment) and one maladaptive process (i.e., ruminative exploration; Luyckx et al., 2008). A separate, more limited body of research has focused on identity disturbance as a core symptom of borderline PD (see Kaufman & Meddaoui, 2021 for an overview) and, more recently, personality pathology in general (Sharp & Wall, 2021; Widiger et al., 2019).

Although both traditions have generated compelling evidence that identity development is a crucial process with great significance to psychosocial adjustment, it remains challenging to distinguish normative identity confusion from pathological identity functioning (Campbell et al., 2021; Kaufman et al., 2014). As a first step in resolving this issue, scholars have advocated for a dimensional perspective on identity, which considers adaptive and pathological identity aspects in the emergence and maintenance of psychopathology. Such a developmental psychopathology perspective on identity has also been introduced in the Alternative Model for Personality Disorders (AMPD) included in Section III of *the Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM*-5; APA, 2013).

As a way to remedy the shortcomings of an exclusively categorical classification of personality pathology, the AMPD has reformulated PDs along (a) the severity of personality dysfunction, as reflected in deficits in core domains of self- and interpersonal functioning (Criterion A); and (b) individual differences in PD expression, as reflected in a set of pathological personality traits (Criterion B). Deficits in self-functioning refer to problems with identity (i.e., "the experience of oneself as unique, with clear boundaries between self and others; stability of self-esteem and accuracy of self-appraisal; capacity for, and ability to regulate, a range of emotional experiences"; APA, 2013, p. 762) and self-direction ("the pursuit

of coherent and meaningful short-term and life goals; utilization of constructive and prosocial internal standards of behavior; ability to self-reflect productively"; APA, 2013, p. 762). These domains of self-functioning are assessed dimensionally and show considerable similarity to self and identity constructs introduced within developmental and clinical psychology.

To advance the study of identity in community and clinical populations, Kaufman et al. (2015) articulated three dimensions of identity, for which they relied on both developmental and clinical literature (Erikson, 1968; Kernberg, 2006; Kohut, 1977). Indicative of adaptive identity functioning, consolidated identity refers to experiencing a high degree of self-continuity, feeling integrated and whole, and feeling confident about who you are. Disturbed identity is indicative of both normative (and often age-appropriate) feelings of identity confusion as well as more severe and long-lasting identity problems. Finally, and indicative of extreme identity impairment, lack of identity signals feelings of inner emptiness, fragmentation, and being broken. These dimensions can be assessed with the SCIM (Kaufman et al., 2015).

The Self-Concept and Identity Measure

Psychometric properties of the SCIM have been evaluated among U.S. and Belgian adults (Bogaerts et al., 2018; Kaufman et al., 2015), Belgian adolescents (Bogaerts et al., 2021a), and U.S. patients with substance dependence (Kaufman et al., 2019). Generally, these studies yielded support for the SCIM's construct validity as its three-factor structure could be extracted. Furthermore, across these samples, SCIM scales obtained acceptable to excellent internal consistencies. Notwithstanding the previous, two observations are worth mentioning. First, items 11 and 16 (reading, respectively, *"I have been interested in the same types of things for a long time"* and *"At least one person sees me for who I really am"*) demonstrated low factor loadings on the consolidated identity scale in Belgian samples. Second, items 3 and 14 (reading, respectively, *"When I look at my childhood pictures I feel like there is a thread connecting my past to now"* and *"When I remember my childhood I feel connected to my younger self"*)

demonstrated low factor loadings on the consolidated identity scale in Belgian and U.S. samples.

To date, no study has yet evaluated the psychometric properties of any translation of the SCIM in individuals with personality pathology, despite the inclusion of identity impairment as a core symptom of PDs within the AMPD and despite the increasing use of the SCIM in individuals with personality pathology (Billen et al., 2022; Meisner et al., 2021; Price et al., 2022). As the SCIM operationalizes identity formation as a developmental process, consisting of both adaptive and disturbed dimensions, and unfolding in social interactions (Kaufman et al., 2015), it may be a particularly useful tool to capture identity-personality dynamics, opening avenues for both prevention and treatment strategies.

To establish the convergent validity of the SCIM, research has investigated associations of SCIM scales with (a) other identity measures, and (b) measures of maladjustment. With regard to associations with other identity constructs, research in Belgian individuals has indicated that consolidated identity is negatively related to identity confusion and ruminative exploration, and positively related to identity synthesis and identity commitment processes (Bogaerts et al., 2018, 2021a). Opposite associations have been obtained for disturbed identity and lack of identity. To date, no study has evaluated associations between SCIM scales and Criterion A(-like) measures of self-functioning. Such research could, however, demonstrate whether the SCIM may serve as an indicator of deficits in self-functioning.

With regard to associations with maladjustment, studies show that consolidated identity is negatively associated with emotion dysregulation, and symptoms of depression, anxiety, eating disorders, and PDs, whereas opposite associations have been found for disturbed identity and lack of identity (Bogaerts et al., 2018, 2021a, 2021b; Kaufman et al., 2015, 2019). In addition, Chen et al. (2019) have indicated that higher levels of disturbed identity and lack of identity at baseline increase the risk of developing internet addiction, depression, and suicidality

at a follow-up assessment. However, the majority of this research has been conducted in community individuals. Currently, research investigating associations between SCIM scales and PDs in individuals who suffer from personality pathology is lacking.

