The Dutch Self-Concept and Identity Measure (SCIM): Factor Structure and Associations with Identity Dimensions and Psychopathology

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Abstract

Identity formation is a lifelong developmental process. Neo-Eriksonian researchers have primarily focused on normative identity exploration and commitment, while overlooking clinical identity disturbance and disorder. As a result, developmental and clinical conceptualizations of identity are largely disconnected. The Self-Concept and Identity Measure (SCIM; Kaufman, Cundiff, & Crowell, 2015) is a self-report questionnaire assessing identity consolidation, identity disturbance, and lack of identity. This instrument facilitates identifying both developmentally-appropriate and clinical-pathological identity functioning. Using three samples of Flemish individuals (totaling 1,087 participants; between 18-67 years; 66.33% female), this study examined the factor structure and reliability of a Dutch version of the SCIM. Furthermore, associations with (1) identity dimensions of exploration and commitment, and (2) symptoms of anxiety, depression, and Borderline Personality Disorder (BPD) were investigated by means of self-report questionnaires. We replicated the three-factor structure of the SCIM in each sample. All scales showed adequate internal consistency coefficients. In line with expectations, differential associations of SCIM scales were obtained with identity dimensions and psychopathological outcomes. The present findings underscore the importance of focusing on Eriksonian notions of identity synthesis and confusion, as well as on more severe forms of identity problems, as captured by SCIM's lack of identity scale.

Keywords: identity formation; factor structure; exploration; commitment; clinical identity disturbance; depression; anxiety; Borderline Personality Disorder

1. Introduction

Forming a stable and coherent identity represents a primary developmental task in adolescence and emerging adulthood, and remains important throughout the lifespan as well (Arnett, 2000; Erikson, 1968). Erikson (1968) conceptualized identity formation on a continuum ranging from identity synthesis to identity confusion, both being possible outcomes of the normative identity crisis. *Identity synthesis* indicates the extent to which different aspects of one's identity fit together into an integrated whole (Schwartz, Zamboanga, Wang, & Olthuis, 2009a). Individuals high on identity synthesis experience a sense of self-continuity over time, and have developed stable values, beliefs, and attitudes (Erikson, 1968; Kaufman, Montgomery, & Crowell, 2014). *Identity confusion* captures difficulties with making and maintaining life commitments and is often characterized by a sense of missing purpose and direction in life (Schwartz et al., 2009a).

Marcia (1966, 1980) describes individual differences in identity formation along two behavioral identity dimensions: *exploration*, or actively comparing various identity alternatives, and *commitment*, whereby individuals make firm choices and adhere to a set of convictions, goals, and values (Marcia, 1988; Schwartz et al., 2009a). Based on these two dimensions, Marcia (1966, 1980) derived four identity statuses: achievement (high on commitment after a period of exploration), moratorium (high on exploration, but low on commitment), foreclosure (high on commitment without prior exploration), and diffusion (low on exploration and commitment).

For decades, neo-Eriksonian identity researchers have investigated how exploration, commitment, and the resulting statuses relate to psychosocial functioning (Kaufman et al., 2014; Schwartz, 2001). Research has indicated that the achievement status is related to well-being and adjustment (Côté & Schwartz, 2002; Waterman, 2007). The diffusion status represents the most detrimental profile (Côté & Schwartz, 2002) and is related to maladaptive outcomes such as psychopathology, adjustment problems, and parent-child conflict (Kroger &

Marcia, 2011). Identity diffusion is associated with a range of psychiatric diagnoses such as bipolar disorder (Inder et al., 2008), eating disorders (Stein & Corte, 2007; Winston, 2005), and depression (Sollberger et al., 2012). Individuals in moratorium and foreclosed statuses typically score in between achievement and diffusion in terms of adjustment (Côté & Schwartz, 2002).

Although we now know a great deal about these identity dimensions and statuses, developmental researchers have devoted little attention to the conceptualization and empirical study of clinical identity disturbance and disorder (Kaufman et al., 2015; Westen, Betan, & Defife, 2011). This oversight is surprising given that identity disturbance is explicitly referenced in the criteria for BPD in Section II of the 5th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association [APA], 2013) and represents, as further described below, a possible indicator of a key criterion of all personality disorders in Section III of DSM-5. Moreover, the limited work on clinical identity disturbance has resulted in a disconnect between developmental and clinical conceptualizations of identity. In an attempt to integrate developmental and clinical identity conceptualizations, clinically-oriented researchers have recently proposed a dimensional perspective on identity, in which identity is conceptualized as a continuum from identity synthesis to identity disturbance and disorder (Kaufman et al., 2014). This perspective is much in line with Erikson's (1968) theory.

In line with dimensional approaches to conceptualizing psychopathology, DSM-5 Section III has included an alternative model for personality pathology that also endorses a continuous perspective on identity (APA, 2013). The alternative model is a hybrid dimensional-categorical approach to personality disorders. It describes personality pathology in terms of impairment in personality functioning (Criterion A), and having one or more pathological personality traits (Criterion B). Moderate or greater impairment in personality functioning is manifested by characteristic difficulties in two or more of the following four domains: identity, self-direction, empathy, and intimacy. Such impairment is rated on a dimension ranging from

0 (*no impairment*) to 4 (*extreme impairment*) on the Level of Personality Functioning Scale (LPFS; APA, 2013). In this model, identity impairment is a potential indicator of personality pathology (APA, 2013). In the current study, we assess identity impairment using the Self-Concept and Identity Measure (SCIM, Kaufman et al., 2015). However, we are fully aware that DSM-5's use of the term 'identity disturbance' includes much more than is covered in most identity measures, such as the SCIM. 'Identity disturbance' referenced in DSM-5 Section III includes constructs like egocentrism, self-esteem, dissociation, and confused boundary issues.

