Personality and Individual Differences 146 (2019) 143–148

Contents lists available at ScienceDirect

Personality and Individual Differences

journal homepage: www.elsevier.com/locate/paid

Multidimensional perfectionism and borderline personality organization in emerging adults: A two-wave longitudinal study☆

Chang Chen[a,*], Paul L. Hewitt[a], Gordon L. Flett[b], Heather M. Roxborough[a]

[a] Department of Psychology, University of British Columbia, 2136 West Mall, Vancouver V6T 1Z4, British Columbia, Canada
[b] Department of Psychology, Behavioral Science Building, York University, 4700 Keele Street, Toronto M3J 1P3, Ontario, Canada

ARTICLE INFO

Keywords:
Perfectionism
Borderline personality organization
Personality dysfunction
Self-concept clarity
Interpersonal problems
Emerging adults

ABSTRACT

Previous research has linked socially prescribed perfectionism (perceiving perfectionistic expectations from others) with personality dysfunction in clinical and nonclinical samples. However, the mechanism by which socially prescribed perfectionism is related to personality dysfunction is largely unknown. This study sought to test the hypothesis that the relation between socially prescribed perfectionism and personality dysfunction (i.e., borderline personality organization) is explained by problems in self-concept clarity and interpersonal functioning. By assessing 217 emerging adults (67.7% female, M_{age} = 18.70) across two time points, we found that socially prescribed perfectionism was positively associated with borderline personality organization assessed concurrently and longitudinally. Additionally, socially prescribed perfectionism predicted an increase in borderline personality organization over a three-month period, after controlling for baseline levels of borderline personality organization, depressive symptomatology, and suicidal ideation. Bias-corrected bootstrapped tests of mediation revealed that socially prescribed perfectionism exerted a significant indirect effect on borderline personality organization through its associations with interpersonal problems and a lack of self-concept clarity. The present findings shed further light on perfectionism as an important personality construct underlying personality dysfunction.

1. Introduction

1.1. Perfectionism and personality dysfunction

Perfectionism is widely construed as a transdiagnostic, multidimensional personality construct underlying a wide range of psychological problems including depression, anxiety, disordered eating, personality disorders, and suicidal behaviors (see Egan, Wade, & Shafran, 2011 for a review). The two most commonly used measures of perfectionism are the Frost-multidimensional perfectionism scale (F-MPS; Frost, Marten, Lahart, & Rosenblate, 1990) and the Hewitt and Flett's (1991) multidimensional perfectionism scale (HF-MPS). Trait perfectionism, as conceptualized by Hewitt and Flett (1991), consists of *self-oriented perfectionism* (SOP; demanding perfection of oneself), *other-oriented perfectionism* (OOP; demanding perfection of others), and *socially prescribed perfectionism* (SPP; perceiving others as demanding perfection of oneself).

Recently, there has been an increased focus on the role of perfectionism in personality dysfunction. In university samples, SPP has been linked to a wide range of DSM-IV Cluster B personality disorder (PD) traits, including borderline, histrionic, paranoid, and antisocial PD traits (Sherry, Hewitt, Flett, Lee-Baggley, & Hall, 2007), and DSM-5 personality traits characterizing borderline, schizotypal, avoidant, and obsessive-compulsive PDs (Stoeber, 2014). Moreover, in a heterogeneous psychiatric sample, Hewitt and Flett (1991) found significant links between perfectionism and patterns of personality pathology as indicated by the Millon Clinical Multiaxial Inventory (MCMI). For example, SPP was associated positively with borderline, schizotypal, schizoid, avoidant, and passive-aggressive personality patterns, whereas OOP was associated positively with histrionic, narcissistic, and antisocial personality patterns. These findings converge with studies involving psychiatric patients with PD diagnoses (Dimaggio et al., 2018; Hewitt, Flett, & Turnbull, 1994; Lowyck, Luyten, Vermote, Verhaest, & Vansteelandt, 2017). For example, Lowyck et al. (2017) showed that changes in self-critical perfectionism among patients with PD were significantly associated with the rate of change in symptomatic distress over the course of treatment. Together, these studies provide support for the role of perfectionism in personality dysfunction (see

☆ This research was supported by a grant from the Social Sciences and Humanities Research Council of Canada (SSHRC; 410-2009-1050) awarded to Paul L. Hewitt.
* Corresponding author.
E-mail addresses: chang.chen@psych.ubc.ca (C. Chen), phewitt@psych.ubc.ca (P.L. Hewitt).

https://doi.org/10.1016/j.paid.2019.04.011
Received 11 December 2018; Received in revised form 5 April 2019; Accepted 8 April 2019

Ayearst, Flett, & Hewitt, 2012).

