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Research article

Impulsivity issues in borderline personality disorder and it's links with insight: the role of urgency

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ABSTRACT

Objective: Impulsivity plays a major role in a wide range of disorders including Borderline Personality Disorder. Another crucial clinical dimension is insight. This clinical dimension is linked with symptomatology and treatment issue. The present study aims to investigate the impact of positive and negative urgency on insight in Borderline Personality Disorder.
Methods: We recruited eighty-one women with Borderline Personality Disorder and assessed insight level and impulsivity scores using the Beck Cognitive insight scale and the UPPS-short form scale.
Results: Our results showed interesting links between positive urgency and insight quality.
Conclusion: Negative emotions play a fundamental role for the insight quality, but positive emotions are surprisingly related to clinical insight. We discuss the possible therapeutical impact of this results on treatment adaptation.

1. Introduction

Insight is a complex dimension involved in treatment adherence (Amador et al., 1994; Beck et al., 2011; Sendt et al., 2015). There are two types of insight: clinical and cognitive. Clinical insight is the ability to be conscious of one's illness, the need for treatment and the right symptoms attribution (David, 1990; Beck et al., 2004). Cognitive insight is the capacity to criticise one's own beliefs (Beck et al., 2004). Since the beginning of assessing clinical and alliance issues, the awareness of the disorder stood as a critical dimension (Zilboorg, 1952). He considered insight as "*a guide in assessing the therapeutic process or status of recovery*" and assessing it for BPD could help us maintain our patient into therapy. A recent study by Lysaker et al. (2018), analyze the possible impact of insight and its metacognitive processes on recovery from serious mental illness. "*Recovery consequently is not just "fixing" something or finding solutions for any number of dilemmas. Recovery requires individuals to make sense, in the moment and over time, of the experiences that surround mental illness*", and insight therapy appears more and more to be a new standalone approach (de Jong et al., 2019; Vohs et al., 2018). More than just a dimension to assess, insight seems to be a care process for psychopathological issues.

An extensive literature debating insight founded on patients with schizophrenia (SZD) or Bipolar Disorders (BD) studies exist (for review see: Tham et al., 2016; García et al., 2016; Murri et al., 2015; Leclerc et al., 2013, Velligan et al., 2017). In SZD, articles show links between insight and symptomatology such as for mood disorder (da Silva et al., 2016). For example, high cognitive insight levels increase suicidal risk in SZD (for review see: Amador et al., 1996; Crumlish et al., 2005; Schwartz and Smith, 2004; Kao and Liu, 2011; Palmer et al., 2015) and in BD (Yen et al., 2008; Acosta et al., 2012; de Assis da Silva et al., 2017). Thus, insight level (clinical and cognitive) is associated with the severity of symptomatology, mood changes and cognitive deficits. These issues are also relevant for personality disorders, including borderline personality disorder (BPD); nevertheless, to our knowledge, no studies have assessed the implication of insight in BPD.

BPD is characterised by an array of symptoms composed by desperate attempts to avoid abandonment, impulsivity issues, dissociative symptoms and emotional dysregulation (American Psychiatric Association, 2013). BPD and BD share many of these symptoms, among them, a severe mood variability and executive dysfunctions (for review: Mak and Lam, 2013; Gvirts et al., 2015). BPD also share symptoms with SZD (Hassiotis et al., 2017). Furthermore, BDP has impairments in cerebral metabolism (O'Neill and Frodl, 2012), and alterations bounded up with a low insight in SZD (Caletti et al., 2017). Finally, the significant number of relapses

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and treatment solicitation question the insight quality in BPD (Benjamin, 1996; Evans et al., 2017).

Very few studies examine impulsivity behaviour and insight quality. In this field, Konstantakopoulos et al. with Eating Disorder (ED) and insight study and Matsunaga with Obsessional Compulsive Disorder's (OCD) insight study proposed the fact that there are different insight's profiles. OCDs and ED are impulse-control disorder so do BPD. Clarifying the link between impulsivity and insight for BPD could enlight new dynamics and help us to have better results in the therapy setting. BPD patients have a strong reputation of being hard to get to therapy and impulsive patients with low consciousness (Sansone et al., 2015; Bodner et al., 2011; Aviram et al., 2006). This study aims to find some evidence that BPD patients have insight into illness and decrease the stigma impact on therapeutic reactivity. Another substantial prejudice is based on impulsivity issues, saying that BPD is prone to rash actions and reckless reactions. Recent study looking at impulsiveness issues discovered the impact of only attentional impulsivity among all dimensions of impulsivity and especially before motor impulsivity (e.g., "I act on the spur of the moment"), and future-oriented impulsivity (e.g., "I [do not] plan for the future") (Euler et al., 2019).

