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Personality Disorder Symptomatology in Belgian Emerging Adults: Associations with Identity Processes and Statuses

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Abstract

Individual differences in identity development are commonly captured by identity statuses, representing combinations of high and/or low scores on identity exploration and commitment processes. Although identity impairment is considered a potential diagnostic criterion of all personality disorders (PDs) in Section III of DSM-5, studies that relate identity processes or statuses to PDs are limited. The current study examined associations between identity processes and statuses, and dimensionally measured PDs among 343 Belgian emerging adults (71.4% female; M_{age} = 22.73, SD = 2.85, age range = 18-30). Stepwise cluster analysis on the identity processes revealed six identity statuses: achievement, foreclosure, searching moratorium, troubled diffusion, carefree diffusion, and an undifferentiated status. Generally, commitment making and identification with commitment were negatively associated with PDs, whereas ruminative exploration was positively related to PDs. Individuals in troubled and carefree diffusion statuses reported the highest mean scores on PD symptomatology, whereas individuals in achievement and foreclosure statuses reported the lowest mean PD scores. The present findings suggest that individuals who appear unable to settle on identifying-defining commitments are prone to the highest levels of PD symptomatology.

Keywords: identity; identity processes; identity status; cluster analysis; personality disorders

Introduction

Identity development is a lifelong dynamic process with significant developmental changes occurring in late adolescence and emerging adulthood (Arnett, 2000, 2006; Erikson, 1968). While transitioning into adulthood, young individuals are expected to rethink their childhood identifications and establish a mature identity configuration, which includes a clear set of personal goals, plans, and beliefs (Erikson, 1968). In Marcia's view (1980), a process of *exploring* identity options and then *committing* to one or more of these options is the most adaptive and effective way to arrive at such a mature identity. Based on combinations of high and/or low levels of identity exploration and commitment, Marcia (1980) derived four identity statuses or ways of navigating identity development.

Achieved individuals have formed commitments based on a careful consideration of their abilities, interests, and values, providing them with a sense of self-continuity and meaning to life (Erikson, 1968; Marcia, 1980). *Foreclosed* individuals have made commitments without prior exploration as they merely assume others' values and orientations (Kroger, 2015). *Moratorium* and *diffused* individuals lack commitments as they struggle with contradictory feelings about their aspirations, roles, and beliefs (Erikson, 1968). However, moratorium individuals generally experience temporary feelings of confusion as they actively attempt to find meaningful directions. Diffused individuals engage in little systematic exploration and may suffer from prolonged confusion, posing a risk for personality pathology (Marcia, 2006).

Similarly, the Alternative Model of Personality Disorder (AMPD), introduced in Section III of the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association [APA], 2013), suggests that impairment in identity and self-direction may be a diagnostic criterion of all personality disorders (PDs). This rationale is based on the assumption that identity functioning plays a prominent role in both typical development (Erikson, 1950) and personality pathology (Kernberg, 2006; Marcia, 2006).

Inspired by this novel approach to personality pathology, the present study examined associations between identity processes and statuses, and PD symptomatology among Belgian emerging adults.

Although Marcia's (1980) paradigm has been highly influential, more recent process-oriented models have extended this paradigm to allow for a more fine-grained analysis of identity formation (Schwartz, 2001). In one such model, Luyckx et al. (2008) forwarded three exploration processes and two commitment processes. In line with Marcia, Luyckx et al. assume that identity formation starts with *exploration in breadth*, or actively exploring identity alternatives. Next, individuals may commit to one or more of these options (i.e., *commitment making*). Once a commitment has been made, individuals may re-evaluate it by assessing the degree to which it resembles their internal standards or goals (i.e., *exploration in depth*). As a consequence, individuals may identify with their commitment (i.e., *identification with commitment*). When unsatisfied with one's commitment, the process may cycle back to exploration in breadth, framing identity formation as a dynamic process. As research indicated that identity exploration may be positively related to internalizing symptoms (Luyckx, Goossens, Soenens, & Beyers, 2006), Luyckx et al. (2008) added *ruminative exploration* to their model, a process capturing ongoing worry, indecisiveness, and distress about identity alternatives.

Through cluster analysis on these processes, Luyckx et al. (2008) identified six identity statuses, as corroborated in large community studies (Schwartz et al., 2011; Verschueren, Rassart, Claes, Moons, & Luyckx, 2017). Like Marcia (1980), Luyckx et al. found *achievement* and *foreclosure* statuses, marked by high scores on commitment processes and low scores on ruminative exploration. Individuals in achievement differ from those in foreclosure based on their higher scores on proactive exploration processes. Also consistent with Marcia, Luyckx et al. identified a *moratorium* status, scoring high on all exploration processes, but low to

moderate on commitment processes. Unlike Marcia, Luyckx et al. extracted a *troubled diffusion* and *carefree diffusion* status, both exhibiting low scores on all proactive processes. In addition, individuals in troubled diffusion score high on ruminative exploration, whereas those in carefree diffusion appear to be unconcerned by their lack of proactive identity work. Finally, Luyckx et al. uncovered an *undifferentiated* status, scoring moderate on all processes.