1.1. *Development of the Self-Concept and Identity Measure (SCIM)*

Valid and reliable measures of identity are needed to inform our understanding of the full spectrum of adaptive and maladaptive identity functioning. However, many neo-Eriksonian identity measures do not adequately capture clinical identity disturbance or disorder (Kaufman et al., 2015). Several promising clinical identity measures exist (Berman, Montgomery, & Kurtines, 2004; Samuel & Akhtar, 2009), but they focus on other aspects of clinical identity than the SCIM. For example, The Identity Consolidation Inventory (ICI; Samuel & Akhtar, 2009) assesses the level of identity consolidation in a given individual, whereas the Identity Distress Survey (IDS; Berman et al., 2004) does not directly measure the level of identity development, but rather assesses the degree to which a person is feeling distressed over their perceived inability to resolve identity issues. Recently, Kaufman et al. (2015) developed the SCIM, a self-report questionnaire designed to measure both healthy and disturbed identity functioning in community and clinical populations.

The SCIM has three subscales: identity consolidation, identity disturbance, and lack of identity, as corroborated through exploratory and confirmatory factor analyses on two independent US samples (Kaufman et al., 2015). *The Consolidated Identity subscale* is primarily inspired by Erikson (1968), who considered identity synthesis or a consolidated identity as the desired outcome of the identity formation process. Items on this scale capture

the degree of self-continuity, feeling integrated and whole, being connected to the past, and being certain about who one is (Kaufman et al., 2015). *The Disturbed Identity subscale* captures a variety of identity-related problems. Some items are based on Erikson's (1956, 1968) notion of a normative identity crisis, whereas other items assess more permanent feelings of identity incoherence (Erikson, 1956; Kernberg, 2006; Wilkinson-Ryan & Westen, 2000). Still other items refer to self-concept differentiation, or the degree to which an individuals' behavior varies across social roles (Donahue, Robins, Roberts, & John, 1993), and to false-self, a process in which individuals take on atypical social roles, that may cause doubt about their authenticity (Harter, Bresnick, Bouchey, & Whitesell, 1997). Overall, this scale is comprised of items assessing identity confusion and feelings of uncertainty and discontinuity (Kaufman et al., 2015). Finally, a third data-driven dimension emerged from items that were based on DSM-5's description and clinical descriptions of identity disturbance in BPD patients (APA, 2013, p. 664). This third dimension, *the Lack of Identity subscale*, captures extreme identity impairment, like feelings of fragmentation, non-existence, and inner emptiness (APA, 2013; Erikson, 1956; Kernberg, 2006).

1.2. Associations with Identity Dimensions

Given the importance of connecting more traditional developmental literature with clinical identity measures, the present study investigates associations of SCIM scales with identity dimensions of exploration and commitment. Luyckx et al. (2008) have expanded and refined Marcia's work (1966) by unpacking identity exploration and commitment. Their process-oriented identity model consists of two commitment and three exploration dimensions. *Exploration in breadth* refers to the search for and weighing up of various identity alternatives and takes place before an identity commitment is made (*commitment making*; Luyckx et al., 2008). Once a commitment is made, *exploration in depth* may occur, capturing the process through which existing commitments are evaluated. Individuals assess the degree to which the

commitment matches their internal standards and aspirations (Kerpelman, Pittman, & Lamke, 1997; Meeus, Iedema, & Maassen, 2002), which lead them to feel more or less confident about the commitment (*identification with commitment*). If one is unsatisfied with one's commitment, the process may cycle back to a renewed exploration in breadth (Luyckx, Goossens, & Soenens, 2006a; Stephen, Fraser, & Marcia, 1992). As such, identity formation is regarded as a long-term dynamic process of forming and revising one's identity (Bosma & Kunnen, 2001; Luyckx et al., 2006a). However, research has shown exploration is often associated with symptoms of depression and anxiety, and, hence, is not always adaptive (Luyckx, Soenens, & Goossens, 2006b; Schwartz, Zamboanga, Weisskirch, & Rodriguez, 2009b). Consequently, Luyckx et al. (2008) have added a maladaptive exploration dimension to their model, labeled *ruminative exploration*, that captures the degree to which a person gets stuck in a vicious cycle of hesitation and doubt, dwelling over various identity alternatives (Luyckx et al., 2008).

1.3. Associations with Psychopathology

Erikson (1968) has emphasized the central role of identity formation in contributing to personal well-being. As previously discussed, the way individuals explore their identity and arrive at commitments has important implications for their psychosocial functioning (Berzonsky & Adams, 1999). A well-developed and synthesized identity is associated with positive social relationships (Zimmer-Gembeck & Petherick, 2006) and few internalizing and externalizing problems (Schwartz, 2007). In contrast, individuals who end up confused and intimidated by the large number of identity alternatives, are likely to experience more internalizing and externalizing problems (Schwartz, Mason, Pantin, & Szapocznik, 2008). In this study, we concentrate on symptoms of anxiety, depression, and BPD as correlates of identity functioning.