The Present Study

To address the aforementioned gaps in the literature, the present study forwarded three research objectives. First, this study evaluated the factor structure and internal consistency of the Dutch SCIM in patients with PDs. This way, we could investigate the validity and reliability of the Dutch SCIM in patients with PDs and examine whether similar observations with regard to (poor) item performance would replicate. Second, this study investigated associations of SCIM scales with identity exploration and commitment processes, and core domains of self-functioning (self-control, identity integration, and responsibility) to corroborate previous findings and to test whether the SCIM can function as an indicator of self-functioning included within Criterion A measures. Third, this study investigated associations of SCIM scales with symptoms of all PDs to elucidate whether identity impairment is a characteristic of every PD. As previous research yielded (inconsistent) gender and age differences in SCIM variables (Bogaerts et al., 2021a, 2021b) and PD symptoms (Debast et al., 2015; Paris, 2004; Torgersen et al., 2013), we controlled for potential age and gender effects in the primary analyses.

Based on previous research on the SCIM (Bogaerts et al., 2018, 2021a; Kaufman et al., 2015, 2019), we first expected that a three-factor solution would be a good fit to our data and that acceptable to excellent internal consistencies for all SCIM scales would emerge. Nonetheless, based on previous research in Belgian samples (Bogaerts et al., 2018, 2021a), we tentatively expected items 3, 11, and 14 to perform poorly within the consolidated identity scale. Second, we expected consolidated identity to be positively associated with proactive identity processes and core domains of self-functioning as well as negatively associated with ruminative exploration (Bogaerts et al., 2018). Conversely, we expected disturbed identity and lack of

identity to be negatively associated with proactive identity processes and core domains of self-functioning as well as positively associated with ruminative exploration. Third, we expected consolidated identity to be negatively related to PD symptoms, and disturbed identity and lack of identity to be positively related to PD symptoms (e.g., Bogaerts et al., 2021b; Roche & Jaweed, 2021; Widiger et al., 2019).

Method

Participants and Procedure

Data for the present study were collected in 153 patients recruited from two psychiatric centres located in Flanders, the Dutch-speaking part of Belgium. At University Psychiatric Centre (UPC) KU Leuven Campus Kortenberg (*n* = 43), patients suffered from personality pathology and were referred for psychodiagnostic assessment. At UPC Duffel (*n* = 110), patients suffered from personality pathology, although primarily from borderline PD, and received Dialectical Behavior Therapy (DBT; Linehan, 1993), an evidence-based treatment for borderline PD (see Mehlum, 2021 for a review). At both units, patients were invited to participate in this study by the clinical psychologist who conducted the general assessment for clinical purposes. All patients completed a set of questionnaires after providing written informed consent. The present study was approved by the ethical committee of research UZ/KU Leuven and the ethical committees of the participating hospitals.

Of the total group, 115 respondents were female (75.2%) and 37 were male (24.2%), with gender information missing for one respondent. The mean age of respondents was 31.73 (*SD* = 10.44; range = 18-58 years) and most patients had the Belgian nationality (94.2%). A total of 66 respondents (43.2%) reported being in a relationship. With regard to level of education, 4.6% of respondents indicated having no education, 17.6% primary education, 47.1% secondary education, and 27% post-secondary education, with information missing for five respondents (3.3%).

Instruments

All patients completed the SCIM (Kaufman et al., 2015; Dutch translation: Bogaerts et al., 2018) and the Assessment of DSM-IV Personality Disorders (APD-IV; Schotte et al., 1998) to respectively assess identity functioning and PD symptomatology. Additionally, a total of 40 patients (and these patients were all hospitalized at UPC Kortenberg) completed the Dimensions of Identity Development Scale (DIDS; Luyckx et al., 2008) and the Severity Indices of Personality Problems-Short Form (SIPP-SF; Verheul et al., 2008) to assess identity processes and core domains of self-functioning, respectively.

The SCIM (Kaufman et al., 2015; Dutch translation: Bogaerts et al., 2018) is a brief self-report questionnaire designed to assess adaptive and disturbed dimensions of identity. It consists of 27 items, scored on a 7-point Likert-type scale ranging from 1 (*completely disagree*) to 7 (*completely agree*), which yield three subscales: consolidated identity ($n = 10$; e.g., *"I know what I believe or value"*), disturbed identity ($n = 11$; e.g. *"My opinions can shift quickly from one extreme to another"*), and lack of identity ($n = 6$; e.g., *"I feel empty inside, like a person without a soul"*). Scale scores are based on the mean scores of their respective items. The Dutch SCIM has previously produced valid and reliable test scores (Bogaerts et al., 2018, 2021a).

The DIDS (Luyckx et al., 2008) is a 25-item Dutch self-report questionnaire that assesses five identity processes: exploration in breadth (e.g., *"I think actively about different directions I might take in my life"*), commitment making (e.g., *"I know which direction I am going to follow in my life"*), exploration in depth (e.g., *"I think about whether the aims I already have for life really suit me"*), identification with commitment (e.g., *"I sense that the direction I want to take in my life will really suit me"*), and ruminative exploration (e.g., *"It is hard for me to stop thinking about the direction I want to follow in my life"*). Each process is measured by five items scored on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Scale scores are based on the mean scores of their respective items. The DIDS

has previously produced consistent results (e.g., Pesigan et al., 2014; Schwartz et al., 2011; Zimmermann et al., 2013). In the present study, Cronbach's alpha coefficients were, respectively, .83, .95, .88, .86, and .81.