Identity Processes, Statuses, and Psychopathology: A Focus on Personality Pathology

Generally, research suggests that commitment making and identification with commitment are negatively associated with psychopathology, whereas ruminative exploration is positively associated with maladaptive outcomes (e.g., depressive symptoms and low self-esteem; Luyckx, Schwartz, Goossens, Beyers, & Missotten, 2011; Luyckx et al., 2008). No consistent associations seem to emerge between exploration in breadth/depth and psychosocial outcomes (Luyckx et al., 2008).

Relatedly, individuals in achievement and foreclosure present with the most adaptive functioning, as illustrated by their high scores on well-being and self-esteem, and low scores on internalizing and externalizing symptoms (Luyckx, Klimstra, Schwartz, & Duriez, 2013; Schwartz et al., 2011). Individuals in moratorium and diffusion present with the least adaptive profiles. Particularly troubled diffused individuals endure low levels of self-esteem and well-being, while often struggling with internalizing and externalizing problems (Luyckx et al., 2013; Schwartz et al., 2011). They score highest on psychiatric diagnoses such as eating disorders and borderline personality disorder (BPD; Verschueren, Luyckx, et al., 2017).

As the AMPD in DSM-5 elevates identity impairment to a core feature of *all* PDs, the present study examined associations between identity processes and statuses, and symptomatology of all PDs. Although empirical research testing these associations is limited, Marcia (2006) theorized that one's level of identity exploration and commitment during adolescence may have important implications for one's personality development. Specifically,

Marcia (2006) suggested that one's way of exploring and enacting identity commitments may be reflected in the maladaptive feelings, cognitions, and behaviors anchored in all PDs. Individuals with paranoid, schizoid, and schizotypal PDs are characterized by a reduced capacity for close relationships. Marcia (2006) argued that these individuals were generally too fearful to explore their identity and were deprived from social experiences crucial for identity development, which resulted in few and restricted identity commitments.

Individuals with BPD and histrionic PD are characterized by transitory and/or strong emotions and are extremely susceptible to change. These individuals were often too overwhelmed by their emotions, disabling them to thoughtfully explore identity alternatives and establish or maintain identity-defining commitments (Marcia, 2006). Furthermore, individuals with narcissistic PD often struggle with an unstable identity as they lack lasting commitments. Although these individuals might have been able to explore and enact identity commitments, these commitments were often more driven by social approval than by introspection of their own needs, goals, and abilities (Marcia, 2006). Individuals with antisocial PD are generally too impulse-dominated and too strongly focused on immediate gratification. In Marcia's view (2006), this focus may have withheld them to fully engage in identity work during adolescence. Although individuals with antisocial PD might have been able to explore and commit to certain identity-defining directions, these generally run counter to social norms.

Finally, Marcia (2006) claims that individuals with avoidant, dependent, and obsessive-compulsive PDs are characterized by a painful sense of self-consciousness. They look back on their childhood years with doubt, shame, and a lack of trustworthiness and envision their future with concern. They have often anxiously shied away from identity exploration long before adolescence (Marcia, 2006).

As such, Marcia (2006) stated that individuals with schizoid, schizotypal, borderline, histrionic, avoidant, and dependent PDs are most likely found in the diffusion status,

characterized by little or no exploration and commitment. Individuals with narcissistic PD might also fall within the diffusion status, unless they have taken on commitments that are fitting well within society. Obsessive-compulsive and paranoid individuals are most likely found at the less adaptive levels of foreclosure. Their propensity to rigidity and reluctance to explore stems from their underlying self-doubt and shame. To navigate these negative feelings, they have presented themselves as self-assured and react with a reluctance to acknowledge failure. Marcia (2006) did not formulate a clear hypothesis with regard to antisocial PD.

Studies that empirically test Marcia's theoretical assumptions are limited. Jørgensen (2009) indicated that patients with BPD scored significantly lower on identity commitment than community adults. Westen, Betan, and Defife (2011) illustrated that adolescents with severe personality pathology (most notably BPD) suffered from a lack of commitments. Following the AMPD, numerous studies have been published on the relation between impairment in self- and interpersonal functioning (Criterion A of the AMPD) and personality pathology (see Widiger et al., 2018); but these studies do not specifically focus on identity processes or statuses.

The Present Study

The present study examined associations of identity *processes* and *statuses* with subclinical personality pathology among Belgian emerging adults. In addition to investigating associations between individual identity processes and PD symptomatology, we chose to also examine relations between identity statuses and PD symptomatology as these statuses present combinations of identity processes, providing us with a more true depiction of clinical reality.