In their original publication, Kaufman et al. (2015) examined associations of SCIM scales with depression, BPD, emotion dysregulation, and other psychopathology. Results showed that the Consolidated Identity subscale was negatively related to depression and BPD,

whereas Disturbed Identity and Lack of Identity were positively associated with depression and BPD (Kaufman et al., 2015).

1.4. The Present Study

The present study was guided by three research objectives.

1.4.1. Objective 1: Establish the Factor Structure and Reliability of the Dutch SCIM

We examined the factor structure of a Dutch version of the SCIM through Confirmatory Factor Analysis (CFA). In accordance with Kaufman et al. (2015), we expected a three-factor solution, that is, Consolidated Identity, Disturbed Identity, and Lack of Identity. Second, we examined the reliability of SCIM scales by evaluating their internal consistency coefficients. We expected good internal consistencies (above .70) for all SCIM scales (Kaufman et al., 2015).

1.4.2. Objective 2: Associations with Identity Dimensions

We assessed associations of SCIM scales with identity dimensions of exploration and commitment (Luyckx et al., 2008). We expected Consolidated Identity to be positively associated with both pro-active exploration and commitment dimensions, and negatively associated with ruminative exploration. We hypothesized Disturbed Identity and Lack of Identity to be negatively associated with both pro-active exploration and commitment dimensions, and positively associated with ruminative exploration, with more pronounced associations for Lack of Identity.

1.4.3. Objective 3: Associations with Psychopathology

We sought to replicate and extend findings regarding SCIM scores and self-reported psychopathology from the original validation study in a Dutch sample. We investigated associations between SCIM scales and symptoms of anxiety, depression, and BPD. We

expected Consolidated Identity to be negatively associated with symptoms of anxiety, depression, and BPD. We hypothesized Disturbed Identity and Lack of Identity to be positively associated with symptoms of anxiety, depression, and BPD, and expected stronger associations of psychopathology with Lack of Identity.

2. Method

2.1. Participants

Three samples were collected in Flanders, the Dutch-speaking region of Belgium, between 2015 and 2017. The first convenience sample consisted of 444 emerging and young adults (73.2% female; 99.55% Belgian). Mean age was 24.78 years ($SD = 5.16$; range = 18-42 years). A total of 41.7% of the participants reported being single, 24.8% reported being married or living with their partner, and 28.8% reported having a romantic partner without living together. The majority of participants (63.3%) had completed post-secondary higher education (attended college or university). A total of 33.1% reported working full time, 6.3% were working part time, and 3.8% were unemployed. The majority of remaining participants (52.9%) indicated attending full- or part-time education.

Our second convenience sample included 401 emerging and young adults (69.1% female; 96.51% Belgian). Mean age was 24.80 years old ($SD = 5.10$; range = 18-40 years). A total of 31.7% reported being single, 35.7% reported having a partner without living together, 19.7% reported living with their partner, 11.2% reported being married or remarried, and 0.7% was divorced. About half of the participants (53.1%) reported attending education. A total of 43.6% of the participants reported working, with 30.4% working full time, and 8.5% working part time. About half of the participants (48.3%) had completed post-secondary higher education.

The third, stratified sample consisted of 242 individuals (49.2% female; 100% Belgian), with a mean age of 42.76 years ($SD = 14.42$; range = 18-67 years). A total of 78.9% reported

being in a relationship. The majority of participants (81.4%) reported working full- or part-time, and 14% were students. A total of 1.7% had no diploma, 7% had completed primary education, 38.8% had completed secondary education, and 46.3% had completed post-secondary higher education.

2.2. Procedure

Data for Samples 1 and 2 were collected using an online questionnaire platform (LimeSurvey). In order to reach as many individuals as possible between 18 and 40 years old, an online web link was distributed among a broad and diverse group of individuals (through personal connections, social media, contacting business companies…). The web link led participants to (1) an information page where the study was explained; (2) an informed consent page; and (3) the questionnaires (available only when informed consent was given).

Sample 3 participants were contacted by master psychology students through personal connections. Each respondent received a closed envelope, specified by required socio-demographic variables (gender, age, and educational level) in order to match our sample to the Flemish population on gender, age, and educational level. Thus, we tried to obtain a population-representative sample in accordance with the Belgian Institute for Statistics (Statistics Belgium, 2016). Participants were informed about the purpose of the study and signed an informed consent form before participation.

In all three studies, participation was voluntary and anonymity was guaranteed. All studies were approved by the Ethical Committee (SMEC) of the Faculty of Psychology and Educational Sciences.

2.3. Measures

2.3.1. Self-Concept and Identity Measure

Participants in all samples completed the SCIM (Kaufman et al., 2015). The English version was translated into Dutch using the translation/back-translation procedure. Three Dutch-speaking researchers translated the questionnaire into Dutch. Differences in translations were discussed and disagreements were resolved though consensus. Next, one independent person translated the items back into English, and another independent person matched the original and the back-translated items. Correct matching was achieved for all items. This 27-item questionnaire consists of three subscales assessing consolidated identity, disturbed identity, and lack of identity. Items are rated on a 7-point Likert type scale ranging from 1 (*completely disagree*) to 7 (*completely agree*; see Table 1). Participants can also choose an 'I don't know'-option. The SCIM appears to produce reliable and structurally valid test scores (Kaufman et al., 2015).