The SIPP-SF, a shortened version of the SIPP-118 (Dutch translation and validation: Verheul et al., 2008), is a 60-item self-report questionnaire that assesses five core domains of personality functioning, which resemble the domains of self- and interpersonal functioning as delineated in Criterion A of the AMPD. Specifically, the SIPP-SF assesses three domains of self-functioning: self-control (e.g., *"Sometimes I get so overwhelmed that I can't control my reactions"*), identity integration (e.g., *"I am often confused about what kind of person I really am"*), and responsibility (e.g., *"I seem to lack the sense of responsibility necessary to meet my obligations"*). In addition, the SIPP-SF assesses two domains of interpersonal functioning: relational capacities and social concordance. Each domain is measured by 12 items scored on a 4-point Likert-type scale ranging from 1 (*completely disagree*) to 4 (*completely agree*). Scale scores are based on the mean scores of their respective (reversed) items. In the current study, we focused on the three domains of self-functioning, which yielded Cronbach's alpha coefficients of, respectively, .90, .86, and .85.

The ADP-IV (Schotte et al., 1998) is a Dutch self-report questionnaire that assesses the diagnostic criteria for all PDs included in DSM-IV (or DSM 5 Section II). Specifically, respondents are invited to assess the typicality of 94 traits on a 7-point Likert-type scale ranging from 1 (*totally disagree*) to 7 (*totally agree*), which yields a trait-score for each item. When a trait is assessed as typical (a score > 4), respondents are invited to indicate to what extent that trait has caused them or others distress or problems on a 3-point Likert-type scale ranging from 1 (*totally not*) to 3 (*most certainly*), which yields a distress-score. The ADP-IV produces both dimensional and categorical scores. Dimensional PD scores are calculated from summing the trait-scores for each specific PD. Categorical PD diagnoses require a trait-score greater than 4

and a distress-score greater than 1 (T>4 & D>1) for the number of symptoms that is needed to meet the specific PD diagnoses. Table 1 presents the prevalence rates of Section II PD diagnoses in our clinical sample based on the algorithm T>4 & D>1. The ADP-IV has previously produced valid and reliable scores (De Doncker et al., 2000; Schotte et al., 1998). In the present study, Cronbach's alpha coefficients ranged from .74 (schizoid PD) to .85 (avoidant PD).

Table 1. *Prevalence rates of DSM-5 Section II PD diagnoses*

	Paranoid	Schizoid	Schizotypal	Antisocial	Borderline	Histrionic	Narcissistic	Avoidant	Dependent	Obsessive-Compulsive
n	57 (37.3%)	24 (15.7%)	46 (30.1%)	32 (20.9%)	102 (66.7%)	27 (17.6%)	9 (5.9%)	82 (53.6%)	46 (30.1%)	71 (46.4%)

Note. Of 153 patients, 101 (66%) met more than two PD diagnoses as assessed using the ADP-IV.

Data Analysis

First, we examined associations between all study variables and age using Pearson correlations. As calculating 21 correlation coefficients increases the risk of a Type I error (i.e., incorrectly rejecting the null hypothesis), a Bonferroni adjustment was used by adjusting the level of significance to $p = .002$ (i.e., dividing the pre-specified level of significance, $p = .05$, by the number of simultaneously tested hypotheses, which is 21; Chen et al., 2017). Second, we investigated gender differences in study variables by conducting four multivariate analyses of variance (MANOVAs) with gender as a fixed factor and SCIM scales, identity processes, domains of self-functioning, and PD symptoms as respective dependent variables. If a significant Wilks' λ ($p < .05$) was obtained, Bonferroni corrected univariate post hoc tests to adjust for multiple comparisons were considered. Third, we evaluated the factor structure of the SCIM using a confirmatory factor analysis (CFA) using robust maximum likelihood estimation (MLR)[1] in Mplus 8.0 (Muthén & Muthén, 2017). Four criteria were used to evaluate model fit:

[1] CFA using diagonally weighted least squares (WLSMV; designed for ordinal data) did not result in better model fit and revealed similar poor performing items. As observed data may be considered

(1) the Satorra-Bentler chi-square (S-Bχ^2), which should be as small as possible (Schermelleh-Engel et al., 2003); (2) the Comparative Fit Index (CFI) with values between .90 and .95 indicating acceptable fit and values above .95 indicating good fit; (3) the Tucker-Lewis Index (TLI) with values between .90 and .95 indicating acceptable fit and values above .95 indicating good fit; and (4) the Root Mean Square Error of Approximation (RMSEA) with values below .08 indicating acceptable fit and values below .06 indicating good fit (Kline, 2004; Marsh et al., 2004). Fourth, reliability of SCIM scales was examined using Cronbach's alpha coefficients. George and Mallery (2003) suggest that alpha values above .70, .80, and .90 indicate respectively acceptable, good, and excellent reliability. Fifth, correlations among SCIM scales, identity processes, self-functioning domains, and PD symptoms were analyzed using Pearson correlations. Hemphill (2003) suggests that coefficients below .20, between .20 and .30, and above .30 indicate respectively small, medium, and large effects. In addition, we performed hierarchical regression analyses with PD symptoms as dependent variables, and age and gender (step 1), and SCIM scales (step 2) as independent variables. To investigate whether disturbed identity and lack of identity significantly differed from one another regarding their associations with PDs, we estimated their corresponding 95% confidence intervals via bias corrected bootstrap (1000 re-samples). When the confidence intervals of the beta coefficients would overlap by less than 50%, the difference between the beta coefficients would be considered statistically significant ($p < .05$; Cumming, 2009).

