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# UPPS-P impulsivity and borderline personality disorder traits in a community sample

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#### ABSTRACT

Impulsivity is seen as a key feature of borderline personality disorder (BPD) with rash action due to emotional states (or urgency) being prominent. Previous studies examining both positive and negative urgency have been equivocal as to which is most prominent. Further, issue due to the possible influence of impression management and self-deceptive enhancement have not been considered. Self-reported impulsivity was assessed as a function of traits of BPD in a large (>400) community sample. Zero-order correlations showed all scales of the UPPS-P were related to BPD traits. However, regression analysis showed that only impulsivity related to high negative emotions (Negative Urgency) was uniquely predictive of BPD traits. While both impression management and self-deceptive enhancement were negatively related to BPD traits, they did not influence the relationship between impulsivity and BPD. No major gender differences were noted. The results differ from a previous report that suggested that BPD traits were related to Positive Urgency and support that BPD is characterised by rash actions when feeling negative emotions.

#### 1. Introduction

A wealth of studies has demonstrated that patients with borderline personality disorder (BPD) report high rates of impulsive behaviours (e. g., Berlin et al., 2005; Kunert et al., 2003; Links et al., 1999). However, the concept of impulsivity is multidimensional, so a more germane question is "which aspects of impulsivity are associated with BPD?".

The UPPS model and measurement system (Whiteside and Lynam, 2001), updated to the UPPS-P model (Cyders et al., 2007), parses impulsivity into five related dimensions: Negative Urgency is acting rashly when feeling negative emotions, while Positive Urgency is acting rashly when feeling positive emotions, (lack of) Premeditation is acting without thinking about one's actions, (lack of) Perseverance is an inability to remain focused on an action, and Sensation Seeking is a tendency to want novel and exciting experiences.

The UPPS-P has been used to examine impulsivity in BPD. Jacob et al. (2010) found large differences between BPD patients and controls for the dimension of Urgency, with more moderate increases in (lack of) Perseverance and (lack of) Premeditation, but no difference in Sensation Seeking. Such results have been replicated by Bøen et al. (2015),

Linhartová et al. (2020) and Mungo et al. (2025). A recent study (Martin et al., 2025) is in broad agreement but also shows a positive relationship to Sensation Seeking. However, Martin (2025) did not find any effect of Negative Urgency and even found less Positive Urgency for their patients with BPD, though we note the small sample size of this group.

Studies of BPD traits tell a similar story (Peters et al., 2013; Tragesser and Robinson, 2009). The study of Fossati et al. (2014) is in broad agreement but failed to show any effect of (lack of) Perseverance or (lack of) Premeditation. This latter study also showed that, in an adolescent sample, Positive Urgency appeared more important in BPD than Negative Urgency as when the variance due to Negative Urgency was removed, Positive Urgency was still a good predictor of BPD traits, while the opposite was not true. They suggest that "Positive Urgency may represent the component of impulsivity that is uniquely altered in adolescents with prominent BPD features". However, Peters et al. (2013) show the opposite result in a young adult sample, with Positive Urgency failing to make any contribution to the prediction of BPD traits when in a regression that contained Negative Urgency (which was highly predictive of BPD). Thus, the relative importance of Negative and Positive Urgency is not yet established.

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It is important to understand the roles of impulsivity in BPD from the viewpoint of therapy and intervention. Clearly, the form of intervention given would be different for a person who acts due to high traits of sensation seeking than for a person with poor perseverance. Likewise, the target of intervention might be different for someone who acts rashly under the conditions of high positive emotion than someone who acts rashly when suffering high negative emotion. Indeed, interventions such as dialectic behaviour therapy (DBT: Linehan, 1993) relies heavily on reducing impulsive and rash behaviour when the person is distressed (see also Kramer et al., 2022; Martin and Del-Monte, 2022).

Gender differences in the expression and treatment of BPD is a topic of great interest (Dehlbom et al., 2022; Bozzatello et al., 2024; Johnson et al., 2003; Silberschmidt et al., 2015). However, there have been few studies of gender differences in the relationship between impulsivity and BPD. Sher et al. (2019), using the Barrett Impulsivity scale, demonstrated greater levels of impulsivity in BPD patients, and greater impulsivity in men, but there was no interaction. This suggests that the expression of BPD in terms of impulsivity is the same for both genders.