Although considerable progress has been made in understanding the role of perfectionism (e.g., SPP) in personality dysfunction – little is known about how perfectionism is related to personality dysfunction over time. Therefore, an important goal of the study was to investigate the relationship between perfectionism and personality dysfunction longitudinally. Specifically, we were interested in examining whether perfectionism was related to changes in personality dysfunction. Furthermore, despite the significant associations between perfectionism and personality dysfunction, we know little about mechanisms by which SPP might be associated with personality dysfunction. Personality functioning in the DSM-5 (American Psychiatric Association, 2013) is assessed along two continuous dimensions: *self* (identity and self-direction) and *interpersonal* (empathy and intimacy). SPP has been shown to exert a negative effect on individuals' self- and interpersonal functioning by interfering with identity exploration and goal pursuits (Campbell & Di Paula, 2002; Luyckx, Soenens, Goossens, Beckx, & Wouters, 2008) and impoverishing social relationships (see Hewitt, Flett, & Mikail, 2017 for a review). Given the importance of self and interpersonal functioning in SPP and personality dysfunction, we also explored indicators of self- and interpersonal functioning as potential mediators of the link between SPP and personality dysfunction.

1.2. Borderline personality organization

To assess personality dysfunction, we used Kernberg's (1984) borderline personality organization (BPO) because it encompasses several DSM personality diagnoses including borderline, narcissistic, and antisocial PDs (Kernberg, 2004), all of which have been previously linked to perfectionism (e.g., Dimaggio et al., 2018; Hewitt et al., 1994; Stoeber, 2014). Kernberg (1984) coined the term 'borderline personality organization' (BPO) to describe a level of personality structure or organization on a continuum between neurotic and psychotic personality organization. BPO is characterized by three distinctive features: *identity diffusion*, *primitive defenses*, and *intact reality testing* (Kernberg, 1984). Identity diffusion, the failure to establish a coherent, integrated sense of identity, is a central component in Kernberg's BPO. Similarly, Kohut (1971) emphasized the lack of cohesiveness of the self in 'disorders of the self' including pathological narcissism. Furthermore, individuals with a BPO employ primitive defenses or maladaptive coping mechanisms (e.g., splitting, idealization, and devaluation) and their sense of reality remains mostly intact under normal circumstances (Kernberg, 1984).

1.3. Perfectionism social disconnection model

To better understand the relationship between SPP and personality dysfunction, we turned to the recently expanded Perfectionism Social Disconnection Model (PSDM; Hewitt et al., 2017). Over the past 15 years, the PSDM has gained substantial support in both clinical and nonclinical samples (see Hewitt et al., 2017 for a review). According to the PSDM, one of the core motivations for individuals high in perfectionism (e.g., SPP) is to defend against shame and humiliation, and to secure social approval and belongingness by attempting to be, or appear, perfect. For example, people high in SPP strive to please by deferring to the wishes of others and doing what they believe is expected of them, at the expenses of one's interests, values and autonomy. Yet, these behaviors often come across as withholding, insincere, or defensive by others, thereby creating interpersonal problems and culminating in the very consequences that perfectionistic individuals are most fearful of – social disconnection in the form of alienation, rejection, or abandonment (Hewitt et al., 2017). Over time, these individuals may develop a sense of self that is devoid of internal consistency, spontaneity, and genuine self-worth.

1.4. Goals and hypotheses

The goal of the present study was to further elucidate the relationship between perfectionism (e.g., SPP) and personality dysfunction by examining the links between perfectionism and BPO in university students in a two-wave, three-month study. Consistent with the PSDM (Hewitt et al., 2017) and prior research linking perfectionism to personality dysfunction (e.g., Dimaggio et al., 2018; Lowyck et al., 2017; Stoeber, 2014), we hypothesized that SPP would be positively associated with BPO both concurrently and longitudinally. As stated before, another important goal of the study was to examine whether SPP is related to changes in personality dysfunction (e.g., BPO) longitudinally. According to the PSDM (Hewitt et al., 2017), perfectionism (e.g., SPP) is closely involved in the development of identity and self-concept. Moreover, SPP is generally considered a predisposing personality factor underlying multiple psychiatric conditions (Egan et al., 2011). Therefore, it is possible that SPP influences the development and changes in personality dysfunction. Finally, given the importance of self- and interpersonal functioning in both SPP and personality dysfunction, we examined indicators of self- and interpersonal functioning as potential mediators of the relationship between SPP and personality dysfunction.