Based on previous research (Jørgensen, 2009; Luyckx et al., 2011; Luyckx et al., 2008; Westen et al., 2011) and Marcia's theorizing (2006), we generally expected that proactive exploration and commitment processes would be negatively associated with PDs[1], whereas

[1] For ease of reading, we sometimes use the term PD (Personality Disorder), but it concerns dimensionally measured PD symptomatology.

ruminative exploration would be positively associated with PDs. In addition, however, we tentatively expected that antisocial and narcissistic PDs would be positively related to exploration processes and commitment making, as Marcia (2006) suggested that individuals with these PDs are often able to explore identity alternatives and enact identity-defining commitments. Importantly, Marcia (2006) emphasized the maladaptive nature or content of these commitments in individuals with an antisocial and/or narcissistic PD. He clarifies that these commitments are usually unstable (as they are not based on a profound exploration of one's own needs and abilities), and hence temporary. Relatedly, Erikson (1968) argued that individuals who seem unable to explore and/or settle on a mature identity are at risk to choose a negative identity, that is, adopting roles and values contrasting those held dear by others. Finally, we tentatively hypothesized that paranoid and obsessive-compulsive PDs would be positively related to commitment making, as these individuals have the tendency to rigidly cling to their unexplored commitments (Marcia, 2006).

With respect to the statuses, we generally expected individuals in achievement and foreclosure to have the lowest mean PD scores, although individuals in foreclosure may have higher mean scores on paranoid and obsessive-compulsive PDs compared to other PDs (Marcia, 2006). Alternatively, we hypothesized that individuals in diffusion statuses would have the highest mean scores on PDs, with troubled diffused individuals reporting higher scores than carefree diffused individuals. Finally, we expected individuals in moratorium to score in-between, as they are attempting to find a direction, but have not yet enacted commitments. Additionally, we controlled for age and gender. For age, Meeus et al. (2010) indicated that achieved and foreclosed individuals tend to be older, whereas individuals in moratorium and diffusion tend to be younger. Overall, PDs seems to decline with age (Debast et al., 2015). For gender, studies indicated that women are commonly overrepresented in achievement and moratorium, whereas men are particularly found in foreclosure and diffusion (Schwartz et al.,

2011; Verschueren, Rassart, et al., 2017). Finally, community studies indicated that paranoid, schizoid, and schizotypal PDs are more common in men (Samuels et al., 2002; Torgersen, Kringlen, & Cramer, 2013). Furthermore, antisocial PD is more common in men, whereas BPD is more frequently diagnosed among women (Paris, 2004).

Methods

Participants and Procedure

The present study was based on two samples, totaling 343 Belgian emerging adults aged 18 to 30 years old. The first sample was collected in 2017 and included 242 Belgian community adults, among which 69 were emerging adults (18-30 years old; 44.9% female) with a mean age of 23.46 years old (*SD* = 3.29). We attempted to obtain a population-representative sample for the Belgian community in terms of gender, age, and educational level, based on the National Institute for Statistics' national register of the Belgian community (NIS; Statistics Belgium, 2016). Two master psychology students of KU Leuven searched for and selected suitable participants in their circles of family, friends, acquaintances, and their broader environment. Although significant efforts were made to sample a population-representative group, highly educated individuals were overrepresented in sample 1. After agreeing to participate, respondents received an envelope, specified by the required socio-demographic variables (gender, age, and educational level), containing (1) an informed consent document informing the participants about the purpose of the study and (2) a booklet of questionnaires. After participation, de-identified envelopes were sealed and returned to the researchers.

The second data sample was collected in 2019 using an online questionnaire platform (Qualtrics) and included 383 Belgian community adults, among which 274 were emerging adults (18-30 years old; 78.1% female) with a mean age of 22.55 years old (*SD* = 2.71). To reach as many participants as possible, a web link was distributed through social media and personal acquaintances. This web link led participants to (1) a webpage, providing information

about the purpose of the study, (2) an informed consent form, and (3) the questionnaires (available only when consent was given).

The total sample for the present study comprised 343 Belgian emerging adults of which 48.1% of the participants reported being in a relationship, whereas 51.9% were reportedly single. The majority of the participants (60.9%) reported studying, 33.5% of the participants reported working, and an additional 5.5% combined their job with an education program. A total of 51.3% of the participants had completed higher education, 41.1% completed secondary education, 2.3% completed primary education, and 0.9% had no degree. Participation in both studies was voluntary and anonymous, and both studies were approved by the Ethical Committee of the Faculty of Psychology and Educational Sciences (G-2016 08 603).

Measures

Identity Processes

Participants completed the Dimensions of Identity Development Scale (DIDS; Luyckx et al., 2008). The DIDS, originally developed in Dutch, consists of five subscales representing five identity processes: exploration in breadth, commitment making, exploration in depth, identification with commitment, and ruminative exploration. Each identity process is measured by five items rated from 1 (*strongly disagree*) to 5 (*strongly agree*). Sample items for each subscale are presented in Table 1. In the present study, Cronbach's alpha coefficients were, respectively, .76, .91, .71, .83, and .89.

Personality disorder symptomatology

PDs were dimensionally measured with the Assessment of DSM-IV Personality Disorders questionnaire (ADP-IV; Schotte et al., 1998). This Dutch self-report questionnaire consists of 94 items, representing the diagnostic criteria of DSM-IV PDs, including paranoid, schizoid, schizotypal, antisocial, borderline, histrionic, narcissistic, avoidant, dependent, and obsessive-

compulsive PDs (APA, 1994). Sample items for each subscale are presented in Table 1. For each item, participants assess the typicality of the trait on a scale from 1 (*totally disagree*) to 7 (*totally agree*). Dimensional PD scores were calculated from summing the trait-scores for each PD. In this study, Cronbach's alpha coefficients ranged from .76 (obsessive-compulsive PD) to .89 (avoidant PD).

