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RESEARCH ARTICLE

Where does purging disorder lie on the symptomatologic and personality continuum when compared to other eating disorder subtypes? Implications for the DSM

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Abstract

Objectives: To assess the clinical significance and distinctiveness of purging disorder (PD) from other eating disorder (ED) diagnoses.

Method: Participants included 3127 women consecutively admitted to an ED treatment centre (246 PD, 465 anorexia nervosa restrictive [AN-R], 327 AN-binge purging [AN-BP], 1436 bulimia nervosa [BN], 360 binge eating disorder [BED], 177 atypical AN and 116 unspecified feeding or eating disorder [UFED]) who were diagnosed according to DSM-5 criteria. Additionally, 822 control participants were recruited from the community. All participants completed measures assessing ED symptoms (EDI-2), general psychopathology (SCL-90-R) and personality (TCI-R).

Results: Patients with PD, when compared to controls, scored significantly higher on the EDI-2 and SCL-90-R, and most TCI-R dimensions. Most of the significant differences between PD and the other ED diagnoses emerged between PD and AN-R, followed by Atypical-AN, UFED, AN-BP and BED, with patients with PD typically reporting higher scores on the EDI-2 and SCL-90-R subscales. Significant differences between PD and BN were also present, but to a lesser extent. The findings for personality varied amongst the different ED diagnoses.

Conclusions: PD is a clinically significant disorder, which seems to be more similar to BN than it is to AN and the other ED subtypes.

Abbreviations: AN, anorexia nervosa; AN-BP, binge purging anorexia nervosa; ANCOVA, analysis of covariance; ANOVA, analysis of variance; AN-R, restrictive anorexia nervosa; BED, binge eating disorder; BMI, body mass index range; BN, bulimia nervosa; CL-90-R, Symptom Checklist-Revised; DSM, Diagnostic and Statistical Manual of Mental Disorders; ED, eating disorder; EDI-2, Eating Disorder Inventory-2; FWER, Familywise Error Rate; GSI, Global Severity Index; NCP, non-compensatory purging; OSFED, other specified feeding and eating disorder; PD, purging disorder; PSDI, Positive Symptom Distress Index; PST, Positive Symptom Total; SBEs, subjective binge eating behaviours; SCID, Structured Clinical Interview for DSM Disorders; sub-BED, subthreshold BED; Sub-BN, subthreshold bulimia nervosa; TCI-R, Temperament and Character Inventory-Revised; UFED, unspecified feeding or eating disorder.

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anorexia nervosa, atypical anorexia, binge eating disorder, bulimia nervosa, OSFED, purging disorder, unspecified feeding or eating disorders

Key points

- The current study assessed the clinical significance and distinctiveness for purging disorder (PD)
- Our results showed that PD is a clinically significant disorder
- PD and most of the other eating disorders (EDs) differed on ED and general psychopathology measures
- The personality distinctions between PD and the other EDs were less pronounced

1 | INTRODUCTION

Purging disorder (PD) is an eating disorder (ED) characterised by recurrent purging behaviours (e.g., self-induced vomiting, misuse of laxatives or diuretics) which are employed to influence weight and/or body shape, in the absence of binge eating symptomology. The current Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association [APA], 2013) does not list PD as an official ED. Instead, PD is listed under Other Specified Feeding and Eating disorder (OSFED), which describes individuals who report clinically significant ED symptoms, who do not meet the diagnostic criteria for anorexia nervosa (AN), bulimia nervosa (BN) or binge eating disorder (BED). As a result of PD being subsumed under OSFED, the symptom dimensions of PD are poorly defined. Previous studies have been reluctant to use PD when describing their samples, meaning this patient group has often been misclassified as BN (Keel, 2007, 2019). Existing research comparing PD to other ED diagnoses (Smith et al., 2017) is scarce and has generally compared PD separately to AN, BN or BED, but not to other ED subtypes (e.g., OSFED or Unspecified Feeding or Eating Disorder [UFED]).

1.1 | How is purging disorder different from controls and other eating disorders?

1.1.1 | Differences in eating disorder and general psychopathology

A recent comprehensive meta-analysis, including 38 studies, compared PD to the DSM-5 (APA, 2013) ED diagnoses of AN, BN, BED and healthy controls. All participants were compared on indicators of illness course, as well as eating and general psychopathology symptoms (Smith et al., 2017). The findings from this review demonstrated that PD is a clinically significant ED, as evidenced by the significant differences between the PD group and controls. The review also highlighted the substantial comorbidity between PD and other mental health conditions, which were comparable to the other ED diagnoses. PD showed more similarities with AN and BED in terms of ED and general psychopathology but appeared to be less severe than BN on these measures. Of interest, overall, PD had slightly better prognostic outcomes in comparison to the other ED diagnoses. However, due to the small sample sizes, the authors were not able to assess differences between PD and the restrictive subtype of AN (AN-R) or the binge purging (AN-BP) subtype. This review was also limited by not comparing PD to other OSFED specifiers (i.e., Atypical AN) or UFED diagnoses. Overall, it remains to be seen where PD may lie on the severity spectrum in comparison to these OSFED categories and the official ED diagnoses of AN, BN and BED.

1.1.2 | Differences in personality

Research concerning the nature and distinctiveness of the personality profile associated with PD is varied. Studies employing continuous measures of personality traits (mainly impulsivity) have reported higher levels of impulsivity in BN compared to individuals with PD (Brown et al., 2011; Fink et al., 2009). Conversely, other studies reported no significant differences between the two groups (Keel et al., 2005; Riesco et al., 2018; Wade, 2007). A recent study by Davis et al. (2020) found that women with PD presented with significantly lower levels of negative urgency, a personality trait representing the tendency to act rashly when distressed, when compared to healthy controls and BN patients. However, no significant differences on other impulsive traits were found; indicating that negative urgency may be a

personality trait distinct to PD. Examining whether PD is characterised by other differences in personality traits and its heterogeneity itself is important, as discussed in a recently published study (Krug, Granero, et al., 2020). Such research may help to disentangle the inconsistencies evident within the existing literature and may provide important insights into the aetiology and maintenance of PD.

1.1.3 | Differences in treatment outcomes

The few studies that have considered treatment outcomes in PD, when compared with other EDs, suggest that PD has similar (relatively good) treatment outcomes to BN patients (MacDonald et al., 2017; MacDonald & Trottier, 2019; Tasca et al., 2012). However, consistent with other subthreshold EDs, PD groups demonstrate higher drop-out rates (Riesco et al., 2018) and a greater risk for ED chronicity (Fernández-Aranda et al., 2021). A study by our team, using a sample of 176 female patients diagnosed with OSFED (82 Atypical-AN, 57 PD and 37 subthreshold BN [Sub-BN]) found similar ED and general psychopathology symptoms and personality constellations at baseline and post-treatment for these OSFED diagnoses. A few significant differences however emerged across the OSFED groups, with PD showing a later age of onset and higher temperamental trait persistence, than Sub-BN and Atypical AN (Riesco et al., 2018).