In the present study, we wished to 1) explore the direct effect of perfectionism measured at baseline [time 1 (T1)], on BPO subscales (i.e., identity diffusion, primitive defenses, and impairment in reality testing) assessed both concurrently and longitudinally [time 2 (T2)], and we hypothesized that SPP would be positively associated with all three BPO subscales, 2) to examine whether SPP would be a unique positive predictor of changes in BPO beyond baseline levels of BPO, and 3) to investigate self-concept clarity and interpersonal problems as potential mediators of the association between SPP and BPO. Finally, we covaried T1 measures of depression and suicidal ideation in the analyses to ensure that the variances in BPO accounted for by perfectionism would not be attributed to participants' symptom distress.

2. Method

2.1. Participants and procedure

A total of 217 undergraduate students (147 women and 70 men) were recruited from a large Canadian university at the beginning of school term in September and December before the final examinations. Participants were then invited to return for a follow-up session about 3 months later toward the end of the school term. Participants ranged in age between 17 and 29 (M_{age} = 18.70, SD = 1.66). Of the 217 participants, 164 participants (116 women and 48 men) returned for the follow-up session about 3 months later (i.e., 24% attrition rate), with participant ages ranging from 17 and 29 (M_{age} = 18.95, SD = 1.67). The racial/ethnic composition of the present sample at T1 was 53.5% East Asian, 35.9% Caucasian, 8.8% Middle-eastern and South Asian, and 1.8% other or mixed races.

2.2. Measures

The following measures were administered at T1 and T2:

Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 1991) consists of three distinct subscales: *self-oriented perfectionism* (e.g., "one of my goals is to be perfect in everything I do"), *other-oriented perfectionism* (e.g., "If I ask someone to do something, I expect it to be done flawlessly"), and *socially prescribed perfectionism* (e.g., "anything that I do that is less than excellent will be seen as poor work by those around me"). Each dimension is assessed with 15 items, which are rated on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*). Scores for SOP, OOP, and SPP were obtained by totalling the items comprising each of the three subscales. Research

Table 1
Descriptive statistics and differences between study variables at T1 and T2 (n = 164).

Descriptive statistics								
Variable	Time 1			Time 2			T1–T2	
	M	*SD*	α	*M*	*SD*	α	Observed range	*t*(162)
1. SOP	68.01	12.64	0.86	68.02	12.74	0.87	29–104	0.48*
2. OOP	55.93	9.33	0.82	57.20	9.89	0.83	25–86	−1.76
3. SPP	55.23	11.89	0.84	56.41	12.87	0.85	15–102	−1.74
4. SCC	36.34	8.893	0.84	36.05	9.40	0.85	12–60	0.80
5. IIP	82.49	39.95	0.80	86.39	42.94	0.81	2–205	−3.03**
6. BPO identity diffusion	24.42	7.42	0.84	23.88	7.65	0.83	10–46	0.72
7. BPO reality testing	19.05	6.44	0.85	18.62	6.52	0.86	10–38	0.20
8. BPO primitive defenses	21.72	6.96	0.82	21.92	8.06	0.84	10–68	−0.88
9. BPO total score	65.19	19.10	0.84	64.42	20.19	0.83	30–118	−0.04
10. BDI-II	8.54	7.87	0.85	7.36	6.69	0.87	0–35	1.63
11. SIS	1.96	4.86	0.83	1.17	3.32	0.84	0–35	1.34

Note. SOP = Self-Oriented Perfectionism; OOP = Other-Oriented Perfectionism; SPP = Socially Prescribed. Perfectionism; SCC = Self-Concept Clarity; IIP = Inventory of Interpersonal Problems; BPO = Borderline Personality. Organization; BDI-II = Beck Depression Inventory; SIS = Suicide Ideation Scale.
* $p < .05$.
** $p < .01$.

on the MPS in clinical and nonclinical samples has demonstrated high levels of test-retest reliability and construct validity (e.g., Hewitt & Flett, 1991).

Self-Concept Clarity Scale (SCC; Campbell et al., 1996) is a 12-item measure of the degree to which individuals have a clear or coherent sense of who they are (e.g., "sometimes I feel that I am not really the person that I appear to be," "if I were asked to describe my personality, my description might end up being different from one day to another day; both reverse coded). Participants responded to the items on a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*). A total SCC score was created by summing all items, with higher scores indicating a greater sense of self-concept clarity. The SCC has demonstrated satisfactory reliability and validity in university samples (Campbell et al., 1996).