The assessment of personality, and personality disorders, relies heavily on the response of the person in clinical interview or on their self-report on questionnaire measures. As such, these self-reports may be subject to issues of impression management (IM-deliberate falsification to appear in a particular manner, often likeable, honest, etc.) and selfdeceptive enhancement (SDE - honest but inflated self-perceptions often due to lack of insight). IM and SDE may be apparent in both the measures of BPD and in the measure of impulsivity and thus could enhance apparent correlations between these due to this common method variance. Whether this actually occurs is less clear. These issues have been much debated in the general field of personality and personality disorder (Burchett et al., 2023; Li and Bagger, 2006; Sharpe et al., 2023) with only limited evidence that they distort response profiles. Nevertheless, they recommend that the issues of IM an SDE (as well as possible invalid responding) are addressed in such research. Data relating specifically to BPD is sparse, but theoretically relevant. BPD involves unstable self-image and interpersonal sensitivity, which could influence both IM and SDE scores. Whyte et al. (2006) examined a range of personality disorders in a forensic sample using the Balanced Inventory of Desirable Responding (BIDR: Paulhus, 1998). They found that total BIDR scores were negatively correlated with BPD measured either by self-report questionnaire or by clinical interview.

The present study therefore aimed to examine these contradictory results using the UPPS-P model of impulsivity in a broader community sample with a sufficiently large sample size to be able address possible differences related to gender in the relationship between impulsivity and traits of BPD. Unlike the previous studies on this issue, the present study also examined if IM and SDE are related to BPD (and UPPS-P) and accounted for their influence on the relationship between BPD and impulsivity.

#### 2. Methods

#### 2.1. Participants

Recruitment of participants was via online social media channels and posters placed around the host university advertising the study without reference to BPD or other mental health problems. The data presented here is part of a wider study of impulsivity and individual differences that included behavioural measures of impulsivity and other measures of individual differences. Community participants were eligible to enter a prize draw while psychology students received participation credit.

A total of 510 participants completed the study. After removals due to failed attention checks, age range, and not reporting being either male or female, a total of 429 datasets remained for analysis (221 men, 208 women). The mean age was 29.0 years (SD = 10.1, range 18–59). Most participants reported their ethnic group as White (81.9 %) while 10.1 % reported their ethnicity as Asian, 3.6 % as Mixed, 1.2 % as Black, 2.2 %

as other and 1.0 % preferred not to say. The host university granted ethical permission for the study (Ref. 2022-5426-4655).

#### 2.2. Materials

## 2.2.1. McLean screening instrument for borderline personality disorder (MSI-BPD)

The MSI-BPD (Zanarini et al., 2003) has been shown to have strong correlations to other BPD screening tools and dimensional measures of BPD (Gardner and Qualter, 2009). It consists of 10 items answered 'yes' or 'no'. Each question is related to one of the criteria for DSM-IV, with the first eight criteria being covered by a single question and the last by two questions. The MSI-BPD showed good reliability in the present sample (alpha = .81). An attention check question was added where the person was told to pick a particular response.

#### 2.2.2. UPPS-P

The UPPS-P (Lynam et al., 2006) has 59 items across five domains of impulsivity (10–14 items per scale). Participants respond to each item on a Likert scale ( $0 = agree\ strongly$ ,  $1 = agree\ some$ ,  $2 = disagree\ some$  and  $3 = disagree\ strongly$ ). All the scales showed good reliability (Chronbach's alpha) in the present sample (Negative Urgency = .94; Positive Urgency = .97; (lack of) Premeditation = .94; (lack of) Perseverance = .89; Sensation Seeking = .89). An attention check question was added where the person was told to pick a particular response.

#### 2.2.3. BIDR - 16

The BIDR-16 (Hart et al., 2015) is a short version of the 40-item BIDR (Paulhus, 1998). The measure consists of 16 items which are rated on a 7-point scale ranging from 1 indicating "not true" and 7 indicating "very true" with 8-items each for the IM and SDE scales. Both scales showed acceptable reliability in the present sample (alphas = .74 and .79). An attention check question was added where the person was told to pick a particular response.

#### 3. Results

Descriptive statistics are shown in Table 1. No gender differences in the MSI-BPD or the UPPS-P scales were significant. However, women showed greater levels of IM on the BIDR.

The zero-order correlations are shown in Table 1. All measures of impulsivity were significantly related to MSI-BPD scores in both the total sample, and men and women analysed separately. The correlation of Negative Urgency with MSI-BPD was larger in women than men (.69 vs .49: z=3.17, p<0.001), as was the correlation of (lack of) Perseverance with MSI-BPD (.45 vs .26: z=2.27, p=0.02). No other gender differences occurred. For the BIDR, both IM and SDE were negatively correlated with MSI-BPD.

A hierarchical linear regression examined the unique aspects of each UPPS-P scale to traits of BPD (see Table 2 – Analysis 1). At the first stage, the demographic variables of age and gender (men = 1, women = 2) were entered. This did not provide a significant model.