Results

Identity Statuses

Descriptive statistics of study variables are displayed in Table 2. We performed a stepwise cluster-analytic procedure on the identity exploration and commitment processes to identify identity statuses. Prior to conducting this analysis, each identity process variable was standardized and seven univariate outliers (i.e., values more than 3 *SD* below or above the mean) were removed. No multivariate outliers (i.e., individuals with significantly higher Mahalanobis distance values than others; $p < .001$) were identified. We evaluated four-, five-, and six-cluster solutions in terms of substantive interpretability, parsimony, and explanatory power (i.e., a cluster solution needs to explain at least 50% of variance in the identity processes).

First, we conducted a hierarchical cluster analysis on all individuals who completed the DIDS ($N = 336$), using Ward's method with squared Euclidean distances (Gore, 2000; Steinley & Brusco, 2007). Second, the initial cluster centers from this hierarchical analysis were used as non-random starting points in an iterative *k*-means cluster analysis. Third, the final cluster centers from the iterative *k*-means cluster analysis on the total sample ($N = 336$) were used as non-random starting points in an iterative *k*-means cluster analysis on the sample including only participants who completed both the DIDS and the ADP-IV ($n = 293$). Using the total sample to calculate the final cluster centers allowed us to determine the identity status clusters while considering all available information.

Based on the stepwise cluster analysis, six identity statuses were retained (see Figure 1): achievement (n = 50; 17.06%), foreclosure (n = 52; 17.75%), searching moratorium (n = 50; 17.06%), troubled diffusion (n = 43; 14.68%), carefree diffusion (n = 21; 7.17%), and an undifferentiated status (n = 77; 26.28%). This six-cluster solution provided the best and most parsimonious fit to the data and explained between 52% and 67% of the variance in identity processes. Noteworthy, the carefree diffusion status obtained in the present study showed a higher mean score on ruminative exploration than expected and observed in previous identity status research (Luyckx, Duriez, Klimstra, & De Witte, 2010; Luyckx et al., 2008; Schwartz et al., 2011; Verschueren, Rassart, et al., 2017).

Identity Processes, Statuses and Personality Disorder Symptomatology

Table 3 presents the correlations between the identity exploration and commitment processes, and PDs. Exploration in breadth was positively associated with histrionic PD, whereas exploration in depth was negatively associated with schizoid and antisocial PDs. Commitment making was negatively related to all PDs, but was not significantly related to antisocial and narcissistic PDs. Similarly, identification with commitment was negatively related to all PDs, but was not significantly related to narcissistic PD. Finally, ruminative exploration was positively associated with all PDs.[2]

To compare the identity statuses on their scores on dimensionally measured PDs, we performed a MANOVA [Wilks' $\lambda = .674$, $F(50, 1252) = 2.265$, $p < .001$, partial $\eta^2 = .076$]. As indicated in Table 4, identity statuses significantly differed from one another with respect to their mean scores on all PDs, except for narcissistic PD. Generally, pairwise status comparisons indicated that achievement and foreclosure statuses had the lowest mean scores on PDs, whereas troubled diffusion had the highest mean PD scores. Additionally, individuals in

[2] Correlations were similar when controlling for age in a partial correlational analysis.

carefree diffusion scored significantly higher on symptoms of schizoid, schizotypal, avoidant, and dependent PDs than individuals in achievement and/or foreclosure statuses. Individuals in searching moratorium scored significantly higher on symptoms of schizotypal, avoidant, and histrionic PDs than individuals in achievement. Finally, individuals in the undifferentiated status reported higher mean PD scores for histrionic, avoidant, and dependent PDs than individuals in achievement and/or foreclosure. Overall, searching moratorium had low to moderate scores on all PDs and did not significantly differ from the undifferentiated status.

As our data pointed to significant age and gender effects, we conducted one multivariate analysis of covariance (MANCOVA) [Wilks' $\lambda = .704$, $F(50, 1243) = 1.992$, $p < .001$, partial $\eta^2 = .068$]. The univariate F-values when controlling for age and gender were similar to the F-values obtained in the MANOVA.

Gender and Age Differences

Gender differences were examined conducting one chi-square analysis and two multivariate analyses of variance (MANOVAs). Men were relatively overrepresented in foreclosure [$\chi^2(5, n = 293) = 12.00$, $p = .035$], whereas women scored significantly higher on exploration in depth. Men scored significantly higher on schizoid, antisocial, and narcissistic PDs (see Table 2).

Age differences were examined with one chi-square analysis and two correlational analyses (see Table 3). No significant age effect emerged in identity statuses [$\chi^2(60, n = 293) = 71.056$, $p = .155$]. Commitment making was positively associated with age, whereas ruminative exploration was negatively associated with age. Schizoid, borderline, histrionic, avoidant, and dependent PDs were negatively associated with age.