2.3.2. *Identity Dimensions*

Participants in all samples completed the Dimensions of Identity Development Scale (DIDS; Luyckx et al., 2008). This 25-item self-report questionnaire is originally developed in Dutch and consists of five subscales (each containing five items): exploration in breadth (e.g., "I think actively about different directions I might take in my life"), commitment making (e.g., "I have made a choice on what I am going to do with my life"), ruminative exploration (e.g., "It is hard for me to stop thinking about the direction I want to follow in my life"), exploration in depth (e.g., "I talk with other people about my plans for the future"), and identification with commitment (e.g., "My plans for the future match with my true interests and values"). All items are rated on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The DIDS has proven to be a valid assessment of identity dimensions in community samples (Luyckx et al., 2008). Cronbach's alphas were respectively .84, .93, .88, .79, and .87 in Sample 1, .81, .94, .89, .75, and .89 in Sample 2, and .84, .95, .89, .82, and .90 in Sample 3.

2.3.3. Depression and Anxiety

Participants in Samples 1 and 2 completed the depression and anxiety subscales of the Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1977). The SCL-90-R is a multidimensional self-report inventory developed to assess a broad range of physical and mental problems. Items are rated on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*extremely*), indicating how often the participant has experienced these symptoms in the past week. The depression scale and the anxiety scale include 16 (e.g., "feeling everything is an effort") and 10 items, respectively (e.g., "suddenly scared for no reason"), and have sufficient psychometric validity (Bech, Bille, Møller, Hellström, & Østergaard, 2014). Cronbach's alphas for depression and for anxiety were .94 and .92 in Sample 1, and .93 and .91 in Sample 2.

2.3.4. BPD Symptoms

In Sample 3, symptoms of BPD were measured with the 10-item borderline subscale of the Assessment of DSM-IV Personality disorder (ADP-IV; Schotte, De Doncker, Vankerckhoven, Vertommen, & Cosyns, 1998). An example item is: "I absolutely cannot bear the idea that someone would leave or abandon me: therefore, I will do anything to prevent this". Participants assess the typicality of the trait represented by each item on a 7-point scale ranging from 1 (*totally disagree*) to 7 (*totally agree*). Participants also rate to what degree the specific trait causes distress or problems on a 3-point scale (1 = *totally not*, 2 = *somewhat*, 3 = *most certainly*). Scores on this scale have good validity and internal consistency (Schotte et al., 1998; Hengartner, Ajdacic-Gross, Rodgers, Müller, & Rössler, 2014). Cronbach's alpha was .80 in Sample 3.

2.4. Data Analyses

CFA using restricted maximum likelihood estimation was performed in Mplus 8 (Muthén & Muthén, 2017). Three criteria were used to evaluate CFA model fit: (1) the Comparative Fit Index (CFI) with values above .95 indicating good fit and values .90 -.95 indicating acceptable fit (Hu & Bentler, 1999); (2) a non-significant Chi-square test (although nonsignificance is rarely achieved in comparable sample sizes); and (3) the root mean square error of approximation (RMSEA), for which values below .08 refer to acceptable model fit and values below .06 refer to good fit (Hu & Bentler, 1999). In addition, a Multi-Group CFA using restricted maximum likelihood estimation was conducted, in which we tested for configural, metric, and scalar invariance and investigated whether the measurement model obtained would be invariant for all three samples. Configural invariance examines whether the number of factors and the general pattern of factor loadings is equivalent in the different samples. Metric invariance examines whether factor loadings for the respective items are equivalent in the different samples. Finally, scalar invariance explores whether model fit is affected by constraining intercepts of latent factor indicators (i.e., items) as equivalent across samples. To test for metric and scalar invariance, we relied on three commonly used fit indices: (1) the delta (Δ) Satorra-Bentler scaled Chi-square ($\Delta S\text{-}B\chi^2$), which uses a correction factor to account for non-normality and should be as small as possible, (2) the ΔCFI, for which values below .010 refer to measurement invariance, and (3) the ΔRMSEA, for which values below .015 refer to measurement invariance (Chen, 2007).

Next, Cronbach's alphas were computed to measure the reliability of SCIM scales in the present samples. Correlations between SCIM scales were analyzed using Pearson correlation coefficients. Finally, bivariate correlational analyses and linear regression analyses were conducted to investigate associations of SCIM scales with identity dimensions and symptoms of anxiety, depression, and BPD. More specifically, multiple linear regression analyses were performed to investigate the extent to which SCIM scales were able to

significantly explain variance in identity dimensions and psychopathological outcomes. For each sample, we conducted five linear regression analyses with the identity dimensions as dependent variables. Additionally, for Samples 1 and 2, we conducted two linear regression analyses with depression and anxiety as dependent variables, and for Sample 3, a single linear regression analysis was performed with BPD as dependent variable. In each regression analysis, SCIM scales functioned as independent variables and we always controlled for age and gender. For all analyses, the Variance Inflation Factor (VIF) and Tolerance indices of the degree of multicollinearity were within acceptable range (VIF < 5; T > .20), indicative of sufficient independence between the different predictor variables (O'Brien, 2007).