For PD to be considered its own diagnostic entity within the forthcoming DSM, PD needs to be readily and reliably distinguishable from related disorders (e.g., BN). However, existing research comparing PD to other ED diagnoses (Smith et al., 2017) have focussed on a limited number of ED diagnoses, with typically small sample sizes, hindering our understanding of PD. Therefore, we aimed to advance the theoretical and clinical knowledge of PD, by concurrently comparing for the first time PD to a large clinical sample comprising all official ED subtypes (AN, BN and BED), several OSFED subtypes (Atypical AN and Unspecified Feeding or Eating Disorder [UFED]) and a control group.

1.2 | The current study

The current study assessed, for the first time, the clinical significance and distinctiveness of a large PD sample and compared this group to a wide range of ED diagnostic groups (AN-R, AN-BP, BN, BED, Atypical-AN and UFED) as well as a control group. We compared these groups in terms of ED symptomatology, general psychopathology and personality traits.

The clinical significance of PD would be evidenced by significant differences between the PD and the control group on the variables assessed, while the distinctiveness of PD would be supported by significant differences between PD and other ED diagnoses. Based on the review by Smith et al. (2017), we expected that PD would fall in the severity spectrum between AN and BN, but no hypotheses were made in terms of where PD would lie regarding Atypical AN and UFED, given that these diagnoses have previously only been compared to PD in a previous study (Riesco et al., 2018) published by our team.

The findings of the current study may allow researchers and clinicians to conceptualise PD more accurately in terms of its severity compared to other EDs, which in turn may aid in tailoring the best treatment modalities for this diagnostic group. This is significant given that there are currently no established treatment protocols developed specifically for PD.

2 | METHOD

2.1 | Sample

The sample comprised 3127 women diagnosed with an ED (246 PD, 465 AN-R, 327 AN-BP, 1436 BN, 360 BED, 177 atypical AN and 116 UFED) presenting consecutively for treatment at the ED Unit within a University Hospital in Spain. A control sample ($n = 822$) who were within the normal body mass index range (BMI: 18.5–24.9 kg/m^2) and reported no current or historical ED were used for comparison. ED patients were diagnosed according to DSM-IV-TR criteria (APA, 2000), and diagnoses were re-analysed and re-codified based on *post hoc* using DSM-5 criteria (APA, 2013). These re-analyses were based on core ED symptoms available from a previous semi-structured interview undertaken at intake.

Participants in the control group (all females) were recruited from the same university hospital setting to guarantee the equivalence of the geographical origin between study groups. The control criterion of 'no history of an ED' was applied to the control group. Lifetime and current history of ED in this group was assessed using a self-reported screening instrument with closed-ended questions addressing core features for the diagnosis of EDs based on DSM-5 criteria (APA, 2000, 2013).

The mean age for the ED sample was 27.80 years (SD = 9.56) and 22.43 years (SD = 5.62) for the control group. From an initial sample of 3154 ED patients, 16 patients meeting criteria for sub-BN (OSFED) and 11 patients meeting criteria for subthreshold BED (sub-BED

and OSFED) were excluded from the analyses because the number in both groups was too small to undertake meaningful comparisons.

We used the definition of PD currently outlined in the DSM-5 (APA, 2013) and most commonly used in the literature (Keel, 2007, 2019), which defines PD as (1) recurrent purging behaviours (e.g., self-induced vomiting, laxative misuse, etc.) employed to influence weight or shape, (2) an undue influence of weight or shape on self-evaluation and (3) with the absence of objectively large binge eating episodes. In addition, the diagnosis of PD required a BMI > 18.5 kg/m^2 to differentiate it from the purging AN subtype (AN-P) or AN-BP. To avoid a possible controversial overlap in the diagnosis of atypical AN presenting with purging behaviours and PD, in our study, the atypical AN group only included patients presenting criteria for AN but with a weight in the normal range, and who did not meet criteria for a diagnosis of PD outlined above.

It should be noted that part of the data has been presented in two previous publications (Krug, Granero, et al., 2020; Riesco et al., 2018). The study by Riesco et al. (2018) assessed a much smaller sample of 57 PD and other OSFED participants on baseline and post-treatment outcome data on ED symptoms, general psychopathology and personality. Conversely, the study by Krug, Granero, et al. (2020) assessed the natural grouping of a sample of 223 PD patients based on purging symptomatology and evaluated the derived classes (a) against each other and (b) to a control group on the same measures used in Riesco et al.'s (2018) study. This meant that the distinctiveness analyses to other ED subtypes in a considerably larger sample size, was the unique contribution of the current study. It is also worth noting that in the study by Krug, Granero, et al. (2020) only each of the PD clusters was compared to the control sample, but no comparisons of the overall PD sample and the controls on the assessed variables were presented in the manuscript.

2.2 | Measures

2.2.1 | Sociodemographic and clinical information

Participants were assessed on several demographics (age, education, living arrangements and employment). For the ED sample, clinical information (age of onset, duration of disorder and minimum and maximum [excluding pregnancies] weight and height) were assessed at intake. For the control sample, all weight and height measurements were self-reported. BMI was calculated using the formula weight (kg)/height (m)^2.

2.2.2 | Eating Disorder Inventory-2 (EDI-2; Garner, 1991, Spanish version; Garner, 1998)

The EDI-2 includes 91 items to assess ED symptoms, informing 11 subscales (drive for thinness, body dissatisfaction, bulimia, ineffectiveness, perfectionism, interpersonal distrust, interoceptive awareness, maturity fears, asceticism, impulse regulation and social insecurity) and a total score based on the sum of the individual subscales. Items are rated on a scale from 1 (never) to 6 (always). Internal consistency for the EDI subscales were good to excellent in our sample, ranging from 0.70 to 0.97.

2.2.3 | Temperament and Character Inventory-Revised (TCI-R; Cloninger, 1999, Spanish version; Gutiérrez-Zotes et al., 2004)

The TCI-R has 240 items and assesses seven personality dimensions: four temperamental factors (novelty seeking, harm avoidance, reward dependence and persistence) and three-character dimensions (self-directedness, cooperativeness and self-transcendence). Responses are rated on a 5-point Likert scale ranging from 'Definitely False' to 'Definitely True'. The Cronbach's alphas for the TCI-R scales were good to excellent and ranged from 0.79 to 0.91 in the current study sample.

2.2.4 | Symptom Checklist-Revised (SCL-90-R; Derogatis, 1990, Spanish version; Derogatis, 2002)

The SCL-90-R entails 90 questions and is structured on nine first-order dimensions: somatisation, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation and psychoticism. The SCL-90-R also comprises various summary indices, which include: (a) Global Severity Index (GSI) representing a summary score for overall psychological distress, (b) Positive Symptom Distress Index (PSDI) assessing the intensity of symptoms and (c) Positive Symptom Total (PST), which includes self-reported symptoms. Internal consistency for the SCL-90-R scales was excellent in our sample and ranged from 0.80 to 0.98.