The association between impulsivity and BPD is thoroughly documented (Kulacaoglu et al., 2017a,b). Paris (2005) reported that BPD expresses a wide range of impulsive behaviours including repeated suicide attempts, self-mutilation, substance abuse, sexual promiscuity, and reckless driving or eating behaviour. Across these studies, BPD symptoms go with urgency and (lack of) perseverance (DeShong and Kurtz, 2013; Miller et al., 2003; Lootens et al., 2017; Flory et al., 2003; Tragesser and Robinson, 2009; Whiteside et al., 2005). Some associations were also reported with (lack of) premeditation (Tragesser and Robinson, 2009) and sensation seeking (Whiteside et al., 2005). Thanks to the UPPS-S model of impulsivity, it is now possible to distinguish the positive urgency -the impulsive behaviours based on positive emotions – from the negative urgency- the impulsive behaviour based on negative feeling. *For example, positive urgency (item 2) "I forgot to take into account the consequences of my action when I get enthusiastic about something" or for negative urgency (item 4) "when I get angry, I act rashly".*

Positive urgency is robustly linked with depressive disorder (Carver et al., 2013). Johnson and Carver (2016) revealed an impulsive response to positive emotions related to suicide ideation attempts and self-harming. The same reaction in BPD could exist. Muhtadie et al.'s study (2014) show that BD impulsivity was linked with Positive Urgency and was associated with poorer psychosocial functioning. A recent meta-analysis (van Zutphen et al., 2015) assessing emotional sensitivity and regulation on BPD underlined the limits of our knowledge in this area since most of the time the design of the studies was about negative stimuli or neutral stimulation. Identifying emotions is the key to successful therapy, independently from the type of treatment (Derks et al., 2016; McMain et al., 2013). To consider negative and positive affects dysregulation could make it possible to limit the risk of dysfunctional behaviour (Terzi et al., 2017) and social rejection (Chester et al., 2017). Further research is needed to examine this issue in BPD.

The current study aimed to investigate the relationship between the level of insight (clinical and cognitive) and BPD symptoms, and more precisely, the impact of clinical dimensions such as impulsivity.

2. Materials and methods

2.1. Participants

Eighty-one female patients diagnosed with BPD (Mean age = 34.70 years, Mean time from first diagnosis = 31 months). All participants were recruited according to DSM-5 (SCID II criteria). Patients were in the stable phase of the illness according to the current treating psychiatrist. They had no hospitalisations or changes in housing in the month before entering the study. All individuals with BPD were recruited from the University Hospital and the Clinic "Les Sophoras", in France, within the duration of the experiment (12 months long data collection process). Exclusion criteria for both groups were: (a) known neurological disease, (b) developmental disability. In their lifetime history, patients could have suffered from a variety of disorder such as depressive disorder, anxiety disorder or bipolar disorder but at the time of the study, they were all stabilised and had no changes on their treatment (therapeutical activities or medications). All participants were proficient in the French language, had an average or corrected-to-normal vision and naïve as to the purpose of the study. The present protocol was accepted by the Committee of Ethics of the Hospital. Participants gave written consent to participate in this experiment. The capacity of the patients to provide informed consent was established through a structured interview and was also confirmed by their treating psychiatrists.

2.2. Measures

2.2.1. Borderline Personality Questionnaire (BPQ) (Poreh et al., 2006)

For all subjects, we assessed the severity of symptoms using the Borderline Personality Questionnaire (BPQ) French Version with a Cronbach's α at 0.93 (Bianchi et al., 2018). This scale is an 80-item true/false self-report measure that assesses borderline personality traits. This structure offers nine subscales scores (impulsivity, affective instability, abandonment, relationships, self-image, suicide/self-mutilation, emptiness, intense anger, and quasi-psychotic states).

2.2.2. UPPS impulsive behavior scale - short version (UPPS-S) (Whiteside and Lynam, 2001)

We used the French translation of the scale (Billieux et al., 2012). UPPS-S is a self-report scale composed by 20 items assessing four factors of impulsivity: (a) urgency (negative and positive), (b) lack of premeditation; (c) lack of perseverance; (d) sensation seeking. Positive urgency was assessing the level of impulsivity caused by positive emotion and Negative Urgency evaluating the level of impulsivity due to negative emotions. The respective alpha's proved a good consistency (Negative Urgency's apha = .78, Positive Urgency's alpha = .70, Lack of premeditation's alpha = .79, lack of perseverance alpha = .84, sensation seeking's alpha = .83).