Discussion

Moderate to extreme identity impairment is considered a central issue within personality pathology in the AMPD, forwarded in Section III of DSM-5 (APA, 2013). Despite Marcia's

(2006) theorizing, studies investigating associations between identity processes, statuses, and personality pathology are limited. Accordingly, the present study examined these associations in a Belgian community sample of emerging adults.

Stepwise cluster analysis on Luyckx' (2008) identity exploration and commitment processes revealed six identity statuses. Consistent with Marcia (1980), we identified achievement, foreclosure, and moratorium statuses. However, the moratorium status in our sample differs from Marcia's (1980) classical moratorium status and appears to resemble the 'searching moratorium' status (Crocetti, Rubini, Luyckx, & Meeus, 2008; Meeus et al., 2010; Schwartz et al., 2011). Individuals characterized by a 'searching moratorium' identity appear to manifest a willingness to explore and adjust their identities while still retaining some of their prior commitments (Meeus et al., 2010), as evidenced by their moderate scores on commitment processes. Additionally, they score moderately high on ruminative exploration. Alternatively, the classical moratorium status involves low scores on commitment processes and high scores on ruminative exploration (Luyckx et al., 2008). The emergence of this 'searching moratorium' status could be explained by the age range of our sample. As our study includes emerging adults aged 18 to 30 years old, 'searching moratorium' may be particularly represented by individuals who are further along in the exploration and decision-making process, which is generally initiated in adolescence. In line with previous research (Luyckx et al., 2008, 2010; Schwartz et al., 2011; Verschueren, Rassart, et al., 2017), we identified carefree and troubled diffusion statuses. However, the carefree diffusion status obtained in the present study demonstrates a higher mean score on ruminative exploration than observed in previous identity status research (e.g., Luyckx et al., 2008; Schwartz et al., 2011). Finally, we identified an undifferentiated status, represented by individuals scoring moderate on all identity processes.

With regard to associations between identity processes and PD symptomatology, our results indicated that commitment processes were generally negatively associated with PDs,

whereas ruminative exploration was positively associated with PDs. Hence, feelings of indecisiveness and ongoing worry about identity alternatives, and related difficulty with making commitments seems to be related to personality pathology. Recently, a study by Peters et al. (2017) demonstrated that rumination is associated with identity disturbance. They suggested that prolonged rumination may disrupt the formation of a stable sense of identity, which may play into the development of BPD features (Peters et al., 2017). The present findings potentially suggest that excessive rumination may not be a unique feature of BPD but may be characteristic of all PDs. Interestingly, commitment processes were not significantly related to narcissistic and antisocial PDs (except for a negative association between identification with commitment and antisocial PD). As Marcia (2006) suggested, individuals with these PDs may be able to take up certain identity-defining roles. However and importantly, their identity-related choices are often subject to change as they are not based on a thorough exploration of personal beliefs, values, and aspirations (Marcia, 2006). Similarly, Kernberg and Caligor (2005) claim that individuals with narcissistic PD often present with an integrated, but pathological, sense of self. This so-called pathological grandiose self may replace their underlying lack of identity integration (Kernberg & Caligor, 2005).

Furthermore, exploration in breadth was positively related to histrionic PD, whereas exploration in depth showed a negative association with schizoid and antisocial PDs. Individuals with histrionic PD are characterized by strong and/or transitory emotions and appear to be unable to find a stable foundation from which they can proceed towards a meaningful future (Marcia, 2006). Potentially, they may be stuck in a continuous cycle of exploration, without being able to commit to some sort of identity-related choice. Schizoid individuals consider themselves self-sufficient, while perceiving others as uninteresting, intrusive, and unrewarding. Relatedly, they may detach from interpersonal contact and choose solitary activities (APA, 2013). However, in-depth exploration of existing identity commitments

commonly requires opportunities to talk to others and look for additional information, potentially explaining the negative association between exploration in depth and schizoid PD (Luyckx et al., 2008). Finally, antisocial individuals may engage less in exploration in depth as this might require them "to forego immediate gratification of some desire" (Marcia, 2006, p. 589). Relatedly, Schwartz et al. (2011) indicated that carefree diffused individuals – characterized by low scores on both proactive exploration processes (among which exploration in depth) and ruminative exploration – scored highest on externalizing behaviors such as rule breaking, social aggression, and physical aggression.

With regard to associations between identity statuses and PD symptomatology, our results indicated that individuals in troubled and carefree diffusion generally had the highest mean scores on PDs, whereas those in achievement and foreclosure had the lowest mean scores, with individuals in searching moratorium scoring in-between, even when controlling for age and gender. Hence, individuals who are currently committed to certain identity choices seem to experience less PD symptomatology than individuals who have not settled yet on identity-defining roles. Although troubled diffused individuals struggle with higher levels of ruminative exploration than those in carefree diffusion, both seem susceptible to personality pathology. In the current study, troubled diffused individuals had moderate scores on proactive exploration processes. This suggests that they do attempt to partake in productive identity work, which could be due to the non-clinical nature of our sample. Subsequently, this may have resulted in lower mean PD scores for individuals in troubled diffusion and, hence, a smaller difference in PD symptomatology between troubled and carefree diffused individuals.