Results

Preliminary Analyses

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approximately continuous if the number of categories is sufficiently large (>5), parametric tests are more robust than nonparametric tests and can be used with ordinal data (Norman, 2010; Sullivan & Artino, 2013), and MLR has been found to outperform WLSMV in small samples ($N < 200$; Li, 2016), we decided to perform CFA using MLR to investigate the SCIM's factor structure.

Table 2 presents descriptive statistics of study variables, associations between variables and age, and gender differences in variables. Pearson correlations indicated that consolidated identity and schizoid PD are negatively associated with age, whereas disturbed identity and borderline PD are positively associated with age. Nonetheless, the Bonferroni corrected post hoc test revealed none of these correlations to be significant at the $p = .002$ level. MANOVAs yielded no significant gender differences in SCIM scales (Wilks' $\lambda = .989$, $p = .656$), identity processes (Wilks' $\lambda = .829$, $p = .218$), or self-functioning domains (Wilks' $\lambda = .947$, $p = .554$). Although a significant MANOVA was obtained for testing gender differences in PDs (Wilks' $\lambda = .823$, $p = .002$), Bonferroni corrected post hoc tests revealed no significant differences at the $p = .005$ level (although men reported higher scores on narcissistic PD than women at the $p = .006$ level). Consolidated identity was negatively related to disturbed identity and lack of identity, and disturbed identity and lack of identity were positively associated with one another.

Factor Structure and Reliability of SCIM Scales

A CFA including all items indicated that a three-factor model had an inadequate fit (see Table 3). We excluded items 3, 11, and 14 from the consolidated identity scale and item 23 from the disturbed identity scale because of low factor loadings of, respectively, .212, .322, .145, and .292 (< .35; Kline, 2004). This resulted in a better, but still inadequate fit. In the next step, we included two error correlations between related items from different factors (items 1-7; 9-24) and two error correlations between related items within a single factor (items 4-10; 13-20) that were suggested by the modification indices. These pairs of items show a high degree of overlap in content, which can trigger correlated errors (e.g. *"I know what I believe or value"* and *"I have never really known what I believe or value"*; Byrne, 2001). Ultimately, the three-factor model had a good fit. Furthermore, alpha coefficients for consolidated identity, disturbed identity, and lack of identity scales were, respectively, .78, .87, and .86.

Table 2. *Descriptive statistics, associations between study variables and age, and gender differences in study variables*

	r	Total sample		Gender differences				
	Age	*M*(*SD*)	Min-Max	Males *M*(*SD*)	Females *M*(*SD*)	*F*	*Df*	Partial η²
SCIM – identity dimensions								
Consolidated identity	.23	4.15 (1.11)	1.43 – 6.86	4.17 (1.11)	4.14 (1.11)	0.02	1, 150	.000
Disturbed identity	-.20	3.51 (1.18)	1.20 – 6.20	3.37 (1.04)	3.56 (1.23)	0.69	1, 150	.005
Lack of identity	-.08	4.89 (1.34)	1.00 – 7.00	4.72 (1.22)	4.96 (1.38)	0.90	1, 150	.006
DIDS – identity processes								
Exploration in breadth	-.27	3.43 (0.84)	1.00 – 5.00	3.32 (1.01)	3.50 (0.67)	0.47	1, 40	.012
Exploration in depth	-.28	3.25 (1.00)	1.00 – 5.00	2.93 (0.97)	3.56 (0.95)	4.55	1, 40	.102
Ruminative exploration	.06	3.54 (0.83)	1.40 – 5.00	3.36 (0.90)	3.70 (0.77)	1.74	1, 40	.042
Commitment making	-.00	2.93 (1.07)	1.00 – 5.00	2.96 (1.22)	2.94 (0.94)	0.01	1, 40	.000
Identification with commitment	.19	2.76 (0.88)	1.00 – 4.80	2.77 (0.91)	2.72 (0.89)	0.04	1, 40	.001
SIPP-SF – self-functioning domains								
Self-control	-.09	2.70 (0.67)	1.42 – 4.00	2.75 (0.68)	2.65 (0.69)	0.25	1, 40	.006
Identity integration	.09	2.25 (0.59)	1.17 – 3.67	2.36 (0.52)	2.16 (0.65)	1.18	1, 40	.029
Responsibility	.14	2.85 (0.58)	1.42 – 3.83	2.75 (0.49)	2.93 (0.67)	0.95	1, 40	.023
ADP-IV – PD symptoms								
Paranoid PD	.08	3.78 (1.39)	1.00 – 7.00	3.63 (1.36)	3.83 (1.41)	0.56	1, 148	.004
Schizoid PD	.17	3.25 (1.19)	1.00 – 6.57	3.31 (1.17)	3.24 (1.21)	0.12	1, 148	.001
Schizotypal PD	-.02	3.62 (1.17)	1.00 – 6.78	3.49 (0.94)	3.68 (1.23)	0.67	1, 148	.004
Antisocial PD	-.12	2.51 (1.16)	1.00 – 6.29	2.78 (1.02)	2.43 (1.19)	2.62	1, 148	.017
Borderline PD	-.20	4.66 (1.31)	1.60 – 7.00	4.39 (1.15)	4.76 (1.35)	2.18	1, 148	.015
Histrionic PD	-.08	3.37 (1.18)	1.13 – 7.00	3.28 (1.18)	3.41 (1.19)	0.33	1, 148	.002
Narcissistic PD	.13	2.42 (1.00)	1.00 – 6.00	2.81 (0.97)	2.28 (0.98)	7.92	1, 148	.051
Avoidant PD	.09	4.44 (1.38)	1.00 – 7.00	4.01 (1.20)	4.58 (1.41)	4.74	1, 148	.031
Dependent PD	-.07	3.85 (1.15)	1.13 – 6.38	3.58 (1.07)	3.93 (1.17)	2.63	1, 148	.017
Obsessive-Compulsive PD	.08	3.95 (1.13)	1.13 – 6.38	3.68 (1.15)	4.04 (1.12)	2.79	1, 148	.018