2.2.3. Scale to assess unawareness of mental disorder (SUMD) (Amador et al., 1994)

We used the French version of the SUMD (Raffard et al., 2010). In their validation for the French version, Cronbach's α were superior to 0.70. The SUMD assesses 'lack of' insight, i.e. the higher the score (ranging from 0 to 5), the poorer the insight, which provides scores on three insight dimensions: mental illness (S1), need for treatment (S2) and social consequences (S3). In a second time, our sample was dichotomised into "good insight" (scores of 1) and "poor insight" (all scores over 1) for the S1 insight dimension. The SUMD assesses clinical insight. As SUMD is the gold standard for measuring insight and an efficient scale to address all dimensions of insight we chose this scale preferably to other insight scales. Since the original study (Amador and Strauss, 1993), this scale has been designed so that any symptom scale can be used independently of the others depending on the aims of the investigation. In a recent meta-analysis (Nair et al., 2014; Aleman et al., 2006; Ghaemi and Rosenquist, 2004), SUMD appears to be one of the most widely used insight scale and the most applied to different disorder, from schizophrenia to bipolar disorder.

2.2.4. Beck Cognitive insight scale (BCIS) (Beck et al., 2004)

Favrod et al. (2008) provided the French translation of BCIS. BCIS can be divided into two subscales, Self-reflectiveness (SR) and Self-Certainty (SC), which respectively assess the metacognition and self-consciousness level (SR) and the certainty that the patient can have about his judgments and beliefs (SC). The respective alpha's for SR and SC are 0.73 and 0.62 in the French validation. This scale assesses the cognitive insight level. The score of cognitive insight is made a composite score calculate from SR

score minus SC score. Cognitive insight being little assessed we used this classical scale to asses it in a new disorder insight 'evaluation.

2.3. Statistical analysis

As the variables were not normally distributed, Spearman non-parametric correlations were used to explore the relationships between clinical data, level of insight (clinical and cognitive) and impulsivity score. We applied a multiple linear regression to estimate the shared covariance between UPPS and SUMD/BCIS. The level of significance was set to $p < 0.05$.

3. Results

3.1. Clinical results

Descriptive analyses revealed a mean age of 34.70 years, a time since the first diagnoses mean around 31.88 months and that global patients were under medication (mean 1.45 prescribe drug per day). Regarding the impulsivity level, the UPPS Score mean was 54.85. Looking at symptoms level, mean score at the BPQ scale was 52.04. For insight dimension, the mean score was 8.04 for BCIS and 5.066 for SUMD. Descriptive results are shown more in detail with SD and sub-dimension mean scores in Table 1.

3.2. Correlation analysis

BPQ score were positively correlated to negative urgency (*r=.509; p = .000*) and Positive Urgency (*r=.371; p = .001*).

Results show the negative correlation between Positive Urgency and SUMD (*r=-.235; p = .044*) but did not show a significant correlation between the negative urgency subscale score and SUMD's scores.

BCIS score was positively correlated to UPPS score (*r=.246; p = .027*). Self-reflectiveness (SR) correlate positively with Negative Urgency (*r=.302; p = .007)* and Positive Urgency *(r=.256; p = .023)*.

Results showed a positive correlation between Negative Urgency and other UPPS dimension (Positive urgency *r=.359; p = .001*: Lack of premeditation *r=.312; p = .005*; UPPS total score *r=.583; p = .000*). Positive Urgency was also related to UPPS dimensions of Lack of premeditation *r=.461; p = .000*, Sensation seeking *r=.392; p = .000* and UPPS total score *r=.738; p = .000*.

Table 1
Descriptive analysis.

	Mean	SD
Age	34.70	12.51
Diagnosis	31.88	56.74
SR	15.73	3.72
SC	7.70	3.60
BCIS	8.04	5.61
Negative Urgency	12.75	2.473
Positive Urgency	12.61	2.862
Lack of Premeditation	9.71	3.013
Lack of Perseverance	9.06	3.001
Sensation Seeking	10.72	3.704
UPPS	54.85	9.200
BPQ	52.04	10.93
SUMD3	5.066	2.22
S1	1.6184	1.00621
S2	2.0000	1.36626
S3	1.4605	1.02555

Toxics: number of substance used among coffee, alcohol, cannabis, drugs, non-prescribed medicine); SR: Self reflectiveness, SC: Self Certainty; BCIS: global Cognitive Insight scale, UPPS: Impulsivity Global score; BPQ: Borderline personality questionnaire; SUMD3: global clinical insight score; S1: Dimension 1 of the SUMD scale, insight dimension; S2: Dimension 2 of the SUMD scale, need for treatment; S3: Dimension 3 of the SUMD scale, social consequences of the illness.