3. Results

3.1. Objective 1: Factor Structure, Reliability, and Correlations of SCIM Scales

3.1.1. Factor Structure

CFA was first performed on Sample 1 and indicated that the hypothesized three-factor model had an inadequate fit to the data as indicated by low values on the CFI ($df = 321$; $\chi^2 = 805.55$; $p < .0001$; RMSEA = .06, CFI = .86). Subsequently, we excluded items 11 and 16 because of low factor loadings. This resulted in a somewhat better, but still inadequate fit ($df = 272$; $\chi^2 = 690.09$; $p < .0001$; RMSEA = .06, CFI = .87). We decided to include three error correlations between related items within a single latent factor (between items 3 and 14; 13 and 20; and 23 and 26) that were suggested by the modification indices. Ultimately, the hypothesized three-factor model had an adequate fit to the data in Sample 1 ($df = 269$; $\chi^2 = 541.28$; $p < .0001$; RMSEA = .05; CFI = .92). Next, we conducted CFA on Sample 2 and found inadequate fit to the data as indicated by low values on the CFI ($df = 321$; $\chi^2 = 881.85$; $p < .0001$; RMSEA = .07, CFI = .85). Again, by excluding items 11 and 16 because of low factor loadings ($df = 272$; $\chi^2 = 776.25$; $p < .0001$; RMSEA = .07, CFI = .86) and by allowing the same three error correlations,

the hypothesized three-factor model had an adequate fit to our data in Sample 2 (df = 269; χ^2 = 626.11; p < .0001; RMSEA = .06; CFI = .90). Finally, we performed CFA on Sample 3. Yet again, CFA indicated that the three-factor model had an inadequate fit to the data as indicated by low values on the CFI (df = 321; χ^2 = 602.63; p < .0001; RMSEA = .06, CFI = .82). As in Samples 1 and 2, items 11 and 16 had low factor loadings and were thus excluded. Also items 3 and 14 had low factor loadings, but were not excluded because they only occurred in Sample 3. This resulted in a better, but still inadequate fit (df = 272; χ^2 = 526.43; p < .0001; RMSEA = .06, CFI = .83). Also in this sample modification indices suggested the same three error correlations. Ultimately, the three-factor model had an adequate fit to the data in Sample 3 (df = 269; χ^2 = 411.96; p < .0001; RMSEA = .05; CFI = .90). All SCIM-items and their factor-loadings are shown in Table 1.

Multi-Group CFA (combining all three samples) indicated that configural invariance was established as the measurement model yielded an acceptable fit (df = 807; χ^2 = 1517.07; p < .0001; RMSEA = .05; CFI = .91). Also metric invariance was obtained for the three samples (ΔS-Bχ^2 = 50.293, p = .24; ΔCFI = 0; ΔRMSEA = .001). Next, to test scalar invariance, the baseline model was the metric invariant model in which intercepts were freely estimated. This model was compared to a model in which intercepts were constrained to be equal for all samples (i.e., the scalar invariant model). Scalar invariance could not be established (ΔS-Bχ^2 = 133.15, p < .0001; ΔCFI = .01; ΔRMSEA = .001). In sum, both configural and metric invariance, but not scalar invariance were established. Thus, the number of factors, the general pattern of factor loadings, and the factor loadings for the respective items were equivalent across the three samples, indicating that associations could be compared across samples.

An important observation is that many respondents in each sample selected the 'I don't know' -option for items 3 and 14 (respectively, 75 and 49 missing values in Sample 1; 47 and 26 missing values in Sample 2; and 38 and 32 missing values in Sample 3). These items read:

'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'.

Table 1.

Factor Loadings Based on CFA of the Dutch SCIM in Samples 1, 2, and 3

Item	Sample 1	Sample 2	Sample 3
Consolidated Identity items			
1. I know what I believe or value	.490	.575	.537
17. I always have a good sense about what is important to me	.457	.639	.520
2. When someone describes me, I know if they are right or wrong	.504	.478	.493
5. I know who I am	.724	.689	.771
3. When I look at my childhood pictures I feel like there is a thread connecting my past to now	.377	.279	.089
14. When I remember my childhood I feel connected to my younger self	.381	.301	.152
9. I am good	.502	.452	.495
19. I am basically the same person that I've always been	.398	.457	.391
Disturbed Identity items			
10. I imitate other people instead of being myself	.768	.783	.701
26. I am only complete when I am with other people	.394	.435	.382
27. The things that are most important to me change pretty often	.526	.667	.566
25. I try to act the same as the people I'm with (interests, music, dress) and I change that all the time	.686	.708	.657
4. Sometimes I pick another person and try to be just like them, even when I'm alone	.659	.676	.605
12. I am so different with different people that I'm not sure which is the "real me"	.775	.805	.716
23. I am more capable when I am with others than when I am by myself	.350	.382	.339
6. I change a lot depending on the situation	.559	.642	.633
21. My opinions can shift quickly from one extreme to another	.596	.632	.658
7. I have never really known what I believe or value	.572	.650	.558
18. I am so similar to certain people that sometimes I feel like we are the same person	.392	.271	.273
Lack of Identity items			
13. I am broken	.690	.730	.630
20. I feel empty inside, like a person without a soul	.798	.845	.719
15. I feel lost when I think about who I am	.830	.859	.770
22. I no longer know who I am	.886	.884	.791
8. I feel like a puzzle and the piece don't fit together	.765	.821	.732
24. No one knows who I really am	.702	.723	.675

Note. For CFA, all factor loadings are significant at $p < .001$.