Note. No correlations were significant at the $p < .001$ level. No F-values were significant at the $p < .005$ level.

Table 3. *Fit indices for testing confirmatory factor analysis using MLR*

Model fit	S-Bχ^2 (*df*)	*p*	CFI	TLI	RMSEA [90% CI]
Three factors including all items					
	629.261 (321)	< .001	.787	.767	.079 [.070, .088]
Three factors excluding items 3, 11, 14, and 23					
	441.014 (227)	< .001	.836	.817	.078 [.068, .089]
Three factors excluding items 3, 11, 14, and 23, and including four error correlations					
	347.394 (223)	< .001	.904	.892	.060 [.048, .072]

Note. S-Bχ^2 = Satorra-Bentler chi-square; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean Square Error of Approximation.

Associations Between SCIM Scales, Identity Processes, and Self-functioning Domains

As evident from Table 4, consolidated identity was positively associated with commitment making and identification with commitment, and negatively associated with ruminative exploration. Lack of identity was negatively associated with commitment making and identification with commitment, and positively associated with ruminative exploration. Disturbed identity was positively related to ruminative exploration. No significant associations between SCIM scales and proactive exploration processes emerged. Furthermore, consolidated identity yielded positive associations with self-control, identity integration, and responsibility (i.e., core domains of self-functioning). Disturbed identity and lack of identity yielded negative associations with self-control and identity integration, but were unrelated to responsibility.

Although not a primary focus of the present study, interesting correlations could be observed between identity processes and domains of self-functioning. More specifically, both commitment processes showed positive associations with identity integration, whereas ruminative exploration showed negative associations with self-control and identity integration. Proactive exploration processes were not significantly related to domains of self-functioning.

Table 4. *Zero-order correlations among SCIM scales, identity processes, and Criterion A domains of self-functioning*

	2	3	4	5	6	7	8	9	10	11
SCIM – identity dimensions										
1. Consolidated identity	-.59***	-.63***	.08	.16	-.39*	.40**	.39**	.60***	.45**	.44**
2. Disturbed identity	-	.56***	.30	.26	.49***	-.01	-.25	-.63***	-.50***	-.19
3. Lack of identity		-	-.19	-.05	.61***	-.50***	-.67***	-.45**	-.76***	-.04
DIDS – identity processes										
4. Exploration in breadth			-	.56***	.07	.31*	.21	-.19	.04	-.07
5. Exploration in depth				-	-.03	.49***	.25	-.08	.09	.19
6. Ruminative exploration					-	-.48**	-.55***	-.53***	-.61***	-.23
7. Commitment making						-	.62***	.23	.38*	.27
8. Identification with commitment							-	.14	.52***	.17
SIPP-SF – self-functioning domains										
9. Self-control								-	.45**	.23
10. Identity integration									-	-.02
11. Responsibility										-

Note. *p < .05; **p < .01; ***p < .001.

Associations Between SCIM Scales and PD Symptoms

Correlations among SCIM scales and PD symptoms are presented in Table 5. Consolidated identity was negatively associated with all PDs except not with narcissistic and obsessive-compulsive PDs. Disturbed identity was positively related to all PDs but schizoid PD. Finally, lack of identity was positively related to all PDs but narcissistic PD.

Standardized beta coefficients obtained from the hierarchical regression analyses are presented in Table 6. Consolidated identity positively explained unique variance in narcissistic PD, but did not explain variance in any other PD. Disturbed identity positively accounted for variance in all PDs except not in schizoid and avoidant PDs. Finally, lack of identity positively accounted for variance in all PDs except not in antisocial, histrionic, narcissistic, and obsessive-compulsive PDs. As follows, paranoid, schizotypal, borderline, and dependent PDs were positively related to both disturbed and lack of identity, with both scales being equivalently associated with these PD symptoms. Furthermore, antisocial, histrionic, narcissistic, and obsessive-compulsive PDs were only positively related to disturbed identity, whereas schizoid and avoidant PDs were only positively related to lack of identity.

Discussion

Theory and research highlight identity formation as a crucial developmental process for psychosocial functioning (Campbell et al., 2021; Kaufman & Crowell, 2018; Kaufman & Meddaoui, 2021). Research findings on identity are dispersed across developmental and clinical literature at the expense of a shared empirical knowledge. Consistent with a developmental psychopathology perspective, Kaufman et al. (2015) have synthesized the literature on identity into a dimensional assessment of identity that assesses consolidated identity, disturbed identity, and lack of identity (i.e. the SCIM). This study evaluated the psychometric properties of the Dutch SCIM and examined associations of SCIM scales with identity processes, self-functioning domains, and PD symptoms in psychiatric inpatients with personality pathology.