3.3. Regression analysis

Regression analysis to predict BPQ score from all insight levels (S1, S2, S3, SR, SC) revealed the impact of SR and SC (see Table 2) making cognitive insight's dimension the only predicting factor.

Regression to predict BCIS from impulsivity failed. The prediction of SUMD from UPPS dimension and age revealed the role of Negative and positive Urgency (see Table 3).

3.4. Subgroup analysis

Based on Table 1 results and consistent literature, we made a cut point at BPQ 52 score to separate high BPD symptoms patients (n = 40) from Low BPD (n = 41) patients. As we didn't used BPQ questionnaire for diagnose but for indicative purpose, for traits severity assessment (Chanen et al., 2008) (all subjects being diagnoses as BPD). We separate the sample in two severity groups; one with high score –superior to the mean of our group- or with low scores –beyond our sample mean score at the BPQ. After dichotomization of the sample, we ran further analysis. Differences were significant on Impulsivity, and more precisely on Negative Urgency, Positive Urgency and Sensation Seeking (see Table 4).

3.4.1. Correlation analysis for sub-groups

Looking at the Low BPQ group (n = 41) correlation analysis revealed a positive link between SR and Positive urgency (*r=.350 p = .029*), SC and negatively to Lack of Perseverance (*r=-.379; p = .017*). In another hand Negative urgency was positively correlated to BPQ (*r=.338 p = 041*), SUMD (*r=.376; p = .026*) and S3 (*r=.514; p = .002*). Positive Urgency was negatively correlated to S1 (*r=-.494; p = .003*). UPPS was positively correlated to BPQ (*r=.351 p = .033*).

For the Hight BPD symptom group, BPQ score was correlated to Negative urgency (*r=.444; p = .003*), positive urgency (*r=.366; p = .017*), Lack of Premeditation (*r=.334; p = .031*), lack of perseverance (*r=.403;p = .008*) and UPPS global score (*r=.541; p = .001*).

3.4.2. Regression analysis for subgroups

The regression to predict BPQ score from insight dimension (S1 S2 S3 and SR/SC) revealed the impact of SR only for the High BPQ group (see Table 5).

3.4.3. Impact of impulsivity dimension on insight levels

For low BPQ group, prediction of BCIS from UPPS dimension failed, but the prediction of SUMD from the same dimension revealed the role of Positive and negative urgency (see Table 6).

For the Hight BPQ group, we ran the same regressions, but both failed to reveal any impact of impulsivity on the BCIS or SUMD level.

Table 2
Prediction of symptomatology from insight dimension (clinical or cognitive).

Model	Non standardized coefficient		Standardized Coefficient
	B	SE	Bêta
(Constant)	21.265	7.435	
SR	1.458	.331	.502***
SC	.861	.344	.270*
S1	-.045	1.246	-.004
S2	.451	.908	.055
S3	.303	1.186	.027
Adjusted R^2		.224	
F		5.10	

Dependant variable: BPQ; *p < .05; ***p < .005. SR: Self reflectiveness, SC: Self Certainty; BCIS: global Cognitive Insight scale, S1: Dimension 1 of the SUMD scale, insight dimension; S2: Dimension 2 of the SUMD scale, need for treatment; S3: Dimension 3 of the SUMD scale, social consequences of the illness.

Table 3
Predicting clinical insight from impulsivity dimensions.

Model	Non standardized Coefficient		Standardized coefficient
	B	SE	Bêta
(Constant)	5.113	2.022	
Negative Urgency	.293	.111	.319*
Positive Urgency	-.244	.106	-.318*
Lack of Premeditation	-.024	.096	-.032
Lack of Perseverance	.104	.086	.143
Sensation Seeking	-.084	.075	-.142
Adjusted R^2		.194	
F		2.67	

Dependant variable: Total Score of the SUMD scale; *p < .05.

Table 4
Differences regarding level of symptomatology.