The addition of the UPPS-P scales (z-scored) at step two provided a significant model accounting for 36 % of the variance. Examination of the standardised beta weights showed Negative Urgency was strongly positively predictive of BPD score, while (lack of) Premeditation was negatively predictive of BPD score. None of the other UPPS-P scales were predictive, including Positive Urgency despite its strong zero-order correlation with BPD score.

To examine whether the relationship between impulsivity and BPD was the same for men and women, the interaction term between gender and the z-scored UPPS-P scales were calculated and entered into the model at Stage three. This provided a significant increase in the model's fit. Examination of the interaction terms showed a significant gender by Sensation Seeking effect. This was examined by spitting the data by gender. Sensation Seeking was negatively related to BPD score ( $\beta$  =

Table 1
Descriptive statistics for the MSI and UPPS-P scales, and their correlations.

	Mean scores (SD	Correlations with MSI-BPD					
	All	Women	Men	Effect size (Hedges g)	All	Women	Men
MSI	4.46 (2.60)	4.55 (3.06)	4.38 (2.86)	.06			
Negative Urgency	26.4 (10.4)	27.4 (8.5)	25.4 (11.9)	.19	.57**	.69**	.49**
Positive Urgency	24.7 (12.0)	24.5 (9.4)	24.9 (14.0)	04	.48**	.51**	.48**
(lack of) Premeditation	20.8 (8.4)	20.3 (5.8)	21.2 (10.2)	.11	.29**	.28**	.33**
(lack of) Perseverance	20.0 (7.2)	20.0 (6.3)	20.0 (7.9)	00	.34**	.45**	.26**
Sensation Seeking	28.4 (10.0)	28.2 (8.0)	28.7 (11.5)	05	.21**	.22**	.20**
IM	36.3 (10.0)	37.8 (9.6)	35.0 (10.1)	28*	36**	37**	36**
SDE	35.3 (10.4)	35.8 (10.7)	34.8 (10.1)	09	59**	61**	56**

<sup>\*</sup>p < .01; \*\*p < .001. IM = Impression Management; SDE = Self-Deceptive Enhancement.

 Table 2

 Summary of regression model predicting MSI-BPD score.

	Analys	is 1		Analysis 2			
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	
Age	10			02			
Gender	.03			.07			
IM				16**			
SDE				52**			
Negative Urgency		.70**			.44**		
Positive Urgency		.15			.16		
(lack of) Premeditation		27**			25**		
(lack of) Perseverance		03			13		
Sensation Seeking		08			.04		
Gender*NU			.46			.42	
Gender*PU			27			16	
Gender*Prem			17			34	
Gender*Pers			.30			.17	
Gender*SS			.52**			.48**	
F-change	2.17	45.10**	7.67**	59.51**	16.11**	4.51**	
Adjusted R <sup>2</sup>	.01	.35	.40	.37	.47	.51	
$\Delta R^2$	-	.35	.06		.11	.03	

<sup>\*</sup>p < .01; \*\*p < .001.

 $-.24,\,p<.01)$  for men, but positively related (though not statistically significant,  $\beta=.13,\,p=.06)$  for women.

The correlational analysis showed that the BIDR scales were negatively correlated with BPD score. BIDR scores were also negatively correlated with UPPS-P scores (rs –.13 to –.52). To account for possible influence of IM and SDE on the relationships between BPD and impulsivity, the regression analysis was repeated but with both IM and SDE added at Stage one of the analysis. The results are shown in Table 2 (Analysis 2). While IM and SDE were both strong predictors of BPD score, the pattern of prediction from the UPPS-P scales remained unchanged (Analysis 1).

#### 4. Discussion

The study examined whether traits of BPD measured in a community sample are related to self-reported impulsivity. BPD traits were associated with raised impulsivity scores on all scales of the UPPS-P when considered at the level of zero-order correlations. However, the regression analysis produced a different picture where Negative Urgency was the only positive predictor of BPD traits. This result is in line with Peters et al. (2013). However, Fossati et al. (2014) report the "opposite" picture, with Positive Urgency predicting BPD after accounting for the effects of Negative Urgency, but Negative Urgency not predicting BPD after accounting for the effects of Positive Urgency. We also performed

this analysis on the present data. We found that Negative Urgency increased the model fit after accounting for Positive Urgency (p < .001), but Positive Urgency did not account for further variance after accounting for Negative Urgency (p = .84). The reason(s) for these contradictory results is unclear. Each study used a different instrument to measure the features of BPD and the emphasis on certain BPD traits may differ between instruments. The studies also differed in terms of the nature of the sample. Fossati et al. examined a younger age group (M = 16.7 years) and preselected quite small groups (N  $\approx$  30) based on the screening of a large population. Peters et al. used undergraduates (N = 227; mean age = 19.0 years), while the present study used a larger and older community sample (N = 429; mean age = 29.0 years). It is possible that the pattern of impulsive behaviour, and a shift between positive and negative urgency, occurs across ages. This is particularly so given that Personality Disorder is a diagnosis of adulthood and symptoms change and fluctuate rapidly during adolescence (Aleva et al., 2022).