Table 5. *Zero-order correlations between SCIM scales and symptoms of all DSM-5 Section II PDs*

	Paranoid	Schizoid	Schizotypal	Antisocial	Borderline	Histrionic	Narcissistic	Avoidant	Dependent	Obsessive-Compulsive
Consolidated identity	-.39***	-23**	-.32***	-.41***	-.51***	-.36***	-.06	-.33***	-.41***	-.09
Disturbed identity	.46***	.15	.42***	.46***	.61***	.63***	.40***	.27***	.60***	.23**
Lack of identity	.54***	.43***	.44***	.36***	.62***	.42***	.15	.43***	.52***	.21*

Note. $^*p < .05$; $^{**}p < .01$; $^{***}p < .001$.

Table 6. *Standardized betas for the hierarchical regression analyses of all PD dimensions on age, gender, and SCIM scales*

	Paranoid	Schizoid	Schizotypal	Antisocial	Borderline	Histrionic	Narcissistic	Avoidant	Dependent	Obsessive-Compulsive
Age	.09	.18*	-.01	-.14	-.19*	-.08	.10	.11	-.06	.10
Gender	.05	.04	.08	-.11	.08	.01	-.20*	.16	.10	.14
R^2	.01	.03	.01	.03	.05	.01	.06	.03	.02	.03
Consolidated identity	-.01	-.03	.02	-.13	-.05	.05	.27**	-.16	.02	.13
Disturbed identity	.26**	-.06	.29**	.36***	.37***	.59***	.60***	-.02	.44***	.22*
Lack of identity	.41***	.49***	.30**	.13	.37***	.13	.05	.36***	.31***	.16
R^2	.36	.26	.26	.30	.50	.40	.31	.24	.42	.09
ΔR^2	.35	.23	.25	.27	.45	.39	.25	.21	.40	.06

Note. $^*p < .05$; $^{**}p < .01$; $^{***}p < .001$.

First, CFA supported the three-factor structure of a 23-item Dutch SCIM among inpatients with PDs. After excluding items 3, 11, and 14 from the consolidated identity scale and item 23 from the disturbed identity scale, and including four error correlations, the three-factor solution had a good fit. In line with studies in Belgian and US samples (Bogaerts et al., 2018, 2021a; Kaufman et al., 2015, 2019), this study highlighted poor functioning of items 3 and 11 (reading *"When I look at my childhood pictures I feel there is a thread connecting my past to now"* and *"When I remember my childhood I feel connected to my younger self"*). Furthermore, and consistent with research in Belgian community samples (Bogaerts et al., 2018, 2021a), item 11 (reading *"I have been interested in the same types of things for a long time"*) appeared to perform poorly among patients as well. Collectively, as these items perform poorly across independently collected samples, they may need to be revised or removed to optimize the validity of the consolidated identity scale. They may be too difficult, may require unrealistic memory capacities, or may be difficult to translate in a meaningful way. Furthermore, although higher scores on item 11 should be indicative of identity consolidation, individuals who have adapted their identity due to age maturation and/or changing circumstances may indicate a low(er) score on this item despite their adaptive ways toward identity consolidation.

Inconsistent with research in US samples (Kaufman et al., 2014, 2019), but consistent with studies in Belgian community adults (Bogaerts et al., 2018), item 23 (*"I am more capable when I am with others than when I am by myself"*) showed a low factor loading on the disturbed identity scale (.292). Additionally, and similar to previous studies (Bogaerts et al., 2018, 2021a; Kaufman et al., 2019), results pointed to a lower factor loading of item 16 on the disturbed identity scale (.388), although higher than the pre-specified cut-off of .35 (Kline, 2004). In sum, whereas consolidated identity items 3, 11, and 14 seem to perform poorly across US and Belgian samples and need revision, more research on the functioning of disturbed identity items 16 and 23 is necessary to reach definite claims on the need to remove or revise them.

In line with previous research (Bogaerts et al., 2018, 2021a; Kaufman et al., 2015, 2019), intercorrelations between SCIM scales showed that consolidated identity was negatively associated with disturbed identity and lack of identity, whereas disturbed identity and lack of identity were positively associated with one another. Although SCIM scales represent distinct dimensions and scores on one dimension must be, consistent with a dimensional perspective, considered independent from scores on another dimension, the present findings seem to indicate that those who report high levels of adaptive identity functioning will likely report low levels of disturbed identity functioning and vice versa. Nonetheless, as research demonstrates identity to develop and operate differently within specific domains (e.g., relationships and occupation; Albarello et al., 2018; Campbell et al., 2019) and the SCIM operationalizes identity as a global construct not tied to domains, investigating interrelations among SCIM scales remains relevant, particularly when studying a different population.

