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Letter to the Editor

Emotional impulsivity is connected to suicide attempts and health care utilization in patients with borderline personality disorder

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Dear Editor,

Borderline personality disorder (BPD) is a psychiatric disorder with extensive healthcare utilization [1]. One of the symptom clusters of BPD relates to impulsivity – a complex construct that can be described as acting on the spur of the moment without considering the consequences. It can lead to a broad spectrum of clinically relevant behaviors including self-harm and aggressive acts [2] that may be connected to healthcare utilization, such as hospitalization and medication usage.

UPPS-P is an impulsivity model based on several personality traits that include measures of impulsive behavior during the experience of intense emotions. It consists of five factors: (lack of) perseverance, (lack of) premeditation, sensation seeking, positive and negative urgency (tendency to act impulsively under the influence of positive or negative emotions) [3]. With its emphasis on impulsivity caused by intense emotions, this model seems to be a suitable measure of impulsivity in BPD.

Previous works found that impulsivity, especially negative urgency, played a role in the suicidal, self-harming [4], and aggressive behaviors [5]; however, information about its role in healthcare utilization is scarce.

To help fill gaps in the knowledge about the relationship between impulsivity facets, clinically relevant behavior, and healthcare utilization, we conducted a cross-sectional study in BPD patients who sought clinical care at the department of psychiatry of a general hospital offering care for a metropolitan area with approximately 800,000 inhabitants. Eligible patients were between the ages of 18 and 35 and without major psychiatric or neurologic comorbidities. Diagnosis of BPD was confirmed by two board-certified psychiatrists according to DSM V [1].

We documented two variables reflecting clinically relevant behavior: lifelong count of suicide attempts (Suicidality), and number of physically aggressive acts in the last two years (Aggression); and two variables reflecting healthcare utilization: lifetime count of hospitalizations (Hospitalizations), and lifetime count of psychiatric medications (Medication).

Every treatment with a psychiatric drug lasting at least two weeks was recorded. Anxiolytics other than buspirone, gabapentin, and pregabalin were not included. Next, patients were examined using the UPPS-P scale [3] to describe impulsivity facets. Because evaluated variables were counts and did not follow normal distribution, Poisson regression was used to define relationships between impulsivity facets, age, and clinically important variables, with significance set to $p < 0.01$ (Bonferroni corrected).

45 BPD patients were enrolled (37 females; median of age 22 years). The use of medication in our sample was extensive: 88.24% had been administered at least one psychotropic drug for longer than two weeks; 82.35% had undergone treatment with antidepressants; 64.71% with antipsychotics; 23.53% with anxiolytics; and 20.59% with mood stabilizers. The four most common drugs were quetiapine, sertraline, escitalopram, and mirtazapine. Analysis of relationships between clinical or health-care utilization parameters and UPPS-P factors showed significant connection between Hospitalizations and Suicidality, Suicidality and Negative urgency, Suicidality and Sensation seeking, Aggression and Negative urgency, and Medication and Negative urgency. The properties of Poisson regression models and results are summarized in the Table 1.

Our study showed an importance of negative urgency in suicidal and aggressive events in BPD – a finding supported by previous works [4–6]. Negative urgency can be considered a mediator between negative emotions and impulsive behavior [3]. Because another symptom cluster in BPD, emotional dysregulation, increases the risk of negative affect [1], it is probable that the interaction between emotional dysregulation and impulsivity is critical for the emergence of clinically relevant behavior.

Another important finding was the relationship between the number of suicide attempts and the number of hospitalizations. It suggests that a significant number of hospitalizations in BPD patients may be a consequence of suicide attempts [7].

Interestingly, our results concerning medication use contradict previous studies that found that affective symptoms, not impulsivity, were an indication for pharmacotherapy in most BPD patients [8,9]. This may be a consequence of different impulsivity measures employed in previous studies – earlier impulsivity models tended to omit emotional impulsivity, i.e. urgency. It is possible that concepts implementing a connection between emotions and impulsivity, such as

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Table 1
Regression models of relationships between impulsivity facets and clinical impacts.

Model	Distribution	Dependent variable	Independent variable	Coefficient (95% CI)	Z	P	
1	Quasi	HOS	SUI	0.281 (0.116, 0.445)	3.364	0.002	***
			AGG	0.016 (−0.154, 0.170)	0.200	0.84	
2	Quasi	MED	SUI	0.037 (−0.133, 0.197)	0.441	0.66	
			AGG	0.032 (−0.127, 0.167)	0.426	0.67	
3	Poiss	SUI	Age	0.041 (0.001, 0.081)	2.007	0.04	*
			NU	0.121 (0.061, 0.183)	3.912	< 0.001	***
			PR	−0.001 (−0.056, 0.056)	−0.051	0.96	
			PE	−0.038 (−0.102, 0.026)	−1.180	0.24	
			PU	−0.005 (−0.045, 0.035)	−0.239	0.81	
			SS	0.054 (0.018, 0.092)	2.876	0.004	***
4	Quasi	AGG	Age	0.070 (0.007, 0.133)	2.198	0.03	*
			NU	0.177 (0.074, 3.179)	3.179	0.003	***
			PR	−0.060 (−0.135, 0.035)	−1.254	0.22	
			PE	0.063 (−0.041, 0.175)	1.140	0.26	
			PU	−0.012 (−0.080, 0.053)	−0.356	0.72	
			SS	0.010 (−0.051, 0.072)	0.326	0.75	
5	Poiss	MED	Age	0.011 (−0.031, 0.054)	0.523	0.60	
			NU	0.096 (0.048, 0.146)	3.875	< 0.001	***
			PR	−0.005 (−0.055, 0.046)	−0.186	0.85	
			PE	−0.029 (−0.086, 0.030)	−0.976	0.33	
			PU	0.008 (−0.023, 0.039)	0.498	0.62	
			SS	−0.019 (−0.050, 0.011)	−1.243	0.21	
6	Quasi	HOS	Age	0.048 (−0.002, 0.097)	1.891	0.07	
			NU	0.097 (0.024, 0.174)	2.556	0.01	*
			PR	−0.020 (−0.090, 0.054)	−0.555	0.58	
			PE	−0.012 (−0.091, 0.069)	−0.304	0.76	
			PU	0.003 (−0.048, 0.054)	0.116	0.91	
			SS	0.010 (−0.031, 0.052)	0.462	0.65	

Test for Overdispersion by Cameron & Trivedi at $p = 0.05$ [10] was used. In case of positivity of the test, quasipoisson distribution was assumed.
Abbreviations: quasi – quasipoisson distribution, poiss – Poisson distribution, HOS – hospitalizations, MED – medication, SUI – suicidality, AGG – aggressivity, NU – negative urgency, PR – (lack of) premeditation, PE – (lack of) perseverance, PU – positive urgency, SS – sensation seeking. Regression results: Statistically significant relationships are highlighted: *** – result did survive Bonferroni correction ($p < 0.01$), * – result did not survive Bonferroni correction ($p < 0.05$).

UPPS-P, are more sensitive to detect the link between impulsivity and extensive medication use in BPD.

To conclude, negative urgency was important in clinically relevant behavior and healthcare usage. This impulsivity facet could therefore be used as a risk-assessment tool. Because negative urgency implements the combination of negative affect regulation and impulsivity, both of these processes should be addressed in a clinical setting to limit suicidal or aggressive behavior and healthcare utilization in BPD.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.genhosppsych.2018.11.008.

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