As expected (Verschueren, Luyckx, et al., 2017), searching moratorium individuals had lower mean PD scores than diffused individuals, and higher mean PD scores than individuals in achievement and foreclosure. Additionally, searching moratorium did not significantly differ from the undifferentiated status with respect to their mean scores on PD symptomatology. This

finding may not be unexpected, as particularly the absence of identity commitments appears to signal the presence of PD symptoms and vice versa. Searching moratorium individuals seek out alternative commitments while already possessing a certain degree of commitment.

Interestingly, individuals in troubled diffusion demonstrated lower mean scores on narcissistic PD in comparison with other PDs. Moreover, statuses did not significantly differ from one another on narcissistic PD. Similarly, a study by Few et al. (2013) has yielded non-significant correlations between identity impairment and narcissistic PD. According to Kernberg (1984; Kernberg & Caligor, 2005), narcissistic individuals are capable to construct an identity, although one that is unstable and grossly inflated to replace their underlying lack of identity integration and maintain their self-esteem.

Different from Marcia's (2006) hypotheses, foreclosed individuals scored *low* on all PDs, including paranoid and obsessive-compulsive PDs. However, as we conducted our study in a community sample, the foreclosure group probably included mainly well-functioning foreclosures, characterized by stable – although possibly rigid – identity-defining choices. Altogether, individuals in diffusion statuses appear to encounter more PD symptoms than individuals in achievement and foreclosure. As such, particularly lack of commitments may be related to PD symptomatology. These results partially correspond to Marcia's (2006) earlier assumptions that most PDs would fall within the identity diffusion status.

Our results seem to align well with the AMPD, suggesting that identity impairment may be a diagnostic criterion of *all* PDs (APA, 2013). Although our identity conceptualization differs from the one described in the AMPD and we cannot derive strong conclusions on the relation between identity impairment and PDs based on the nature of our sample, the present study offers an important contribution to the literature. Our findings indicate that diffused individuals – i.e., individuals who are not engaging in proactive exploration and seem unable

to settle on commitments – experience the highest levels of PD symptomatology. Furthermore, ruminative exploration seems to be characteristic of all PDs.

This study is not without limitations. First, we relied on self-report questionnaires. Collecting all data from a single informant can induce inflated correlations. Furthermore, we cannot exclude that findings were partially influenced by limited insight into one's own personality functioning, as personality-related features are often ego-syntonic (APA, 2013). Future studies should apply a multi-method and multi-informant assessment design when studying identity and personality pathology.

Second, the online sampling method for sample 1 did not allow us to obtain a population-representative sample for the Belgian community. Our sample was characterized by an overrepresentation of female participants. Hence, caution is recommended when interpreting and generalizing the results.

Third, we conducted our study cross-sectionally in a sample of community emerging adults. Future research should explore the associations in a clinical sample of personality disordered patients and should apply a longitudinal study design to examine the directionality of the relation between identity functioning and personality pathology.

Fourth, this study focused on identity processes and statuses. Although the usefulness of such identity models has been established, they underrepresent Erikson's conceptualization of identity (van Hoof, 1999). Today, three components have been recognized as central to identity: (1) *distinctiveness*, or perceiving the self as unique, (2) *coherence*, or seeing the self as similar across identity domains, and (3) *continuity*, or perceiving the self as the same person over time (van Doeselaar, Becht, Klimstra, & Meeus, 2018). In the present study, we focused particularly on identity continuity as forming commitments serves the function of creating a sense of continuity. To advance the study of how identity is linked to PDs, future research should integrate all components.

Fifth, although the main focus of the identity status approach is on capturing individual differences in the way people address and resolve identity issues, little is known about how individuals in the undifferentiated status think, feel, and act with regard to their identity. As previously suggested by Luyckx et al. (2008), long-term research is needed to investigate how 'undifferentiated' individuals develop a sense of identity across time.

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Compliance with Ethical Standards

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Tables

Table 1. *Sample Items of Each Subscale.*

Scale	Item
Dimensions of Identity Development Scale (DIDS)	
Exploration in breadth	I think about different things I might do in the future
Exploration in depth	I talk with other people about my plans for the future
Ruminative exploration	I worry about what I want to do with my future
Commitment making	I have decided on the direction I am going to follow in my life
Identification with commitment	My plans for the future match with my true interests and values
Assessment of DSM-IV Personality Disorders (ADP-IV)	
Paranoid PD	I always assume that others will take advantage of me, hurt me or deceive me
Schizoid PD	Unlike most other people, I don't desire intimacy or close relationships
Schizotypal PD	The presence of others makes me very cautious, extremely anxious and uncomfortable
Antisocial PD	It's in my nature to deceive others, swindle or to lie to others
Borderline PD	I really can't bear the thought that someone would leave me or abandon me; I therefore would do anything to avoid this happening
Narcissistic PD	I typically try to win people by means of sexual seduction or provocation
Histrionic PD	I'm very often preoccupied with fantasies of being successful, powerful, brilliant, attractive or loved
Avoidant PD	Because I fear criticism or rejection I avoid activities at work or at school that involve a lot of contact with others
Dependent PD	It is always difficult for me to make day-to-day decisions without exceeding advice and reassurance from others
Obsessive-Compulsive PD	I typically find it difficult to finish what I have started because I demand of myself that everything I do nears total perfection