	Low BPQ Group		High BPQ group		Mann Withney U	Cohen's d
	Mean	SD	Mean	SD		
BCIS	7.10	5.67	7.89	5.70	.185	
Negative Urgency	11.79	2.64	13.04	2.32	.002**	.50
Positive Urgency	11.74	2.90	12.82	2.76	.013*	.38
Lack of Premeditation	8.97	2.90	9.95	3.03	.118	
Lack of Perseverance	8.54	2.91	9.45	3.05	.115	
Sensation Seeking	9.51	3.57	10.98	3.75	.013*	.40
UPPS	50.56	7.92	56.24	9.10	.000***	.66
BPQ	43.11	7.51	55.24	10.56	.000***	1.32
SUMD3	5.32	2.49	5.06	2.16	.510	

*p < .05; **p < .01; ***p < .001; BCIS: global Cognitive Insight scale, UPPS: Impulsivity Global score; BPQ: Borderline personality questionnaire; SUMD3: global clinical insight score.

4. Discussion

Identifying the quality of insight in BPD has become a critical area of investigation that can lead to more understanding of the processes involved in many relapses. Insight in its two forms (clinical and cognitive) has been widely assessed in SZD and BD (for review see Van Camp et al., 2016; Dumas et al., 2013). The present study evaluated two forms of insight in BPD and examined the relationship with clinical variables such as impulsivity.

4.1. Insight and impulsivity, the role of urgency

The obtained results show that some dimensions seem to play an important role. Concerning cognitive insight, the link with UPPS and only Negative and Positive Urgency revealed the importance of emotions for the consciousness of the illness in BPD patients. Both clinical and cognitive insight dimensions are correlated to impulsivity. Clinical insight being associated with positive urgency (and not with negative urgency), explaining that the more patient experiences positive urgency, the more they will be aware of their illness. Cognitive insight is linked to impulsivity too, more precisely due to the correlation of its SR dimension to both Negative and Positive Urgency. This makes Positive Urgency differs on its impact on SUMD or BCIS.

As cognitive insight was the only insight predicting BPQ level, further research needs to focus on clarifying the impact of cognitive dimension on symptomatology level.

The surprisingly significant impact of Positive urgency revealed the importance of positive emotion on insight. Positive urgency correlates clinical insight, questioning the tendency to work with insight by focusing psychoeducational programs on negative emotions such as Anger, Shame and Guilt (the mainly associated emotion to BPD) (Cohn, 2015; Mancke et al., 2017; Peters et al., 2014).

Impulsivity plays no role for cognitive insight, but for clinical insight, positive Urgency and negative Urgency were predictors of consciousness. These results seem to be in line with past research that showed that negative emotions play a fundamental role in BPD (APA, 2013) but the positive valence of urgency is a new result.

After dichotomisation, we find a significant difference concerning positive urgency, negative urgency and sensation seeking dimension of UPPS-S between high BPQ and Low BPQ group.

Without surprise, in the High BPQ group, symptomatology was heavily correlated to impulsivity. No Insight dimension was visible as linked to BPQ level.

In the Low BPQ group, cognitive insight was correlated to Positive urgency only, and a more complex array of correlation linked clinical insight to Urgency. The negative urgency was linked with symptomatology, clinical insight and the S3 dimension (the consciousness of the social impact of disease). Positive urgency played a subtler role, being directly linked to the S1 dimension, the mental illness consciousness and via a positive correlation explaining the adverse effect of positive urgency on clinical insight.

Especially in the Low BPQ group, negative and positive urgency was a key factor because they influenced clinical. In the High BPQ group, impulsivity was not affecting any insight. These results question the

Table 6
Impact of Impulsivity on Clinical insight (SUMD) in Low BPQ group.

Model	Non standardized coefficient		Standardized coefficient
	B	SE	Bêta
(Constant)	3.79	2.474	
Negative Urgency	.509	.161	.526***
Positive Urgency	-.357	.149	-.424*
Lack of Premeditation	-.164	.148	-.193
Lack of Perseverance	.212	.133	.256
Sensation Seeking	-.032	.113	-.046

Note: *p < .05; ***p < .005

Table 5
Predicting BPQ from insight dimensions.