Inventory of Interpersonal Problems - Circumplex Version (IIP-C; Horowitz, Alden, Wiggins, & Pincus, 2000) is a 64-item self–report measure that assesses problems associated with each octant of the interpersonal circumplex. Participants rate how distressed they have been by each problem using a 5-point scale (0 = *not at all* to 4 = *extremely*). Examples of IIP-C subscales include *domineering*, *vindictive*, *cold*, *socially inhibited*, *nonassertive*, *overly accommodating*, *self-sacrificing*, and *intrusive* interpersonal styles. The total IIP-C score was used as a general indicator of interpersonal problems and distress (Horowitz et al., 2000). The IIP-C has demonstrated satisfactory reliability and validity in university and clinical samples (e.g., Horowitz et al., 2000).

Borderline Personality Organization (BPO; Oldham et al., 1985) is a 30-item self-report instrument derived through factor analysis of a 130-item questionnaire by the same authors intended to measure one's level of personality organization. The BPO contains three subscales: 1) *Identity diffusion*, assessed by ascertaining difficulties in describing one's own personality or the personalities of others and uncertainty about career or goals (e.g., "I feel like a fake or an imposter, that others see me as quite different at times"), 2) *primitive defenses*, which assesses maladaptive coping mechanisms including splitting, idealization, devaluation, denial, projection, and projective identification (e.g., "people tend to respond to me by either overwhelming me with love or abandoning me"), and 3) *impairment in reality testing*, which describes external versus internal origins of perceptions, and the cognitive process of reality testing (e.g., "people see me as being rude or inconsiderate and I don't know why"). Each item is rated on a 5-point scale (1 = *never true*, 5 = *always true*). Subscale scores were created by totalling the items comprising each of the three BPO subscales. The BPO also yields a total score used as a dimensional measure of the overall borderline personality organization. The BPO has demonstrated satisfactory intrascale consistency, interscale relationships and relationship to BPD differential diagnosis (e.g., Dutton & Starzomski, 1993; Oldham et al., 1985).

Beck Depression Inventory-2nd Edition (BDI-II; Beck, Steer, & Brown, 1996) is a 21-item inventory that assesses severity of depression over the past two weeks, including feelings of sadness, hopelessness, pessimism, suicidality, and physical symptoms associated with depression. The BDI-II is a widely used measure of depressive symptomatology for which validity and reliability have been demonstrated in clinical and nonclinical samples (e.g., Beck et al., 1996).

Scale for Suicide Ideation (SSI; Beck, Steer, & Ranieri, 1988). The SSI is a 19-item self-report measure of overall risk for suicidal behavior including such themes as consideration of passive and active suicidal attempts, frequency and attitude toward ideation, specific plans for suicide, and final suicidal attempt. Each item in the SSI is rated on a 3-point scale from 0 to 2 in terms of severity. The SSI has demonstrated good validity and reliability in nonclinical samples (Beck et al., 1988).

3. Results

3.1. Preliminary and descriptive statistics

Data from participants who did not return at T2 (n = 53) were omitted by listwise deletion. At the item-level, approximately 1.5% of participants' data were missing at T1 and less than 0.5% of participants' data were missing at T2. Within-subject mean imputation was utilized to address the missing data. Means, standard deviations, and internal consistencies are presented in Table 1 for T1 and T2 variables. Means and standard deviations are within one standard deviation of the norms described in previous research using university samples (e.g., Beck et al., 1988; Campbell et al., 1996; Hewitt & Flett, 1991; Horowitz et al., 2000). It should be noted that participants scored significantly higher on interpersonal problems [$t(162) = 3.03, p < .01$] at T2 than at T1. In terms of gender differences, independent t-tests revealed that men and women did not differ on any of the variables at T1. At T2, however, men scored marginally higher on OOP [$t(110) = 2.01$, $p = .05$] than women.

Table 2
Hierarchical regression analyses predicting time 2 BPO subscales with T1 perfectionism dimensions after controlling for gender, ethnicity, T1 BPO, depressive symptoms, and suicidal ideation (n = 164).