Table 2. *Descriptive Statistics and Gender Differences.*

Variables	Males *M* (*SD*)	Females *M* (*SD*)	*F*	Partial η^2
Exploration in breadth	3.78 (0.58)	3.83 (0.61)	.44	.001
Exploration in depth	3.53 (0.56)	3.71 (0.61)	5.94*	.020
Ruminative exploration	2.69 (1.02)	2.94 (0.95)	3.86	.013
Commitment making	3.74 (0.85)	3.63 (0.70)	1.34	.005
Identification with commitment	3.60 (0.68)	3.46 (0.67)	2.49	.008
Paranoid	2.30 (0.95)	2.40 (0.97)	.63	.002
Schizoid	2.22 (0.93)	1.96 (0.81)	5.59*	.019
Schizotypal	2.17 (0.94)	2.04 (0.88)	1.31	.005
Antisocial	1.94 (0.89)	1.48 (0.56)	27.41***	.087
Borderline	2.35 (0.94)	2.59 (1.08)	3.08	.011
Narcissistic	2.24 (0.89)	1.95 (0.71)	8.38**	.028
Histrionic	2.19 (0.92)	2.29 (0.88)	.77	.003
Avoidant	2.58 (1.29)	2.85 (1.29)	2.60	.009
Dependent	2.29 (0.96)	2.41 (0.92)	1.09	.004
Obsessive-compulsive	2.90 (0.98)	3.07 (0.99)	1.82	.006

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

Table 3. *Correlations Among all Study Variables and with Age.*

	Age	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Exploration in breadth	-.02	.42***	.24***	.02	.00	-.04	-.10	-.01	-.04	.09	-.20	.14*	.01	.01	.00
2. Exploration in depth	.05	-	.12*	.14*	.15**	-.12	-.21***	-.04	-.13*	.00	-.10	.02	-.11	-.03	-.01
3. Ruminative exploration	-.14*		-	-.60***	-.63***	.35***	.29***	.43***	.21***	.46***	.20***	.38***	.42***	.41***	.34***
4. Commitment making	.14*			-	.69***	-.14*	-.23***	-.20**	-.10	-.23***	-.08	-.16**	-.29***	-.23***	-.18**
5. Identification with commitment	.11				-	-.26***	-.27***	-.29***	-.12*	-.32***	-.12	-.22***	-.42***	-.32***	-.32***
6. Paranoid	-.09					-	.45***	.70***	.46***	.73***	.57***	.59***	.57***	.55***	.59***
7. Schizoid	-.09						-	.64***	.35***	.38***	.42***	.27***	.55***	.40***	.47***
8. Schizotypal	-.15*							-	.50***	.71***	.59***	.63***	.64***	.59***	.59***
9. Antisocial	-.01								-	.49***	.57***	.55***	.23***	.32***	.23***
10. Borderline	-.19**									-	.53***	.74***	.59***	.67***	.58***
11. Narcissistic	-.05										-	.69***	.32***	.39***	.49***
12. Histrionic	-.17**											-	.45***	.61***	.48***
13. Avoidant	-.18**												-	.75***	.61***
14. Dependent	-.15**													-	.58***
15. Obsessive-Compulsive	-.10														-

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

Table 4. *Means, Standard Deviations, ANOVAs, and Post-hoc Comparisons for PDs based upon Tukey HSD Tests.*