3.1.2. Reliability and Correlations

Cronbach's alphas for Consolidated Identity, Disturbed Identity, and Lack of Identity were respectively .70, .84, and .90 in Sample 1, .71, .85, and .92 in Sample 2, and .65, .81, and .87 in Sample 3. Consequently, all SCIM scales showed adequate to good internal consistency, although the alpha was somewhat lower for Consolidated Identity in Sample 3.

Correlational analyses in all three samples (displayed in Table 2) showed that Consolidated Identity was negatively related to Disturbed Identity and Lack of Identity. Disturbed Identity and Lack of Identity were strongly positive related in all three samples.

3.2. Objective 2: Associations with Identity Dimensions

Table 2 presents correlations between SCIM scales and the five identity dimensions for all samples. In all samples, Consolidated Identity showed significant positive associations with exploration in depth and both commitment dimensions, and was negatively associated with ruminative exploration. In Samples 1 and 2, Consolidated Identity was also positively associated with exploration in breadth. In all three samples, Disturbed Identity was negatively associated with both commitment dimensions, and was positively related to ruminative exploration. Only in Sample 1, Disturbed Identity showed a negative association with exploration in depth. Disturbed Identity showed no significant associations with exploration in breadth. Finally, in all samples, Lack of Identity demonstrated negative associations with exploration in depth and both commitment dimensions, and showed a positive association with ruminative exploration. In Sample 1, Lack of Identity also showed a negative association with exploration in breadth.

Table 2.

Correlations Between the SCIM Scales and the Five Identity Dimensions in Samples 1, 2, and 3

	2	3	4	5	6	7	8
1. Consolidated Identity	-.42*** -.48*** -.44***	-.54*** -.52*** -.54***	.10* .13** .10	.38*** .37*** .37***	.16** .19*** .14*	.49*** 49*** .41***	-.37*** -.33*** -.39***
2. Disturbed Identity		.59*** .59*** .54***	-.07 -.05 .11	-.26*** -.27*** -.26***	-.10* -.07 .10	-.36*** -.35*** -.31***	.43*** .44*** .44***
3. Lack of Identity			-.17*** .02 -.07	-.44*** -.40*** -.50***	-.26*** -.11* -.13*	-.54*** -.51*** -.54***	.55*** .58*** .56***
4. Exploration in breadth				.22*** .11* .33***	.56*** .51*** .57***	.24*** .16** .30***	.01 .19*** .11
5. Commitment making					.36*** .29*** .34***	.63*** .72*** .73***	-.55*** -.57*** -.55***
6. Exploration in depth						.35*** .34*** .41***	-.06 .06 .05
7. Identification with commitment							-.57** -.56*** -.54***
8. Ruminative exploration							

Note. N Sample 1 = 444; N Sample 2 = 401; N Sample 3 = 242

*p < 0.05; **p < .01; ***p < 0.001.

Table 3 presents the linear regression coefficients. In all samples, Consolidated Identity was significantly positive related to identification with commitment. In Sample 2, Consolidated Identity was also positively related to both pro-active exploration dimensions and commitment making, and in Sample 3, Consolidated Identity was also positively associated with exploration in depth. In all three samples, Disturbed Identity showed a positive association with ruminative exploration. In Sample 3, Disturbed Identity was also positively related to exploration in depth. Disturbed Identity had no significant associations with exploration in breadth and both commitment dimensions. Finally, in all three samples, Lack of Identity was negatively related to both commitment dimensions, and was positively associated with ruminative exploration. In Sample 1, Lack of Identity was also negatively related to both pro-active exploration dimensions, and in Sample 2, Lack of Identity was positively associated with exploration in breadth.

3.3. Objective 3: Associations with Psychopathology

Correlations between SCIM scales, depression, anxiety, and BPD are presented in Table 4. Consolidated Identity was significantly negative related to depression and anxiety in Samples 1 and 2, and to BPD in Sample 3, whereas Disturbed Identity and Lack of Identity were strongly positive associated with depression and anxiety in Samples 1 and 2, and with BPD in Sample 3. The high correlations of Lack of Identity with both depression and BPD could possibly be caused by overlap in the underlying construct that they intend to measure. For example, item 13 of the depression subscale of the SCL-90-R ('a feeling of emptiness') and item 87 of the borderline subscale of the ADP-IV ('It happens to me very often that I feel really empty') have similar contents as SCIM-item 20 ('I feel empty inside, like a person without a soul'). Item 29 of the borderline subscale of the ADP-IV ('I am always very uncertain about who or what I am and about what is important in life; as a results, my self-image and perceptions about others,

the world, and the future change constantly') closely resembles item 22 of the SCIM ('I no longer know who I am'). However, removing these SCL-90-R- and ADP-IV-items did not significantly change the correlations (see Table 3).

Table 5 presents the linear regression coefficients. In Sample 2, Consolidated Identity was positively related to symptoms of anxiety. In Samples 1 and 2, Lack of Identity was positively related to symptoms of depression and anxiety. In Sample 3, Consolidated Identity showed a significant negative association with symptoms of BPD, whereas Disturbed Identity and Lack of Identity were both positively associated with BPD symptoms.

Table 3.