2.3 | Procedure

All ED participants were first assessed during a structured face-to-face interview (for further information, see Fernández-Aranda & Turón, 1998). During

the interview, clinical data were assessed using the SCID-I (First et al., 2002) and from 2015 onwards the SCID-Clinical Version criteria (First et al., 2015). ED diagnoses were made using this information. All interviews were carried out by experienced psychologists. Patients also completed the above-mentioned self-report questionnaires. The control group filled in all measures using a self-report questionnaire. The Ethics Committee of our institution approved the current study, and informed consent was obtained from all participants.

2.4 | Statistical analysis

Statistical analyses were carried out using SPSS24. Comparison between the groups was carried out using Chi-square tests (χ^2) for categorical variables and analysis of variance (ANOVA) for continuous variables. Effect size was estimated with Cramer's-V for the χ^2 procedures (low-poor effect size was considered for C-$V < 0.10$, mild-moderate for C-$V > 10$ and high-large for C-$V > 0.30$; Cohen, 1988) and adjusted eta-square (η^2) for the ANOVA analyses (values of 0.06, 0.10 and 0.25 were interpreted as low-poor, mild-moderate and high-large effect size; Levine & Hullett, 2002). The increase in Type-I error due to multiple statistical comparisons was corrected with the Finner's method, a stepwise multiple test procedure aimed to adjust p-values controlling the Familywise Error Rate (FWER, defined as the probability that the statistical system makes at least k false rejections; Finner, 1993). Controlling the k-FWER assumes that a fixed number of $k - 1$ of erroneous rejections is tolerated, and where all the null hypotheses (H_0) are equal, controlling the FWER at level α is equivalent to the problem of combining p-values to obtain a single testing for H_0 which is at level α. In biomedical research area, the Finner's method is applied by adjusting the rejection criteria for each of the individual hypothesis fixing the FWER no higher than a certain pre-specified significance level at α-value.

3 | RESULTS

3.1 | Characteristics of the sample

Table 1 includes the sociodemographics of the controls, PD and other ED diagnostic groups. The PD sample was predominantly comprised of Spanish women who were single, with primary or secondary education levels, who were either students or unemployed. Mean age for the PD sample was 27.28 years (SD = 9.78). The average age of PD onset was 19.93 years (SD = 7.97), and the mean illness duration was 7.36 years (SD = 7.37).

All the global tests achieved statistical significance and effect sizes within the ranges mild-moderate (geographical origin, marital status and age) to high-large (education and employment status). Regarding the pairwise comparisons, the cells that achieved statistically significant results in the pairwise comparisons versus the PD group are highlighted with italic font and grey colour.

Table S1 outlines the significant differences on the sociodemographic variables between the PD, the other EDs and the control group. The PD group differed significantly on all sociodemographic variables from the control and the AN-R groups. The BED group was significantly older and more commonly married than the PD group, whereas the Atypical AN and AN-R individuals were younger, and the AN-R group was also more frequently single than the PD group. Finally, the AN-BP, BN and BED groups had higher unemployment rates compared to the PD group.

3.2 | Comparisons between the PD and the control sample (clinical significance)

Table 2 outlines the mean and standard deviation (*SD*) for the PD, the other ED groups and the control sample on clinical measures. All the global ANOVA tests achieved statistical significance and most effect sizes were into the range mild-moderate to large-high (except for the variables age of onset and the duration of the disorder, the frequency of laxative and diuretic use, EDI-2 perfectionism and the personality traits novelty seeking, reward dependence, persistence, cooperativeness and self-transcendence). The cells that achieved statistically significant results in the pairwise comparisons versus the PD condition are highlighted with italic font and grey colour. A visual representation of the findings can be seen in Figure 1.

Table S2 indicates which comparisons were significant. As can be seen from Table S2, the PD group scored significantly higher than the controls on all the EDI-2 and SCL-90-R scales. In terms of BMI, the PD sample presented with a higher current and lifetime maximum BMI, but not lifetime minimum BMI, when compared to the control group.

Finally, in terms of personality, the PD sample scored significantly higher than the controls on harm avoidance and self-transcendence but revealed lower scores on reward-dependence, self-directedness and cooperativeness. Novelty seeking, and persistence did not differ significantly between the PD and control groups.

TABLE 1 Distribution of the sociodemographics for the different eating disorder subtypes

		PD; *n=246*		AN-R; *n=465*		AN-BP; *n=327*		BN; *n=1,436*		BED; *n=360*		Atyp-AN; *n=177*		UFED; *n=116*		CG; *n=822*				
		n	%	*n*	%	*N*	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	χ^2	P	C-V
Origin	*Spain*	224	91.1%	*443*	*95.3%*	305	93.3%	1298	90.4%	334	92.8%	166	93.8%	101	87.1%	*811*	*98.7%*	68.9	**<.001***	**.132†**
	Immigrant	22	8.9%	*22*	*4.7%*	22	6.7%	138	9.6%	26	7.2%	11	6.2%	15	12.9%	*11*	*1.3%*			
Marital	*Single-widow*	190	77.2%	*404*	*86.9%*	270	82.6%	1071	74.6%	*178*	*49.4%*	145	82.4%	95	81.9%	*777*	*94.5%*	368.1	**<.001***	**.216†**
	Married-couple	37	15.0%	*45*	*9.7%*	44	13.5%	261	18.2%	*148*	*41.1%*	22	12.5%	14	12.1%	*34*	*4.1%*			
	Divorced-separated	19	7.7%	*16*	*3.4%*	13	4.0%	104	7.2%	*34*	*9.4%*	9	5.1%	7	6.0%	*11*	*1.3%*			
Education	*Primary*	108	43.9%	*164*	*35.3%*	135	41.3%	625	43.5%	175	48.6%	84	47.5%	53	45.7%	*10*	*1.2%*	697.8	**<.001***	**.300†**
	Secondary	109	44.3%	*193*	*41.5%*	144	44.0%	596	41.5%	133	36.9%	70	39.5%	45	38.8%	*742*	*90.3%*			
	University	29	11.8%	*108*	*23.2%*	48	14.7%	215	15.0%	52	14.4%	23	13.0%	18	15.5%	*70*	*8.5%*			
Occupation	*Unemployed*	111	45.1%	*256*	*55.1%*	*231*	*70.6%*	*916*	*63.8%*	*166*	*46.1%*	86	48.6%	48	41.4%	*40*	*4.9%*	778.8	**<.001***	**0.434†**
	Student	80	32.5%	*80*	*17.2%*	*48*	*14.7%*	*332*	*23.1%*	*159*	*44.2%*	40	22.6%	30	25.9%	*115*	*14.0%*			
	Employed	55	22.4%	*129*	*27.7%*	*48*	*14.7%*	*188*	*13.1%*	*35*	*9.7%*	51	28.8%	38	32.8%	*667*	*81.1%*			
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	F-stat	P	η^2
Age (years-old)		27.28	9.78	*24.93*	*8.41*	26.38	7.63	27.46	8.47	*36.54*	*11.51*	*24.63*	*8.84*	26.40	10.18	*22.43*	*5.62*	107.6	**<.001***	**.160†**

Abbreviations: AN–BP, Anorexia Nervosa Binge–Purging; AN–R, Anorexia Nervosa Restrictive; Atyp.AN, Atypical Anorexia Nervosa; BN, bulimia nervosa; BED, Binge Eating Disorder; CG, control group; C–V, Cramer's–V; PD, purging disorder; SD, standard deviation; UFED, Undefined Feeding or Eating Disorder; η^2, adjusted eta–squared.