Variable	Achievement (1; *n* = 50)	Foreclosure (2; *n* = 52)	Searching moratorium (3; *n* = 50)	Troubled diffusion (4; *n* = 43)	Carefree diffusion (5; *n* = 21)	Undifferentiated (6; *n* = 77)	*F*(5, 283)	η^2	Post-hoc
Paranoid	-0.29 (0.82)	-0.26 (0.99)	-0.12 (1.00)	0.33 (0.90)	0.25 (0.93)	0.18 (1.10)	3.51**	.058	4 > 1, 2
Schizoid	-0.38 (0.67)	-0.20 (1.07)	-0.08 (0.90)	0.26 (1.03)	0.83 (1.37)	0.06 (0.92)	5.81***	.093	4 > 1 5 > 1, 2, 3, 6
Schizotypal	-0.45 (0.70)	-0.25 (0.93)	0.11 (1.13)	0.53 (1.02)	0.36 (1.06)	-0.00 (0.93)	6.17***	.098	3, 5 > 1 4 > 1, 2, 6
Antisocial	-0.30 (0.67)	0.08 (1.12)	-0.18 (0.80)	0.34 (1.16)	0.21 (1.11)	-0.04 (0.95)	2.66*	.045	4 > 1
Borderline	-0.38 (0.82)	-0.37 (0.90)	0.13 (1.07)	0.58 (0.93)	0.30 (1.03)	0.02 (0.98)	6.84***	.108	4 > 1, 2, 6
Narcissistic	-0.25 (0.87)	-0.02 (1.16)	-0.03 (1.02)	0.14 (1.02)	0.20 (0.97)	0.07 (0.96)	1.07	.018	/
Histrionic	-0.47 (0.82)	-0.25 (1.06)	0.15 (1.12)	0.48 (0.92)	0.17 (0.95)	0.06 (0.88)	5.60***	.090	3, 6 > 1 4 > 1, 2
Avoidant	-0.51 (0.67)	-0.40 (0.88)	0.05 (0.96)	0.47 (1.14)	0.56 (0.92)	0.18 (0.98)	9.01***	.137	3 > 1 4, 5, 6 > 1, 2
Dependent	-0.44 (0.86)	-0.32 (1.04)	0.08 (0.95)	0.32 (0.96)	0.31 (1.11)	0.18 (0.95)	5.20***	.084	4, 6 > 1, 2 5 > 1
Obsessive-Compulsive	-0.23 (1.05)	-0.40 (0.82)	0.05 (0.98)	0.38 (1.07)	0.30 (0.99)	0.09 (0.96)	4.09**	.067	4 > 1, 2

Note. **$p < .01$, ***$p < .001$.

Figure

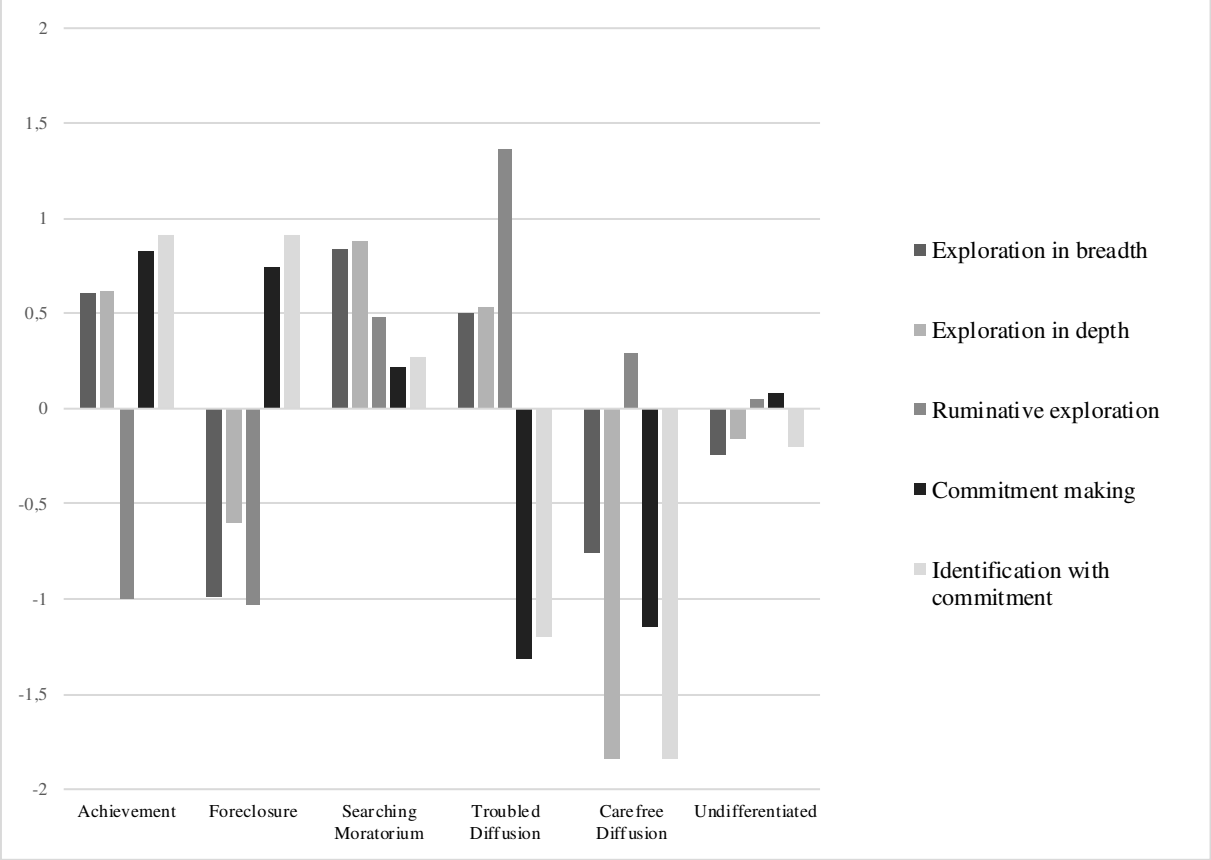

Figure 1. *Z*-scores for the identity process variables for the final six-cluster solution. The Y-axis represents *z*-scores: 0.2 *SD* is a small effect, 0.5 *SD* a moderate effect, and 0.8 *SD* a large effect (Cohen, 1988).