Outcome variable	*B*	SE	β	ΔR^2	*df*
BPO identity diffusion (2)					
Step 1				0.06	2, 161
Gender	1.82	1.40	0.11		
Ethnicity	−3.15	1.13	−0.23**		
Step 2				0.46	3, 158
Depression (1)	0.19	0.08	0.18*		
Suicidal ideation (1)	−0.01	0.03	−0.03		
BPO identity diffusion (1)	0.65	0.07	0.63***		
Step 3				0.03	3, 155
SPP (1)	0.10	0.05	0.15*		
SOP (1)	−0.07	0.04	−0.12		
OOP (1)	−0.02	0.05	−0.03		
BPO primitive defenses (2)					
Step 1				0.03	2, 161
Gender	0.56	1.51	0.03		
Ethnicity	−2.67	1.22	−0.18*		
Step 2				0.34	3, 158
Depression (1)	0.10	0.09	0.09		
Suicidal ideation (1)	0.01	0.04	0.10		
BPO primitive defenses (1)	0.65	0.10	0.56***		
Step 3				0.03	3, 155
SPP (1)	0.10	0.06	0.15*		
SOP (1)	0.03	0.05	0.04		
OOP (1)	−0.04	0.06	−0.05		
BPO Reality Testing (2)					
Step 1				0.10	2, 161
Gender	−2.41	1.12	−0.17*		
Ethnicity	−3.10	0.91	−0.27**		
Step 2				0.35	3, 158
Depression (1)	0.02	0.06	0.03		
Suicidal ideation (1)	−0.04	0.03	−0.11		
BPO reality testing (1)	0.70	0.08	0.67***		
Step 3				0.04	3, 155
SPP (1)	0.10	0.04	0.21*		
SOP (1)	−0.08	0.03	−0.16*		
OOP (1)	−0.05	0.04	−0.09		

Note. (1) denotes Time 1; (2) denotes Time 2.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

3.2. Bivariate correlations

As hypothesized, T1 SPP positively correlated with all BPO scores across two time points (see Table 1 in Supplementary Materials). Additionally, T1 SOP positively correlated with T2 primitive defenses, whereas T1 OOP was positively associated with T2 interpersonal problems and T1 measures of reality testing, primitive defenses, and BPO total scores. All BPO scores correlated positively with interpersonal problems, depression, and suicidality, and negatively with self-concept clarity.

3.3. Hierarchal regression analyses

Next, we conducted hierarchical regression analyses to test the hypothesis that T1 SPP would predict an increase in BPO subscales longitudinally (see Table 2). In each regression analysis, participants' gender and ethnicity were entered at Step 1, followed by T1 depressive symptoms, suicidal ideation, and BPO at Step 2, and T1 perfectionism dimensions (i.e., SOP, OOP, and SPP) at Step 3. We also tested the alternative hypothesis that BPO would predict an increase in SPP longitudinally.

As hypothesized, T1 SPP was a unique positive predictor of all three BPO subscales assessed 3 months later. Specifically, SPP predicted significant *increases* in identity diffusion [β = 0.15, $p < .05$], primitive defenses [β = 0.15, $p < .05$], and impaired reality testing [β = 0.21, $p < .05$]. In addition, T1 SOP predicted a significant *decrease* in impaired reality testing [β = −0.16, $p < .05$]. Whereas T1 OOP did not account for significant variance in any BPO subscale. Together, T1 perfectionism dimensions accounted for about 3–4% unique variance in T2 BPO. To investigate the alternative hypothesis that T1 BPO variables would predict an increase in SPP longitudinally, we conducted additional hierarchical regression analyses with each of the T1 BPO subscales as a predictor of T2 SPP. As expected, none of the BPO variables predicted significant changes in SPP longitudinally (see Table 2 in Supplementary Materials).

3.4. Mediation analyses by bootstrapping

Next, parallel multiple mediation analyses by bootstrapping were conducted to investigate the hypothesis that T1 SPP would exert a significant indirect effect on T2 BPO via a lack of self-concept clarity and interpersonal problems. To test for the mediating effects of self-concept clarity and interpersonal problems, we utilized the PROCESS Model 4 (Hayes, 2013). Fig. 1 depicts the two-mediator model in which the predictor variable (SPP) is modelled as affecting the outcome variable (BPO) through two indirect pathways. One pathway runs from SPP to BPO via self-concept clarity while the second indirect pathway simultaneously runs through interpersonal problems. All indirect effects were subjected to bootstrap analyses with 10,000 bootstrap samples and a 95% confidence interval (CI). A bias-corrected bootstrap 95% confidence interval for the product of these paths that does not include zero provides evidence of a significant indirect effect (Hayes, 2013).

As shown in Table 3, results revealed significant indirect effects of T1 SPP on T2 BPO (i.e., identity diffusion, primitive defenses, and BPO total scores) via T2 self-concept clarity and interpersonal problems. Specifically, results indicate that significant indirect effects occurred for SPP on BPO total scores through self-concept clarity, with a point estimate of 0.13 and a 95% bias-corrected bootstrap (BCB) confidence interval (CI) of 0.05 to 0.27. In addition, SPP had a significant indirect effect on BPO total scores through interpersonal problems, with a point estimate of 0.27 and a 95% BCB CI of 0.14 to 0.45. Similarly, SPP had an indirect effect on identity diffusion and primitive defenses via self-concept clarity and interpersonal problems, as the 95% BCB CI of the point estimates did not include zero. However, no significant indirect effects of self-concept clarity and interpersonal problems were found for the association between SPP and reality testing. Finally, these mediation models accounted for 28%, 32%, and 23% of variance in BPO total scores, identity diffusion, and primitive defenses, respectively.