[a]Bold: Significant comparison.

[b]Bold: Effect size within the mild–moderate to large–high range. Grey cell and italic font: significant pairwise comparison versus the PD group.

3.3 | Comparison between the PD sample and the other ED patients (distinctiveness)

In terms of distinctiveness, many significant statistical differences between the PD and the other EDs emerged, of which the most noteworthy ones are outlined below (Tables 2 and S2). Table S2 should be interpreted in terms of the different colours and not the *p*-values. The cells highlighted in grey outline the significant differences that have been obtained for the group comparisons.

With respect to *ED clinical variables*, PD revealed an older age of onset than BN, but a younger age of onset than BED. PD also presented with a longer duration of illness than AN-R and Atypical AN, but a shorter duration than BN and BED. Regarding inappropriate compensatory behaviours, PD revealed a higher frequency of vomiting episodes compared to all ED subtypes, except for BN where, PD reported a lower frequency of vomiting episodes than BN. The PD group also reported a higher frequency of laxative and diuretic misuse than AN-R, BED, Atypical AN and UFED. Furthermore, the PD group demonstrated higher weekly diuretic misuse than AN-BP and BN.

For the *BMI measures*, the PD group had a higher current/min and max BMI than the AN-R, AN-BP and Atypical AN groups, but presented with lower values on these BMIs than the BED group. For the current BMI, the values for the PD group were also lower than for the BN and UFED groups. There were non-significant differences in the max and min BMI values between the PD and the BN and UFED groups.

With regards to *ED symptomatology*, PD presented with higher scores than the AN-R, AN-BP, Atypical-AN and UFED groups for most of the EDI scales, with the following non-significant exceptions: (a) bulimia, interpersonal distrust and perfectionism for the AN-BP group, (b) maturity fears and perfectionism for the Atypical AN group and (c) body dissatisfaction, bulimia and maturity fears for UFED.

The PD group reported higher scores than BED on most EDI scales, with the exceptions of: (a) body dissatisfaction and bulimia (higher in the BED group) and (b) ineffectiveness and the total EDI-2 score, which revealed no significant differences between PD and BED. There were only two significant differences between PD and BN, with the BN group endorsing significantly higher values for the EDI-2 bulimia and the EDI-2 total scales.

In terms of *general psychopathology*, a similar pattern to the one obtained for the ED symptomatology emerged, with PD individuals again reporting higher values on almost all the SCL-90-R scales and summary scales than the other ED subtypes. However, we found the PD group presenting with similar scores on the SCL-90-R scales than the BN patients. Somatisation scores were an exception to this overall pattern, in that PD individuals scored higher than the BN group on this scale.

Finally, when considering *personality traits*, PD was characterised by high scores in harm avoidance, and very low scores in reward dependence, self-directedness and

TABLE 2 Distribution of the clinical measures for the different eating disorder subtypes