Second, and corroborating previous findings in community adults (Bogaerts et al., 2018), consolidated identity was positively associated with identity commitment processes, and negatively with ruminative exploration. Alternatively, lack of identity was negatively associated with commitment processes, and positively with ruminative exploration. Collectively, inpatients who reported lower levels of adaptive identity functioning and/or higher levels of clinically significant identity disfunctioning were less likely to have made a decision about the life direction they want to pursue and were more likely to feel uncertain and worry about their (lack of) life direction. In the present study, disturbed identity was solely positively associated with ruminative exploration, implying that inpatients who struggled with mild or more severe identity disturbance were also more likely to lapse into a ruminative cycle of worry about their identity. Partially in line with previous research (Bogaerts et al., 2018), SCIM scales were unrelated to exploration in breadth and exploration in depth, i.e. adaptive and proactive processes toward identity consolidation. This indicates that lower levels of proactive

exploration are not necessarily associated with identity disfunctioning in patients with PDs. Consistent, Verschueren et al. (2017) found no significant difference in proactive exploration when comparing women with eating disorders with age-matched community controls. Although proactive identity processes may contribute to the development of a consolidated identity, commitment processes signal the presence or absence of specific decisions relevant to individuals' identity and seem particularly indicative of identity (dis)functioning.

In addition, the present study was the first to indicate significant associations between SCIM scales and core domains of self-functioning included in Criterion A(-like) measures. In line with our tentative expectations, consolidated identity was positively associated with identity integration, whereas disturbed identity and lack of identity were negatively associated with identity integration. Similar to the scales of the SCIM, the identity integration scale captures the (in)ability to see oneself and one's own life as stable, integrated, and purposive (Verheul et al., 2008). Furthermore, consolidated identity was positively associated with self-control, whereas disturbed identity and lack of identity were negatively associated with self-control, referring to the capacity to tolerate, use, and control emotions and impulses (Verheul et al., 2008). Consistent with these findings, both theory and research emphasize identity to be a crucial resource for self- and emotion regulation (Billen et al., 2022; Jørgensen & Bøye, 2021; Verschueren et al., 2021). Finally, whereas consolidated identity was positively associated with responsibility, or the ability to set realistic goals, and to achieve these goals in line with the expectations one has generated in others (Verheul et al., 2008), disturbed identity and lack of identity were not significantly related to responsibility. Although speculative, these findings align with our previous discussion on finding no significant associations between SCIM scales and proactive exploration processes. Similar to proactive exploration processes, the responsibility scale assesses the ability to reflect and decide on directions or goals for the future.

As evident from these latter findings, SCIM scales only capture certain elements of the Criterion A self-functioning domains. As apparent from the descriptions of identity and self-direction within the AMPD, these domains include a multitude of self- and identity-related constructs that may go beyond identity, such as self-esteem, self-reflection, and emotion regulation. But despite its more narrow focus, the SCIM may be a particularly useful instrument to assess identity functioning as it operationalizes identity formation as a process that develops over time, consists of both adaptive and maladaptive dimensions, and unfolds through interaction with the social environment (Kaufman et al., 2015). Differently, recently developed instruments that assess AMPD domains of self-functioning provide a more static (though) dimensional operationalization of self-functioning, disregarding the developmental character and social dynamics of identity formation.

Third, and consistent with our expectations (Bogaerts et al., 2021b; Roche & Jaweed, 2021; Sharp & Wall, 2021; Widiger et al., 2019), consolidated identity was generally negatively associated with PD symptoms, whereas disturbed identity and lack of identity were positively associated with PD symptoms. These findings corroborate those of previous research following the AMPD and validate the inclusion of identity impairment as a core diagnostic feature of all PDs (Gamache et al., 2019; Morey et al., 2011; Sharp & Wall, 2021; Sleep et al., 2019; Widiger et al., 2019). Nevertheless, they do not provide insight into how deficits in identity are expressed differently across PDs. However, the present study also revealed that PDs vary with regard to their associations with SCIM scales and thus level (or severity) of identity (dis)functioning. This way, this study contributes to our understanding of identity functioning across PD presentations and opens up avenues for more specific PD interventions.

The results indicated that symptoms of antisocial, borderline, histrionic, and narcissistic PDs are strongly associated with a disturbed identity. Patients who reported higher levels of any of these PDs thus seem more likely to experience confusion about who they are, struggle

with discontinuities in their values, opinions, and beliefs, and anchor their sense of self in other(s) by, for instance, relying on them to shape their identity and guide their future thoughts, feelings, and actions. Our results map well onto findings of a qualitative study in women with borderline PD, revealing identity disturbance to be a multifaceted experience consisting of various characteristics among which some align with the content of the disturbed identity scale: (a) having a disintegrated and unstable image of the self, (b) lacking clear conceptions of one's own beliefs, norms, and values, which compromises decision-making, and (c) depending on others (and their identities) in an attempt to structure or stabilize the own identity (Jørgensen & Bøye, 2021). Our results may thus imply that these characteristics are core features of antisocial, narcissistic, and histrionic PDs as well. Despite a shortage of empirical studies investigating (the manifestation of) identity disturbance within these PDs, their diagnostic formulations within the AMPD allude to these features. For instance, identity-related problems are described as "self-esteem derived from personal gain, power, or pleasure, and goal setting based on personal gratification" for antisocial PD and as "excessive reference to others for self-definition and self-esteem regulation, and goal setting based on approval from others" for narcissistic PD.