Standardized Betas for the Regression Analyses of the Five Identity Dimensions on the Three SCIM Scales in Samples 1, 2 and 3

	EB	CM	ED	IC	RE
Age	-.08/-.14**/-.14	-.03/.02/.06	-.00/-.10*/-.24***	-.04/-.05/.03	.01/-.04/-.09
Sex	.08/-.06/.04	-.04/-.06/-.04	.12*/.10/-.03	-.05/-.05/-.08	.01/-.03/.07
Consolidated Identity	.04/.21**/.10	.22***/.21***/.13	.06/.20**/.17*	.28***/.30***/.16*	-.08/-.00/-.10
Disturbed Identity	.02/-.07/.13	.03/.01/-.02	.08/.04/.18*	-.03/-.01/.01	.13**/.12*/.17*
Lack of Identity	-.16*/.17**/-.11	-.34***/-.29***/-.39***	-.25***/-.02/-.15	-.39***/-.34***/-.43***	.42***/.52***/.36***
R²	.04/.05/.04	.22/.19/.25	.08/.05/.11	.36/.32/.30	.32/.36/.34

Note. EB, exploration in breadth; CM, commitment making; ED, exploration in depth; IC, identification with commitment; RE, ruminative exploration.

N Sample 1 = 444; *N* Sample 2 = 401; *N* Sample 3 = 242.

p < 0.05; **p* < .01; ***p* < 0.001.

Table 4.

Correlations Between the SCIM Scales and Symptoms of Depression and Anxiety in Samples 1 and 2, and BPD Symptoms in Sample 3

		Samples 1, 2, and 3		Samples 1 and 2		Sample 3
		2	3	4	5	6
1.	Consolidated Identity	-.42***/-.48***/-.44***	-.54***/-.52***/-.54***	-.35***/-.41***	-.25***/-.21***	-.48***
				-.35*/-.41***		**-.46***
2.	Disturbed Identity		.59***/.59***/.54***	.41***/.41***	.41***/.32***	.58***
				.41*/.41***		**.55***
3.	Lack of Identity			.72***/.77***	.59***/.53***	.70***
				.71*/77***		**.63***
4.	Depression				.77***/.69***	-
5.	Anxiety				-	-
6.	BPD				-	-

Note. Because of possible overlap in underlying construct, correlational analyses without item 13 of the depression subscale (SCL-90-R) and without items 29 and 87 of the borderline subscale (ADP-IV) are given in bold.

N Sample 1 = 444; *N* Sample 2 = 401; *N* Sample 3 = 242.

*p < 0.05; **p < .01; ***p < 0.001.

Table 5.

Standardized Betas for the Regression Analyses of Symptoms of Depression, Anxiety, and BPD on the Three SCIM scales in Samples 1, 2 and 3

	Samples 1 and 2		Sample 3
	Depression	Anxiety	BPD
Age	.05/.02	.05/-.07	-.10*
Sex	.10*/.08*	.10**/.13**	.11*
Consolidated Identity	.03/-.01	.09/.11*	-.11*
Disturbed Identity	-.01/-.06	.08/.05	.22***
Lack of Identity	.75***/.80***	.60***/.56***	.49***
R²	.52/.61	.36/.31	.55

Note. N Sample 1 = 444; N Sample 2 = 401; N Sample 3 = 242.

*p < 0.05; **p < .01; ***p < 0.001.

4. Discussion

The present study examined the factor structure and reliability of a Dutch version of the Self-Concept and Identity Measure (SCIM; Kaufman et al., 2015) in three Flemish community samples. Furthermore, associations between Dutch SCIM scales and (1) identity dimensions of exploration and commitment, and (2) symptoms of depression, anxiety, and Borderline Personality Disorder (BPD) were investigated.

Confirmatory Factor Analysis (CFA) results support replication of the SCIM's three-factor structure obtained in the original validation study (Kaufman et al., 2015). Furthermore, SCIM scales showed adequate internal consistency coefficients for all three samples. Hence, in line with expectations, the SCIM proved to be a structurally valid and reliable questionnaire to assess identity consolidation, identity disturbance, and lack of identity. Findings emphasize the need of focusing on both normative outcomes of the identity crisis such as identity synthesis and confusion, first proposed by Erikson (1968), as well as on more severe forms of identity disturbance, as captured by SCIM's lack of identity scale (Kaufman et al., 2015).

CFA results also uncovered a number of SCIM items that appear to perform poorly in Dutch-speaking samples, especially within the Consolidated Identity subscale. First, items 11 and 16 showed very low factor loadings on Consolidated Identity. In addition, items 3 and 14 of the Consolidated Identity subscale were frequently answered 'I don't know'. It may be that these items are too difficult, require unrealistic memory capacities, or are difficult to translate in a meaningful way. As these items performed poorly in three independently collected samples, they may need to be revised or removed in order to optimize the Consolidated Identity subscale.

Across samples, Consolidated Identity was positively related to identification with commitment, being considered the hallmark of identity synthesis or achievement (Luyckx et al., 2011). Thus, although certain Consolidated Identity items performed poorly, the scale as a whole appears to conceptually valid. In two out of three samples, Consolidated Identity also

showed positive associations with commitment making and exploration in depth. Only in Sample 2, Consolidated Identity showed a positive association with exploration in breadth. In general, the results concerning Consolidated Identity were in line with our expectations, although only the association with identification with commitment emerged consistently.