	PD; *n=246*		AN-R; *n=465*		AN-BP; *n=327*		BN; *n=1,436*		BED; *n=360*		Atyp-AN; *n=177*		UFED; *n=116*		CG; *n=822*				
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	F-stat	P	η^2
Onset of ED (years-old)	19.93	7.97	19.78	7.08	18.76	6.23	*18.83*	*6.99*	*24.28*	*11.27*	18.72	7.21	19.59	7.79	---	---	25.8	**<.001***	.047
Duration of ED (years)	7.36	7.37	*5.17*	*5.81*	7.57	6.42	*8.70*	*6.95*	*12.20*	*9.57*	*5.98*	*5.81*	6.23	5.83	---	---	40.4	**<.001***	.072
Weekly freq. of binges	0.00	0.00	0.00	0.00	*2.07*	*4.09*	*5.88*	*5.87*	*5.18*	*4.58*	0.27	0.96	0.63	2.14	---	---	175.6	**<.001***	**.252†**
Weekly freq. of vomits	5.64	7.12	*0.01*	*0.23*	4.93	7.08	6.29	8.03	*0.04*	*0.35*	*0.06*	*0.49*	*0.18*	*1.95*	---	---	110.4	**<.001***	**.175†**
Weekly freq. of laxatives	3.70	7.71	*0.22*	*1.19*	4.62	10.16	3.11	8.09	*0.45*	*2.40*	*0.22*	*1.39*	*0.12*	*0.92*	---	---	27.7	**<.001***	.051
Weekly freq. of diuretics	3.43	8.70	*0.26*	*1.87*	*1.42*	*5.52*	*1.86*	*5.86*	*0.61*	*2.44*	*0.56*	*3.19*	*0.16*	*0.96*	---	---	15.2	**<.001***	.028
BMI (current, kg/m^2)	22.45	3.75	*16.27*	*1.58*	*16.92*	*1.52*	*24.68*	*5.65*	*37.46*	*8.29*	*19.87*	*1.13*	*24.45*	*5.87*	*21.70*	*2.47*	766.2	**<.001***	**.576†**
BMI (maximum, kg/m^2)	27.42	6.05	*21.55*	*2.97*	*22.16*	*2.89*	28.07	6.11	*39.11*	*8.51*	*24.07*	*3.57*	27.15	6.16	*23.02*	*3.01*	461.3	**<.001***	**.450†**
BMI (minimum, kg/m^2)	19.65	2.96	*15.42*	*1.62*	*15.70*	*1.68*	19.77	2.90	*24.38*	*4.60*	*18.06*	*1.89*	20.19	3.47	19.85	2.03	412.4	**<.001***	**.423†**
EDI-2 Drive for thinness	15.80	4.40	*7.87*	*5.46*	*12.98*	*4.77*	15.92	3.41	*13.19*	*4.65*	*13.81*	*5.31*	*14.35*	*4.99*	*4.00*	*4.60*	656.3	**<.001***	**.538†**
EDI-2 Body dissatisfaction	18.11	6.19	*10.07*	*5.58*	*13.24*	*5.41*	18.86	5.36	*21.17*	*5.67*	*14.06*	*6.64*	17.15	6.69	*6.07*	*6.09*	501.9	**<.001***	**.471†**
EDI-2 Interoc. awareness	12.84	5.55	*7.12*	*5.25*	*11.00*	*4.56*	13.11	4.93	*11.21*	*5.97*	*9.93*	*5.12*	*10.32*	*5.55*	*2.39*	*3.05*	419.4	**<.001***	**.427†**
EDI-2 Bulimia	5.13	3.66	*1.19*	*1.66*	4.80	3.21	*10.08*	*3.74*	*10.01*	*3.98*	*2.98*	*3.07*	4.76	4.13	*1.00*	*1.79*	893.1	**<.001***	**.613†**
EDI-2 Interpersonal distrust	6.24	3.99	*5.14*	*3.75*	6.06	3.28	5.94	3.57	*5.03*	*4.24*	*4.91*	*3.52*	*5.29*	*4.43*	*2.32*	*2.65*	91.4	**<.001***	**.140†**
EDI-2 Ineffectiveness	11.81	5.98	*8.07*	*5.62*	*10.91*	*5.39*	12.21	5.50	11.61	6.16	*9.69*	*5.53*	*10.66*	*6.30*	*2.17*	*3.06*	309.8	**<.001***	**.355†**
EDI-2 Maturity fears	9.02	5.03	*7.09*	*4.42*	*8.22*	*4.27*	8.89	4.26	*7.29*	*4.91*	8.71	4.63	8.19	4.46	*4.66*	*3.37*	83.3	**<.001***	**.129†**
EDI-2 Perfectionism	6.24	3.55	*5.02*	*3.26*	5.84	3.38	6.09	3.18	*5.11*	*3.77*	6.18	3.49	*5.33*	*3.57*	*3.86*	*2.99*	40.8	**<.001***	.068
EDI-2 Impulse regulation	7.93	5.14	*4.10*	*4.07*	*6.95*	*4.58*	7.81	4.58	*6.02*	*5.38*	*6.02*	*4.36*	*5.99*	*4.66*	*1.60*	*2.44*	181.0	**<.001***	**.243†**
EDI-2 Ascetic	8.00	3.40	*4.81*	*3.20*	*7.02*	*2.93*	8.09	2.92	*7.31*	*3.27*	*6.30*	*3.41*	*7.19*	*3.72*	*2.19*	*2.04*	349.9	**<.001***	**.383†**
EDI-2 Social insecurity	8.20	4.22	*6.22*	*4.16*	*7.21*	*3.60*	8.17	3.77	*7.14*	*4.50*	*6.78*	*3.96*	*7.22*	*4.25*	*2.37*	*2.69*	195.6	**<.001***	**.258†**
EDI-2 Total score	109.65	31.91	*67.09*	*33.84*	*94.22*	*29.80*	*115.17*	*30.21*	105.24	32.59	*89.03*	*31.98*	*96.86*	*35.50*	*32.81*	*21.97*	648.4	**<.001***	**.535†**
SCL-90R Somatization	2.04	0.75	*1.34*	*0.76*	*1.84*	*0.67*	*1.94*	*0.66*	*1.88*	*0.77*	*1.66*	*0.73*	*1.58*	*0.76*	*0.68*	*0.53*	309.9	**<.001***	**.355†**
SCL-90R Obsessive/comp.	2.01	0.68	*1.46*	*0.71*	*1.82*	*0.65*	2.07	0.60	*1.87*	*0.76*	*1.80*	*0.68*	*1.83*	*0.72*	*0.86*	*0.59*	294.4	**<.001***	**.343†**
SCL-90R Interp. sensitivity	2.16	0.74	*1.61*	*0.79*	*1.96*	*0.69*	2.20	0.63	*2.04*	*0.85*	*1.89*	*0.70*	2.07	0.82	*0.78*	*0.66*	342.4	**<.001***	**.378†**
SCL-90R Depressive	2.38	0.72	*1.88*	*0.82*	*2.25*	*0.69*	2.41	0.62	*2.23*	*0.78*	*2.07*	*0.76*	*2.08*	*0.82*	*0.79*	*0.61*	459.8	**<.001***	**.450†**
	PD; *n=246*		AN-R; *n=465*		AN-BP; *n=327*		BN; *n=1,436*		BED; *n=360*		Atyp-AN; *n=177*		UFED; *n=116*		CG; *n=822*				
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	F-stat	P	η^2
SCL-90R Anxiety	1.89	0.77	*1.36*	*0.75*	1.79	0.66	1.83	0.63	*1.53*	*0.77*	*1.61*	*0.73*	*1.52*	*0.77*	*0.63*	*0.54*	276.4	**<.001***	**.329†**
SCL-90R Hostility	1.53	0.82	*1.08*	*0.73*	*1.40*	*0.74*	1.49	0.74	*1.32*	*0.89*	*1.31*	*0.74*	*1.29*	*0.84*	*0.48*	*0.52*	162.3	**<.001***	**.224†**
SCL-90R Phobic anxiety	1.17	0.81	*0.73*	*0.68*	*1.06*	*0.66*	1.19	0.69	*0.95*	*0.76*	*0.86*	*0.66*	*0.93*	*0.72*	*0.20*	*0.35*	195.4	**<.001***	**.258†**
SCL-90R Paranoid	1.58	0.71	*1.20*	*0.70*	*1.46*	*0.64*	1.57	0.60	*1.45*	*0.79*	*1.35*	*0.67*	1.45	0.79	*0.66*	*0.59*	164.0	**<.001***	**.226†**
SCL-90R Psychotic	1.46	0.69	*1.03*	*0.61*	*1.36*	*0.54*	1.46	0.54	*1.24*	*0.65*	*1.22*	*0.59*	*1.23*	*0.69*	*0.35*	*0.41*	333.7	**<.001***	**.372†**
SCL-90R GSI score	1.91	0.60	*1.38*	*0.64*	*1.76*	*0.56*	1.90	0.52	*1.71*	*0.62*	*1.62*	*0.59*	*1.64*	*0.65*	*0.63*	*0.45*	448.6	**<.001***	**.443†**
SCL-90R PST score	67.97	13.61	*54.76*	*16.18*	*63.87*	*13.20*	67.14	11.53	*62.35*	*14.43*	*61.86*	*14.47*	*63.05*	*17.48*	*34.66*	*18.05*	421.8	**<.001***	**.428†**
SCL-90R PSDI score	2.44	0.47	*2.08*	*0.51*	*2.36*	*0.40*	2.46	0.40	2.39	0.50	*2.25*	*0.45*	*2.25*	*0.47*	*1.52*	*0.39*	402.3	**<.001***	**.417†**
TCI-R Novelty seeking	101.12	13.80	*93.85*	*11.63*	*99.07*	*12.57*	*103.98*	*12.13*	102.21	14.62	*96.90*	*11.62*	98.75	12.44	99.87	10.95	40.7	**<.001***	.067
TCI-R Harm avoidance	119.98	16.45	*111.24*	*15.96*	*114.83*	*14.63*	119.02	14.96	120.28	17.21	*115.28*	*17.55*	116.68	15.49	*99.82*	*14.45*	137.9	**<.001***	**.197†**
TCI-R Reward dependence	99.06	13.95	*101.80*	*12.77*	99.13	12.13	*102.05*	*11.43*	*104.81*	*15.05*	*104.99*	*12.61*	*101.80*	*14.21*	*105.70*	*11.90*	17.1	**<.001***	.029
TCI-R Persistence	111.97	19.10	*114.83*	*15.72*	113.10	15.36	*106.76*	*15.23*	*102.68*	*18.98*	114.77	16.83	111.15	16.48	113.31	14.55	35.3	**<.001***	.059
TCI-R Self-directedness	113.88	15.72	*130.98*	*17.02*	*121.21*	*14.87*	*111.16*	*14.56*	114.11	17.96	*121.28*	*16.94*	*120.04*	*19.20*	*143.17*	*14.83*	360.1	**<.001***	**.390†**
TCI-R Cooperativeness	132.86	13.21	*137.10*	*12.47*	133.89	11.46	131.95	11.55	134.23	15.88	134.99	11.78	134.03	13.90	*138.13*	*10.84*	23.4	**<.001***	.040
TCI-R Self-Transcendence	65.76	12.32	*61.74*	*11.04*	65.91	11.98	65.16	10.95	64.59	13.89	64.85	12.40	64.36	15.03	*63.79*	*13.10*	5.5	**<.001***	.010