4. Discussion

The present study contributes to the growing literature on perfectionism and personality dysfunction (e.g., Dimaggio et al., 2018; Hewitt & Flett, 1991; Sherry et al., 2007; Stoeber, 2014) by further explicating the relationship between SPP and BPO over a three-month period. As hypothesized, SPP uniquely predicted an increase in each of the BPO subscales (i.e., identity diffusion, primitive defenses, and impaired reality testing) over a three-month period after controlling for baseline levels of BPO, depressive symptoms, suicide ideation, and SOP and OOP. Also, as predicted, we did not find support for the alternative hypothesis that BPO predicts changes in SPP over time. In addition to establishing a longitudinal association between SPP and BPO, the present study was also the first to explore potential mechanisms by which SPP may be associated with BPO. Specifically, we demonstrated that SPP was positively linked to BPO through its associations with self-concept clarity and interpersonal problems.

These findings are important for the following reasons. First, SPP's associations with self-concept clarity and identity diffusion are in line with previous research demonstrating perfectionism as an important

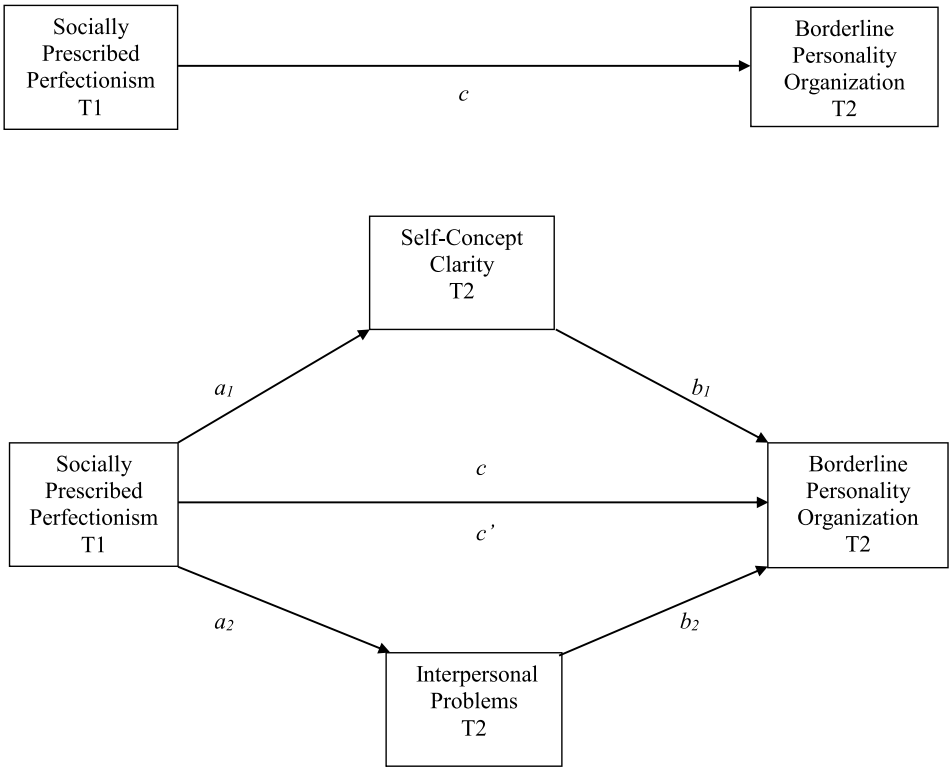

Fig. 1. Illustration of an indirect effects model (PROCESS Model 4; Hayes, 2013) for parallel multivariable mediation (n = 164).

determinant of identity formation and exploration (Campbell & Di Paula, 2002; Luyckx et al., 2008). Luyckx et al. (2008) showed that maladaptive perfectionism was negatively related to adolescents committing to important identity related decisions, and positively related to ruminative aspects of identity such as hesitation and indecisiveness, as well as the "imposter phenomenon". Therefore, the present study provides converging evidence for the notion that SPP interferes with the development of a coherent self-concept and an integrated set of identity commitments, which has likely contributed to an increase in BPO over time.