Both Negative and Positive Urgency have also been measured in clinical samples. Martin et al. (2025), in a mainly female sample, present zero-order correlations with Borderline Personality Questionnaire (Poreh et al., 2006). The correlations with each of the UPPS-P were highly similar to those of the present study, including a larger correlation with Negative Urgency (r = .57) than Positive Urgency (r = .43). However, Martin et al. did not perform a regression analysis and so the unique contribution of Negative vs Positive urgency is not known. However, a similar study (Martin, 2025) found that the BPD group had greater Negative Urgency (though this was not statistically significant) but reduced Positive Urgency in comparison to healthy controls. Mungo et al. (2025) also found a greater effect of Negative Urgency than Positive Urgency when comparing those with a BPD diagnosis to controls, and stress that "emotion impulsivity - particularly Negative Urgency emerges as a central feature of BPD in emerging adulthood". These studies all support the notion of the greater contribution of Negative Urgency than Positive Urgency to BPD.

We stressed the importance of understanding the roles of negative and positive urgency as possible targets for treatment and prevention strategies for people with traits of BPD. As noted, DBT (Linehan, 1993) relies heavily on reducing impulsive and rash behaviour when the person is distressed. Hence, the current finding that negative urgency appears to play the key role in traits of BPD provide further support for the rational behind DBT. Further research is needed to clarify which, and when, of these forms of urgency underpins the problematic behaviours associated with BPD.

The regression analysis showed an unexpected finding that the (lack of) Premeditation scale was negatively predictive of BPD traits (whereas its zero-order correlation was positive). This is indicative of a

"suppression effect". Further exploration showed that this occurred only when either of the scales of Urgency were added to the regression equation. This suggests that the unique variance of the (lack of) Premeditation scale from that of the Urgency scales is protective against impulsive behaviour in people with BPD traits. This seems to underscore the importance of emotionality in BPD and that their planning ability when not under emotional stress may be good. Again, this mimics the theoretical premise of DBT that teaches participants the skills of mindfulness and distress tolerance when not feeling emotional so that these can be applied during an emotional crisis.

The study also provided an analysis of gender differences in impulsivity in relation to BPD. While few gender differences were noted, there was a significant effect of gender on the relationship between Sensation Seeking and BPD, with men showing a positive relationship and women showing a trend towards a negative relationship. Peters et al. (2013) also noted a negative relationship between Sensation Seeking and BPD (though in a sample that was more female than male) and speculate that Sensation Seeking might be a protective factor to BPD through its positive relationship with extraversion. However, why such a mechanism might differ between men and women is not clear and warrants further investigation.

#### 4.1. Limitations

The study used self-report questionnaires to measure both impulsivity and BPD traits. As such, the study may be subject to the influence of common method variance (e.g., responses may be biased by social desirability, mood, or response style). To mitigate this problem, we took measures of Impression Management and Self-Deceptive Enhancement and showed that their inclusion in the analysis had little impact. The study was also limited to measuring "traits" of BPD in the community rather than examining those with or without a formal diagnosis. Levels of BPD are likely to be far less in such community samples than in clinical populations, and the manifestation of impulsivity may vary qualitatively, rather than just quantitatively, at diagnostic levels. Future studies are needed to overcome these limitations where BPD could be measured using clinical assessment in patient samples. Further, measurement of impulsivity could use behavioural/laboratory tasks, though currently there appears to be only a weak relationship between such tasks and self-reported impulsivity (e.g., Cyders and Coskunpinar, 2012) or BPD (Barker et al., 2015).

#### 5. Conclusions

In conclusion, the present results extend previous findings by using a large community sample and being able to examine possible gender differences in the relationship between impulsivity and BPD traits. It is also the first to consider if socially desirable responding may influence these results. It supports the centrality of negative emotions producing rash actions (Negative Urgency) to the concept of BPD.

#### CRediT authorship contribution statement

**Nicola S. Gray:** Writing – original draft, Supervision, Methodology, Conceptualization. **Jennifer Pink:** Writing – review & editing, Software, Methodology, Investigation. **Robert J. Snowden:** Writing – original draft, Methodology, Formal analysis, Conceptualization.

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#### **Declaration of competing interest**

None.

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