Abbreviations: AN–BP, Anorexia Nervosa Binge–Purging; AN–R, Anorexia Nervosa Restrictive; Atyp.AN, Atypical Anorexia Nervosa; BN, Bulimia Nervosa; BED, Binge Eating Disorder; CG, control group; C-V, Cramer's–V; PD, purging disorder; SD, standard deviation; UFED, Undefined Feeding or Eating Disorder; η^2, adjusted eta–squared.

[a]Bold: significant comparison.

[b]Bold: effect size within the mild–moderate to large–high range. Grey colour cell and italic font: significant pairwise comparison versus the PD group.

cooperativeness. The distribution of the TCI-R scores suggested potential group-patterns across ED subtypes with the following ED subtypes demonstrating similar personality profiles: (a) PD, BN and BED, (b) AN-BP, AN-Atypical and UFED and (c) AN-R (this group reported the most varied personality constellation compared to the other two groups [(a) and (b)]). Comparisons within group (a) PD, BN and BED, indicated that PD showed lower reward dependence and novelty seeking, but higher persistence scores than BN and BED. Finally, patients with PD scored higher than BN patients, but lower than BED patients on the self-directedness scale.

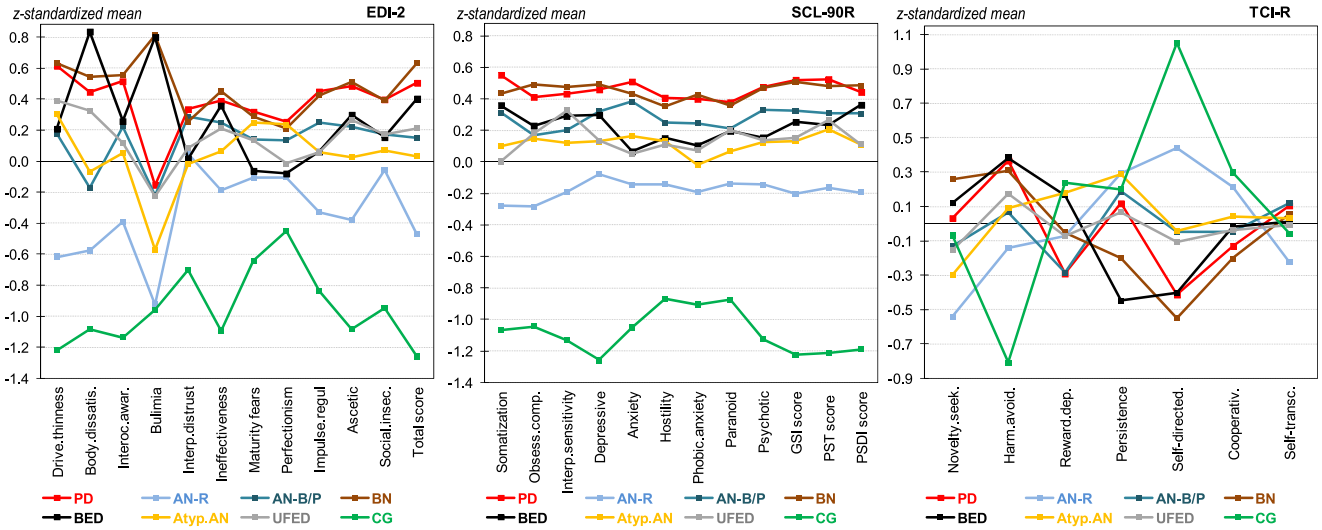

FIGURE 1 A visual representation of the main clinical significance (difference with a control) and distinctiveness (difference with other eating disorder) analyses. AN-BP, anorexia nervosa binge-purging; AN-R, anorexia restrictive nervosa; Atyp-AN, atypical anorexia nervosa; BED, binge eating disorder; BN, bulimia nervosa; CG, control group; PD, purging disorder; UFED, undefined feeding or eating disorder [Colour figure can be viewed at wileyonlinelibrary.com]

Table S3 also includes the results obtained from the analysis of covariance (ANCOVA) adjusted by the duration of the illness. These additional analyses were undertaken to guarantee the lack of bias in the estimation of the differences between the diagnostic groups due the potential confounding effects of this covariate. Results are comparable to the crude results obtained without the adjustment.

4 | DISCUSSION

The current study assessed for the first time in a large treatment seeking PD sample, the clinical significance of PD (as compared to a control group) and the distinctiveness of PD from a range of other EDs (comparison with AN-R, AN-BP, BN, BED, Atypical-AN and UFED). Our findings generally supported our hypothesis that PD is a clinically significant disorder, as evidenced by the significant differences between the PD group and control group on ED symptoms, general psychopathology and personality dimensions. With respect to the distinctiveness of PD from other EDs, we observed numerous differences between PD and most of the other ED diagnoses for ED and general psychopathology. However, the personality distinctions between PD and the other EDs were less pronounced, and more complex to interpret. Finally, a range of important significant differences were also observed between PD and BN in the assessed variables. However, these distinctions from BN did not seem to equate to lower severity for PD. Overall the current findings seem to suggest that PD is more comparable to BN than it is to AN and the other ED subtypes assessed in the current study.

4.1 | Differences between the PD and the control samples

The PD disorder emerged as a clinically significant ED, as evidenced by significantly higher scores than the controls on key ED indices (i.e., drive for thinness, bulimia and body dissatisfaction, etc.) and general psychopathology (i.e., somatisation, depression, anxiety, etc.). These findings are consistent with previous research reporting elevated general and ED psychopathology for PD in comparison to controls (Keel et al., 2011; Keel & Striegel-Moore, 2009; Wade, 2007). Such findings support the validity and diagnostic utility of PD as a clinically significant ED.