In addition to identity disturbances, the current study suggests that SPP is also related to BPO via interpersonal problems. These findings are in keeping with the literature on SPP and interpersonal problems and the PSDM (Hewitt et al., 2017), which posits that individuals with high SPP engage in maladaptive behaviors that engender interpersonal difficulties and ultimately a sense of alienation or social disconnection. Hewitt et al. (2017) described extensively how individuals with high SPP exhibit maladaptive interpersonal behaviors that may come across

Table 3
Indirect effects between SPP (T1) and BPO (T2) through self-concept clarity and interpersonal problems (n = 164).

Effect	BPO - total score (T2)			BPO - reality testing (T2)			BPO - primitive defenses (T2)			BPO - identity diffusion (T2)		
		se	*t*		*se*	*t*		*se*	*t*		*se*	*t*
Self-concept clarity (T2) as mediator												
	b_1											
a_1	−0.21***	0.06	−3.41	−0.21***	0.06	−3.41	−0.21***	0.06	−3.41	−0.21***	0.06	−3.41**
b_1	−0.60***	0.15	−3.89	−0.03	0.05	−0.55	−0.25***	0.07	−3.63	−0.32***	0.06	−5.73
Interpersonal problems (T2) as mediator												
	b_2											
a_2	1.29***	0.28	4.67	1.29***	0.28	4.67	1.29***	0.28	4.67	1.29***	0.28	4.67
b_2	0.21***	0.03	6.05	0.08***	0.01	6.82	0.06***	0.02	4.08	0.06***	0.01	5.04
c	0.15	0.12	1.27	−0.01	0.04	−0.19	0.08	0.05	1.56	0.07	0.04	1.77
c'	0.55***	0.13	4.13	0.11*	0.04	2.40	0.22***	0.05	3.96	0.22***	0.05	4.56

Point estimate		BCa 95% CI		Point Estimate	BCa 95% CI		Point estimate	BCa 95% CI		Point estimate	BCa 95% CI	
		Lower	Upper		Lower	Upper		Lower	Upper		Lower	Upper
ab	0.40	0.23	0.60	0.11	0.06	0.18	0.14	0.07	0.21	0.15	0.08	0.22
a_1b_1	0.13	0.05	0.27	0.01	−0.01	0.04	0.05	0.02	0.13	0.07	0.03	0.13
a_2b_2	0.27	0.14	0.45	0.11	0.06	0.17	0.08	0.03	0.16	0.08	0.04	0.14

Note. a, b, c, and c' represent unstandardized regression coefficients. CI = bias corrected and accelerated 95% confidence interval; 10,000 bootstrap samples.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

as aloof, hostile, and defensive to people around them, which in turn, can perpetuate feelings of disconnection and the perception of the self as fundamentally flawed and unlovable and others as overly harsh and undependable. In line with the PSDM, the present study demonstrated that one pathway in which SPP may confer risk for BPO is through its association with interpersonal dysfunction.

4.1. Limitations and future directions

There are several noteworthy limitations in our study. First and foremost, despite the longitudinal nature of the study, our findings cannot be conclusively interpreted as evidence for the direction of the relationship between SPP and BPO. Although SPP is associated with an increased BPO over time, it is also conceivable that BPO leads to an increase in SPP, as perfectionistic behaviors may be a way of coping with the intense emotional and interpersonal experiences associated with personality dysfunction. Likewise, we cannot draw causal conclusions regarding the indirect effects of self-concept clarity and interpersonal problems as baseline BPO was not covaried in the mediation analyses. Thus, future research should explore similar models including these variables measured at more than two time points, with longer time intervals, to further delineate the directionality of the relation between SPP and personality dysfunction. In addition, these findings need to be replicated beyond university students (e.g., clinical and community populations). Finally, future research should consider using alternative measures of personality dysfunction (e.g., diagnostic interviews, informant reports) to obtain a more complete or accurate picture of individuals' personality functioning.

4.2. Concluding remarks

The present findings extend the literature on perfectionism and personality dysfunction (see Ayearst et al., 2012) by connecting SPP with identity disturbance, maladaptive defenses, and reality testing that are hallmarks of borderline personality organization. The present study also contributes to the larger body of research demonstrating that perfectionism is associated with a complex constellation of both intra- and interpersonal dysfunction that has profound impact on the person's identity development, interpersonal functioning, and overall wellbeing.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.paid.2019.04.011.

References

American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: American Psychiatric Association.

Ayearst, L. E., Flett, G. L., & Hewitt, P. L. (2012). Where is multidimensional perfectionism in DSM-5? A question posed to the DSM-5 personality and personality disorders work group. *Personality Disorders: Theory, Research, and Treatment, 3*(4), 458–469.

Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Beck depression inventory: Manual.* San Antonio, TX: Psychological Corporation.

Beck, A. T., Steer, R. A., & Ranieri, W. F. (1988). Scale for suicide ideation: Psychometric properties of a self-report version. *Journal of Clinical Psychology, 44*(4), 499–505.

Campbell, J. D., & Di Paula, A. (2002). Perfectionistic self-beliefs: Their relation to personality and goal pursuit. In G. L. Flett, & P. L. Hewitt (Eds.). *Perfectionism: Theory, research, and treatment* (pp. 181–198). Washington, DC: American Psychological Association.

Campbell, J. D., Trapnell, P. D., Heine, S. J., Katz, I. M., Lavallee, L. F., & Lehman, D. R. (1996). Self-concept clarity: Measurement, personality correlates, and cultural boundaries. *Journal of Personality and Social Psychology, 70*(1), 141–156.

Dimaggio, G., MacBeth, A., Popolo, R., Salvatore, G., Perrini, F., Raouna, A., ... Montano, A. (2018). The problem of overcontrol: Perfectionism, emotional inhibition, and personality disorders. *Comprehensive Psychiatry, 83*, 71–78.

Dutton, D. G., & Starzomski, A. J. (1993). Borderline personality in perpetrators of psychological and physical abuse. *Violence and Victims, 8*(4), 327–337.

Egan, S. J., Wade, T. D., & Shafran, R. (2011). Perfectionism as a transdiagnostic process: A clinical review. *Clinical Psychology Review, 31*(2), 203–212.

Frost, R. O., Marten, P., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research, 14*, 449–468.

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach.* Guilford Press.

Hewitt, P. L., & Flett, G. L. (1991). Perfectionism in the self and social contexts: Conceptualization, assessment, and association with psychopathology. *Journal of Personality and Social Psychology, 60*(3), 456–470.

Hewitt, P. L., Flett, G. L., & Mikail, S. F. (2017). *Perfectionism: A relational approach to conceptualization, assessment, and treatment.* New York, NY: Guilford.

Hewitt, P. L., Flett, G. L., & Turnbull, W. (1994). Borderline personality disorder: An investigation with the multidimensional perfectionism scale. *European Journal of Psychological Assessment, 10*(1), 28–33.

Horowitz, L. M., Alden, L. E., Wiggins, J. S., & Pincus, A. L. (2000). *The inventory of interpersonal problems manual.* San Antonio, TX: The Psychological Corporation.

Kernberg, O. F. (1984). *Severe personality disorders: Psychotherapeutic strategies.* New Haven, CT: Yale University Press.

Kernberg, O. F. (2004). Borderline personality disorder and borderline personality organization: Psychopathology and psychotherapy. In J. J. Magnavita (Ed.). *Handbook of personality disorders: Theory and practice* (pp. 92–119). Hoboken, NJ: John Wiley & Sons Inc.

Kohut, H. (1971). *The analysis of the self: A systematic approach to the psychoanalytic treatment of narcissistic personality disorders.* Chicago, IL: University of Chicago Press.

Lowyck, B., Luyten, P., Vermote, R., Verhaest, Y., & Vansteelandt, K. (2017). Self-critical perfectionism, dependency, and symptomatic distress in patients with personality disorder during hospitalization-based psychodynamic treatment: A parallel process growth modeling approach. *Personality Disorders: Theory, Research, and Treatment, 8*(3), 268–274.

Luyckx, K., Soenens, B., Goossens, L., Beckx, K., & Wouters, S. (2008). Identity exploration and commitment in late adolescence: Correlates of perfectionism and mediating mechanisms on the pathway to well-being. *Journal of Social and Clinical Psychology, 27*, 336–361.

Oldham, J., Clarkin, J., Appelbaum, A., Carr, A., Kernberg, P., Lotterman, A., & Haas, G. (1985). A self-report instrument for borderline personality organization. In T. H. McGlashan (Ed.). *Issue 1 of Progress in psychiatry series*. (pp. 1–18). Washington, DC: American Psychiatric Press.

Sherry, S. B., Hewitt, P. L., Flett, G. L., Lee-Baggley, D. L., & Hall, P. A. (2007). Trait perfectionism and perfectionistic self-presentation in personality pathology. *Personality and Individual Differences, 42*(3), 477–490.

Stoeber, J. (2014). Multidimensional perfectionism and the DSM-5 personality traits. *Personality and Individual Differences, 64*, 115–120.