Model	High BPQ group n = 41			Low BPQ group n = 40		
	Non-standardized Coefficient		Standardized coefficient	Non-standardized coefficients		Standardized coefficients
	B	SE	Bêta	B	SE	Bêta
(Constant)	43.299	6.703		36.128	9.085	
SR	.584	.276	.348*	.352	.487	.160
SC	.292	.302	.159	-.033	.408	-.015
S1	1.998	1.228	.270	-1.725	1.462	-.275
S2	-.043	.708	-.010	.660	1.182	.118
S3	1.125	1.065	.171	2.206	1.373	.306

*p < .05; SR: Self reflectiveness, SC: Self Certainty; S1: Dimension 1 of the SUMD scale, insight dimension; S2: Dimension 2 of the SUMD scale, need for treatment; S3: Dimension 3 of the SUMD scale, social consequences of the illness.

differences of dynamics within each group: maybe the high symptomatology group had just less access to insight or the link between their impulsivity and their disorder whereas the patients feeling better can cote the impact of impulsivity on their disorder.

Our results show that the emotional dimension influences the clinical insight quality in the BDP. To our knowledge, it is the first time that emotional valences have a specific influence on the awareness of the disease. Positive emotions seem to favour clinical insight into BPD and negatively influence cognitive insight. This finding allows us to open the way for the development of new psychological therapies for people with BPD.

4.2. An implication for clinical work

Dialectical Behavioral Therapy (DBT; Linehan, 1993a; Linehan, 1993b) the standard gold treatment for BPD is a multi-module psychological intervention that was developed using some of the principles of Cognitive behaviour therapy in combination with mindfulness-based techniques. DBT focuses first on negative emotions regulation, mindfulness and distress tolerance than in relationships issues but no particular focus is made on positive emotions or metacognitive issues. For Linehan (1993a, 1993b), emotions dysregulation is a core feature of BPD, anger in the first place and then frustration, fear and guilt are presented to be regulated. Our results tend to link positive emotions impulsivity, and clinical insight together, questioning the interest to work on positive emotions or, at least, questioning that they probably have a more central impact on BPD severity than we thought.

Our study shows that maybe insight is a dynamic dimension. The two groups of high BPQ levels and Low BPQ levels could sign that the same patients have a fluctuation of their insight. The other explanation could be that we have two patients' profiles. On one handsome with high symptomatology and high positive and negative urgency. On the other hand, some with stable low symptomatology and with low urgency. In both cases, therapies need to be careful with working on increasing positive emotions and need to assess the impact of urgency compared to other impulsivity dimensions.

The present study contains several limitations. First, the number of participants did not allow us to use parametric statistics, and the female composition of our sample could prevent generalisation of the findings. Recent studies report confirms a 1/3 sex ratio in borderline personality disorder (Sher et al., 2019) showing the difficulty to assess borderline personality disorder in male participants as there are three women for one man in community sample recruitment. Some studies stand for 1/1 sex ratio (Grant et al., 2008; Sansone and Wiederman, 2014) so further research need to include more man.

Secondly, the role of positive emotions and its links with insight need to be assessed more in details with more specific scales. BCIS and SUMD scales were constructed to evaluate insight in schizophrenia; therefore, we need to compare the results with more specialised insight scales. The third limit is that we used a five impulsivity dimensions model that can be criticised (Stahl et al., 2014). Positive urgency is a new dimension that was not assessed in the first studies using the UPPS scale. Another limit comes from the way we selected our patients, all patients were recruited from care solicitation services; they were all willing to receive treatment. Another limitation to our study is the small sample size and the difficulty to have an excellent statistical power with our moderation analyses at the moment; further researches are needed to increase the strengths of these results and go further after this preliminary study.

As a conclusion, our results have shown that insight level (clinical and cognitive) is a complex phenomenon in patients with BPD directly linked with impulsivity and urgency (negative and positive).

5. Conclusion

Interrogating the impact of every impulsivity dimension on insight could help us adapt therapies. Nowadays, new therapy processes intent to work on insight issues on BPD. For example, Vohs and Leonhardt (2016) described the treatment trial for BPD specifically targeting metacognitive processes (Metacognitive Reflection and Insight Therapy). The intermediate stage could stand on the metacognition work that attract more and more research focus in BPD research field (Schilling et al., 2018; Quattrini et al., 2019; Maillard et al., 2019). Other therapy like the mentalization-based therapy (MBT; Bateman and Fonagy, 2013; Fonagy et al., 2017) Further studies are needed to compare the effectiveness of these therapies on positive emotions regulation and impulsivity. The efficacy of MBT is demonstrated for negative affect regulation (Morken et al., 2017), but to our knowledge, no study has directly evaluated the positive affects regulation.

Declarations

Author contribution statement

Sylvia Martin: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Jonathan Del-Monte: Conceived and designed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Pierluigi Graziani: Conceived and designed the experiments; Performed the experiments.

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Competing interest statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

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