In terms of our personality variables, the PD group presented with a more detrimental personality constellation (high scores in harm avoidance, and very low scores in reward dependence, self-directedness and cooperativeness) than the control group. The only non-significant differences between the PD and the control group were obtained for novelty-seeking and persistence. This finding contradicts previous PD research, which reported higher levels of impulsivity within PD as compared to the controls (e.g., Davis et al., 2020; Smith et al., 2017). This inconsistent finding may be partially because the control sample was younger than the PD

group, as younger age tends to be associated with higher novelty seeking within non-clinical samples (Trouillet & Gana, 2008).

4.2 | Differences between PD and other ED subtypes

In terms of our distinctiveness analyses, we found that the PD group had a later age of onset than BN, but a younger age of onset than BED. The duration of PD was longer than for AN-R and Atypical AN, but shorter than BN and BED. These findings are in partial agreement with the review by Smith et al. (2017), which like our findings, found that PD presented with a later age of onset than BN (this is also consistent with data from Glazer et al. [2019] published after the Smith et al., 2017 meta-analysis). However, contradicting our findings, the Smith et al. (2017) review revealed no significant differences between PD and BED in age of onset. Our finding that PD presented with a shorter duration than BN and BED also only partially coincides with the Smith et al. (2017) findings, which found a shorter duration of illness for PD than BED, but a similar duration for PD, AN and BN. The current finding also contrasts the results from Koch et al. (2013) who found a longer duration of illness in PD compared to both BN-P and AN-BP. Our findings may be explained by the fact that the presence of objective binge eating episodes, which are present in both BN and BED, are related to a more chronic illness course (Fernández-Aranda et al., 2021). This could support the longer illness duration finding for the BN and BED groups in our study. Finally, our results regarding the BMI variables are in line with previous studies (Keel et al., 2011; Koch et al., 2013), reporting that PD appears to lie in the middle of the weight spectrum, with AN at the lower and BED at the higher end of this continuum.

For the questionnaire-based measures, our findings revealed that patients with PD scored higher than most of the other ED groups (AN-R, AN-BP, BED, Atypical AN and UFED) on most of the EDI-2 and the SCL-90 subscales. This is line with Smith et al.'s (2017) PD meta-analysis findings. In our study, the most pronounced differences were found between AN-R and PD, followed by AN-BP and Atypical AN. This finding is in partial agreement with the findings of Tasca et al.'s (2012) study. Their main findings revealed that like our findings, patients with PD presented with higher scores than AN-R in ED and general psychopathology. However, contradicting our findings, the study by Tasca et al. (2012) revealed similar scores between PD and AN-BP on the assessed variables.

In line with our findings, previous AN studies have shown that AN-BP patients presented with elevated ED symptoms and comorbidity compared to AN-R (Oliosi & Dalle Grave, 2003; Reas & Ro, 2018), demonstrating a higher illness severity within the AN-BP group due to the low body weight and the combination with binge eating/purging behaviours. However, PD studies have mainly used BN as a comparison group, and very few studies have differentiated between AN-R and AN-BP (Smith et al., 2017; Tasca et al., 2012). Future research should further disentangle the differences between PD, AN-BP, AN-P and AN-R.

Except for the EDI-2 bulimia, which serves as a concurrent validation of the purging interview assessment, the EDI-2 total and the SCL-90-R somatisation scale, BN revealed no other significant differences from the PD group on the ED and general psychopathology subscales. This finding is in line with other studies which have reported similar levels of overall eating and general psychopathology for PD and BN women (Goldschmidt et al., 2016; Keel, 2007; Keel et al., 2001; Tasca et al., 2012; Wade, 2007). Keel et al. (2013) revealed in a mixture modelling analysis study, that most PD cases were incorporated with BN and AN-BP cases in a class distinguished by purging, weight phobia and a higher level of comorbidity (Keel et al., 2013).

Finally, our finding that the PD sample displayed more non-vomiting purging behaviours than the BN group, is in accordance with a study by Wade (2007), with the only difference that in our study this behaviour was diuretic use, whereas in Wade's study it was laxative use. Given that PD patients were less likely to vomit in our sample, it is possible that patients with PD may use a wider variety of purging methods because, unlike BN, purging occurs in the absence of large binge episodes. Accordingly, our previous cluster analysis of PD patients (Krug, Granero, et al., 2020) showed that PD patients used a range of different purging methods (vomits, laxative and diuretic use). It is also worth outlining that some individuals purge in the absence of objective or subjective binge eating behaviours (SBEs). This is commonly known as non-compensatory purging (NCP). Accordingly, Liebman et al. (2020) reported approximately 47% of individuals with PD endorsed NCP and treatment outcomes in individuals with NCP were worse, compared with individuals with compensatory PD. However, in the current study NCP methods were not assessed. Upcoming research would benefit from comparing the clinical significance and distinctiveness of individuals with NCP to individuals with compensatory PD, in terms of ED pathology, general psychopathology, personality traits and treatment outcomes.

There are also a few other noteworthy variations in our findings. Firstly, the BN and BED individuals scored higher than the patients with PD on the EDI-2 bulimia subscale and BED also presented with a higher body dissatisfaction score than PD. These findings are again only partially in agreement with the Smith et al. (2017) review, which also found PD patients to present with lower purging symptoms than BN. However, contradicting our findings, the review did not reveal significant differences in body dissatisfaction between PD and BED.

Secondly, in our study the PD sample presented with significantly higher somatisation values than the BN sample. This finding might be attributable to the fact that women with PD may experience satiety signals more strongly than those with BN. This finding aligns with the results of a study by Keel et al. (2018), which examined postprandial PYY response to a fixed meal and found it to be significantly greater in PD compared to both BN and control participants. In addition, PYY responses predicted differences in postprandial reports of gastrointestinal distress. More studies are needed to clarify the feeling of fullness and somatisation levels in PD and other ED patients.

Finally, for our personality findings, a complex pattern of results emerged. With respect to our main aim, which was to investigate how personality profiles may differ between the PD and the other ED diagnoses, our PD group seemed to present with a more maladaptive personality profile than most of the other ED groups. A noteworthy finding was that novelty seeking, was significantly lower for the PD group than the BN group, but not the BED group. This finding supports previous studies which have also found lower levels of impulsivity in PD compared to BN (Keel et al., 2001). However, a follow-up study by the same group (Keel et al., 2005) obtained no significant differences between BN and PD on measures of impulsivity. Future research assessing a range of personality traits, in PD and other ED subtypes, including longitudinal studies, are warranted to disentangle these inconsistent findings.

4.3 | Theoretical implications: Where does PD lie on the severity spectrum?

Our findings contradict the findings from Smith's et al. (2017) meta-analyses, which concluded that PD sits on the midpoint of the severity continuum for eating and general psychopathology symptoms, with BN located at the high end and normal eating behaviours at the low end of this continuum. Instead, our findings suggest that PD seems to be distinctive from BN on a range of sociodemographic (i.e., higher employment) and clinical (i.e., lower current BMI, older age of onset, shorter duration of the illness and less purging but more vomiting behaviours) variables as well as some EDI-2, SCL-90-R and TCI-R subscales. However, these differences did not indicate lower severity for PD. Our findings may therefore suggest that PD should be placed more towards the endpoint, rather than the midpoint of the severity continuum.