Furthermore, whereas antisocial, narcissistic, and histrionic PDs were uniquely associated with disturbed identity (as they did not obtain significant associations with lack of identity), borderline PD was characterized by both a disturbed identity and a lack of identity. Patients who reported higher levels of borderline PD also were more likely to suffer from feelings of inner emptiness, fragmentation, and being broken. Although the distinction between identity disturbance and lack of identity has received little theoretical, methodological, or empirical attention, both theory and research have attended to the experience of chronic feelings of emptiness in individuals with borderline PD, describing it as a dissociative experience with a sense of nothingness, numbness, and disconnection from self and others that may arise under high levels of stress (e.g., Jørgensen & Bøye, 2021; Kernberg, 1984; Miller et al., 2021; Price

et al., 2022). As the ability to experience and sustain a sense of self is considered to be a precondition for developing a temporally stable and integrated personal identity (Kernberg, 1984, 2006; Marcia, 2006), individuals with (severe) borderline PD may benefit from treatment strategies that foster a sense of self rather than a sense of identity.

Similarly, results revealed that patients who reported higher levels of paranoid, schizotypal, and dependent PDs are also more likely marked by both a disturbed identity and a lack of identity. Like individuals with borderline PD, these individuals may present themselves with a fragile sense of self that comes with feelings of inner emptiness and being broken, and (as a potential consequence) an impaired sense of personal identity and authorship over one's life, which they attempt to overcome by overly depending on others. Partly corroborating these results, Meisner et al. (2021) demonstrated that patients with borderline and schizotypal PDs report high scores on SCIM's disturbed identity and lack of identity scales. Furthermore, D'Agostino et al. (2021) pointed to large positive associations between paranoid, schizotypal, and dependent PDs, and feelings of emptiness. As individuals with paranoid, schizoid and/or borderline PD are considered to present with a (lower) borderline or psychotic personality structure (Clarkin et al., 2018; Kernberg, 1984; Kernberg & Caligor, 2005), their reality testing and identity may be compromised, resulting in blurred boundaries between self and others, and a fragmented self (De Meulemeester et al., 2021; Jørgensen & Bøye, 2021; Miller et al., 2021).

Differently, patients who reported higher levels of schizoid and avoidant PDs are exclusively characterized by a lack of identity (as no significant associations were obtained with disturbed identity). Consistent with these findings, D'Agostino et al. (2021) found large positive associations between these PDs and feelings of inner emptiness. Although a (lower) borderline or psychotic level of functioning may again underlie these findings, another explanation may be relevant. Both schizoid and avoidant PDs are characterized by a lack of interpersonal relationships. Whereas individuals with schizoid PD lack interest in others and

choose to detach themselves from communal life, individuals with avoidant PD avoid others due to excessive sensitivity to and fear of negative evaluation or rejection (APA, 2013). As most items from the disturbed identity scale assess (maladaptive) social dynamics of identity disturbance, individuals with schizoid and avoidant PDs may report low scores on these items.

Remarkably, whereas PDs were generally unrelated to adaptive identity functioning, our results demonstrated a positive association between narcissistic PD and consolidated identity. Previous research has generated mixed results with some studies showing positive associations between narcissistic PD and identity integration (Bogaerts et al., 2021c; Huxley et al., 2021), and others yielding opposite results (Anderson & Sellbom, 2018; Liggett et al., 2017; Sleep et al., 2019). The inconsistency may be explained by the distinction between grandiose and vulnerable narcissism. Whereas grandiose narcissism manifests itself in exaggerated self-esteem, grandiosity, and an unrealistic sense of superiority, vulnerable narcissism manifests itself in low self-esteem, hypervigilance, and social withdrawal (Miller et al., 2011, 2012; Pincus, 2011). Research confirms that particularly vulnerable narcissism relates to the reported experience of identity impairment, whereas grandiose narcissism predicts the reported experience of adaptive self-functioning (Bogaerts et al., 2021c; Huxley et al., 2021). As the ADP-IV mostly captures grandiose narcissism, we may have obtained mixed results.

Finally, scores on obsessive-compulsive PD were unrelated to lack of identity and demonstrated moderate associations with disturbed identity. Despite a lack of empirical support, theory suggests that individuals with obsessive-compulsive PD manifest a neurotic level of functioning, characterized by intact reality testing and coherent conceptions of self and others (Clarkin et al., 2018). Nonetheless, the AMPD criteria for obsessive-compulsive PD feature a “sense of self derived predominantly from work or productivity, and difficulty with completing tasks and realizing goals” (APA, 2013). As these individuals’ identity often seems

more extrinsically than intrinsically motivated, they may experience more instability and discontinuity in their sense of identity.

Although the present study has generated novel findings, a number of limitations should be acknowledged and addressed in future research. First, our findings are based solely on self-report measures, which may have resulted in reporting bias (Podsakoff et al., 2003). Also, given the ego syntonic character of personality (dysfunction), an exclusive use of self-report measures may not be apt to accurately assess our study variables (APA, 2013; Huprich et al., 2011). Future research could adopt a multi-method assessment including therapists' diagnostic impressions (Samuel et al., 2013). Second, the cross-sectional nature of our study does not allow for within-person developmental inferences. Future research should examine these constructs longitudinally and test whether impairment in self and identity predisposes individuals to develop personality pathology and/or vice versa. In addition, future studies could investigate whether problems associated with a lack of identity emerge early in development and disrupt or impede subsequent developmental milestones such as identity and personality development.

Despite these limitations, the current findings provide support for the SCIM as a valid and reliable indicator of (mal)adaptive identity functioning, core domains of self-functioning, and personality pathology in patients with PDs. In addition, and consistent with the AMPD, this study corroborates identity impairment as a diagnostic feature of every PD.

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