In all three samples, Disturbed Identity was positively related to ruminative exploration. Individuals scoring high on Disturbed Identity experience no or few feelings of self-continuity, characteristic of individuals scoring high on Consolidated Identity (Kaufman et al., 2015). They describe an abiding sense of incoherence and discontinuity, which may play into continued identity exploration without arriving at satisfying commitments, called ruminative exploration (Luyckx et al., 2008). In Sample 3, Disturbed Identity was also positively associated with exploration in depth. Although this was unexpected, recent studies have indicated that exploration in depth might be subdivided into two types (Zimmerman, Lannegrand-Williams, Safont-Mottay, & Cannard, 2015). The first type of exploration in depth, *reflective exploration in depth*, refers to the careful evaluation of existing commitments, whereas the second type, *reconsideration of commitments*, refers to a reconsideration of existing commitments (especially when commitments are unsatisfactory) that causes individuals to discard their current commitments (Crocetti, Rubini, Luyckx, & Meeus, 2008; Meeus, van de Schoot, Keijsers, Schwartz, & Branje, 2010). In other words, exploration in depth can also include a ruminative component and may possibly explain why we found a positive association with Disturbed Identity.

In line with expectations, Lack of Identity was negatively related to both commitment dimensions, and positively related to ruminative exploration across study samples. The sense of inner emptiness, often reported by individuals scoring high on Lack of Identity, may possibly impede commitment to certain life choices (Schwartz, Côté, & Arnett, 2005). Similarly, high levels of ruminative exploration may stem from serious concerns with lacking a sense of self

(Luyckx et al., 2011). In two out of three samples, Lack of Identity demonstrated a significant association with exploration in breadth, but mixed results were found. In Sample 1, Lack of Identity was, as expected, negatively related to exploration in breadth. However, in Sample 2, Lack of Identity was positively associated with exploration in breadth. This positive association may be partially explained by the fact that in Sample 2, exploration in breadth was positively related to ruminative exploration as well, whereas this was not the case in the other two samples. Only in Sample 1, Lack of Identity showed a negative association with exploration in depth. In sum, no consistent associations between Lack of Identity and pro-active identity exploration (in contrast to ruminative exploration) seemed to emerge.

Overall, commitment dimensions appear to be indicative of Consolidated Identity, whereas lack of commitment dimensions appears to be indicative of Lack of Identity. Ruminative exploration can be a manifestation of a more normative difficulty with identity formation, but can also point to a clinical identity problem, and therefore appears to be indicative of both Disturbed Identity and Lack of Identity.

Consolidated Identity was positively associated with anxiety in Sample 2 (contrary to our expectations), and negatively associated with BPD symptoms. Disturbed Identity showed no significant associations with symptoms of depression and anxiety, and was positively related to BPD. Lack of Identity was positively associated with symptoms of depression, anxiety, and BPD. Lack of Identity was especially related to symptoms of depression and anxiety. These results differ from the correlational analyses, that show that Consolidated and Disturbed Identity were significantly (respectively negative and positive) correlated with symptoms of depression and anxiety. So although all SCIM scales were significantly correlated with the different forms of psychopathology and demonstrated significant associations with BPD, especially Lack of Identity seemed to have unique associations with symptoms of depression and anxiety. The Lack of Identity scale measures clinical-pathological identity functioning and

is, in line with our expectations, positively associated with the different psychopathological outcomes included in this study. Disturbed Identity is also significantly associated with BPD symptoms, which is not surprising, given that identity disturbance is a criterion for this diagnosis. Additionally, it should be noted that it concerns subclinical BPD, since we studied a community sample. Further research in a clinical sample is required to acquire a better insight into associations.

Based on the results of our study, we can conclude that especially Lack of Identity (and to some extent Disturbed Identity) is positively related to lower levels of adaptive identity dimensions, higher levels of ruminative exploration, and symptoms of depression, anxiety and BPD. The present findings thus provide evidence for the existence of three meaningful subscales and, hence, encourage researchers to broaden their focus to clinical identity functioning in community samples, rather than solely focusing on normative identity dimensions of commitment and exploration.

Some limitations of the present study warrant discussion. First, woman and emerging and young adults (18 to 40 years) were overrepresented in Samples 1 and 2. Consequently, associated results may not fully represent the Flemish population, which limits the generalizability of our results. Future studies should include an equal ratio of male and female participants and should pursue a more even age distribution. Second, the study was based on self-report questionnaires. Although self-reports are optimal to assess identity-related variables, they may yield reporting bias and inflated correlations between the studied variables due to shared method variance. In future research, we should also include alternative assessment methods to corroborate the obtained findings. Third, our study made use of a cross-sectional design. This prevents us from drawing conclusions about the directionality of effects. Longitudinal research with multiple measurements could offer more insight. Fourth, in future research it would be of interest to also study the relation between different clinical identity

measures and the way they relate to personality pathology, as clinical identity measures often serve different purposes in the literature. For example, it would be interesting to examine how the degree of identity development, as assessed by means of the ICI (Samuel & Akhtar, 2009), and the degree to which a person is distressed over their inability to resolve their identity issues, as measured by means of the IDS (Berman et al., 2004), co-develop. Finally, future research should concentrate more on the study of clinical identity disturbance, that goes far beyond the area of personality disorders, as clinical identity disturbance may constitute a trans-diagnostic marker of psychopathology (Kaufman et al., 2015).

Despite these limitations, the present study confirmed the three-factor structure and reliability of the SCIM in three Flemish community samples and provided important information about associations of the SCIM scales with both identity dimensions and different forms of psychopathology.

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