A crucial difference between PD and BN is that BN patients report the occurrence of large, out-of-control binge-eating episodes and a greater loss of control over food (APA, 2013). Our findings therefore query the extent to which these criteria for binge eating might act as indicators of severity. Number of purging methods (one method vs. several methods) may be an important severity indicator which has rarely been assessed in PD. A recent study by our team (Krug, Granero, et al., 2020) identified three distinct PD clusters (Cluster 1. Vomiting only; Cluster 2. Vomiting and laxative misuse and Cluster 3. Vomiting, laxatives and diuretic misuse), with Cluster 3, revealing the most severe profile in terms of ED and general psychopathology. Future studies would benefit from assessing transdiagnostic severity indicators such as number of purging methods (Edler et al., 2007), weight and shape concerns (Grilo et al., 2015), drive for thinness (Krug, Binh Dang, et al., 2020) and the duration of the disorder (Fernández-Aranda et al., 2021) in PD. These severity indicators are more clinically informative of severity in BN than purging frequency, and therefore may be relevant to our understanding of severity in PD.

Another noteworthy conclusion from our findings is that this is the first study that has compared PD to other OSFED types, specifically atypical AN. These comparisons are extremely valuable because there is potential overlap between these OSFED (i.e., normal weight range), but there are currently no rules for distinguishing between them in the DSM. The current findings provide a considerable amount of evidence that PD and atypical AN differ from each other in ways that mirror how BN and atypical AN differ from one another. Specifically, the current findings showed that atypical AN seemed to be more comparable to both AN subtypes (AN-R and AN-BP) than to BN and PD. Future studies assessing specific OSFED subtypes should therefore aim to include both established EDs (AN, BN and BED) as well as other OSFED and UFED subtypes.

4.4 | Strengths and limitations

This study had several methodological and clinical strengths. Firstly, data was drawn from a large clinical dataset ascertained from a tertiary ED treatment centre

comprising a large sample size of all official EDs (AN, BN and BED) and a range of OSFEDs (PD and Atypical AN), UFED and a control group.

Secondly, covering the ED spectrum in addition to a control condition allowed us to assess both, how the PD subtype differed from the controls and the other ED groups on ED and general psychopathology, and personality. Furthermore, these analyses also provided us with the opportunity to examine how the pairwise differences between the PD and the control group were higher or lower on the assessed variables than the differences obtained for the other ED subgroups.

Thirdly, the current study employed structured interviewing to assess the clinical presentation of the EDs as well as multiple continuous measures of ED symptoms, general psychopathology and personality pathology with good psychometric properties. Such methodological strengths increased the power for our analyses and reduced the risk of Type II errors.

Despite these strengths, the study was also impacted by some noteworthy limitations.

Firstly, Keel (2019) reported that PD affects 2.5%–4.8% of adolescent females in population-based samples, but PD remains relatively rare in treatment settings. Therefore, the current data forms part of a very hard to obtain sample and might not represent the experience of PD in the general population.

Secondly, our findings are based on cross-sectional data, and therefore preclude inferences about the longitudinal effects of the current findings in terms of treatment response or trajectory. We therefore also did not have data on cross-over occurrence between BN and PD, which would have been of specific interest for the current study.

Thirdly, we were not able to assess SBEs, which are described as consuming a normal or small amount of food, although subjectively considered as large by the individual, and loss of control over eating and/or purging. Both SBEs and loss of control over eating have been associated with heightened distress in PD samples (Forney et al., 2014; Goldschmidt et al., 2016; Keel, 2019). Future studies would benefit from applying validated assessments, such as the Eating Disorder Examination (EDE; Fairburn & Cooper, 1993) interview, to assess these important precursors (subjective vs. objective vs. NCP) to purging behaviour.

This discussion of including SBEs as a diagnostic criterion is noteworthy given the fact that the International Classification of Disease and Related Health problems (ICD)-11 (World Health Organization, 2019), unlike the DSM-5 (APA, 2013), diagnostic guidelines include separate SBEs for BN and BED. Given that SBEs have been found to be present in PD (e.g., Forney et al., 2014; Goldschmidt et al., 2016) and AN-BP (Dalle Grave et al., 2012) and may also be part of other OSFED (e.g., sub-BED and BN and atypical AN) and UFED subtypes, it would be interesting to see if future DSM and ICED versions would also include SBEs for these other EDs.

Fourth, it is important to note that our findings of clinical significance were limited to the baseline assessments undertaken in the current study. A more holistic understanding of clinical significance including long terms course of the illness, outcome and treatment response are needed to have clearer understanding of clinical significance (Kendell & Jablensky, 2003).

4.5 | Clinical implications

Our findings have important clinical implications. Firstly, PD is a clinically significant ED diagnosis that warrants intervention. Secondly, there appear to be meaningful differences in severity between PD and most other EDs, but to a lesser extent for BN. Our findings suggest that somatisation due to increased experiences of fullness after eating, seems to be elevated in patients with PD. To tackle this problem for individuals with PD, clinicians could utilise the mood intolerance module from the enhanced cognitive behaviour treatment (CBT-E) by Fairburn et al. (2015). This module provides strategies to tolerate and accept feelings of fullness and related anxiety. Exposure and response prevention techniques may also be helpful to prevent purging after eating. Such approaches may assist PD individuals to learn to reinterpret bodily sensations and satiety signals as a normal part of the digestive process. Finally, given, that treatment outcome studies for PD are currently limited (e.g., Riesco et al., 2018; Tasca et al., 2012), and evidence-based treatments are non-existent, clinicians should carefully construct a detailed case conceptualisation for patients with PD. This may help to provide continuous prudent assessment of specific PD features and may also be the best approach to distinguish PD from other ED subtypes.

5 | CONCLUSIONS

To our knowledge, this is the first study to compare the clinical significance and distinctiveness of PD to other EDs, in terms of ED features, general psychopathology and personality traits. Our findings revealed that PD is a clinically significant ED diagnosis, which is mainly distinct from the other ED diagnosis. Specifically, our distinctiveness analyses showed that PD presented with

more severe ED and general psychopathology and a more maladaptive personality constellation than AN (AN-R and AN-BP), Atypical AN, UFED and BED. PD and BN were also distinct on a range of these measures, but these differences did not suggest that PD is less severe than BN. Overall, our findings might suggest that PD may lie together with BN towards the endpoint, rather than the midpoint of the severity continuum of psychopathology. Future studies would benefit from focussing on assessing possible similarities and differences in the precursors and consequences of purging in PD, BN, AN-BP and AN-P and other ED subtypes (e.g., UFED) experiencing purging behaviours. Comprehending the functional nature of purging behaviours in PD may improve its characterisation in future diagnostic systems, as well as its prevention and intervention modalities.

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CONFLICT OF INTEREST

FFA received consultancy honoraria from Novo Nordisk and editorial honoraria as EIC from Wiley. The rest of the authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

Data may be available if a reasonable request is provided.

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