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Emotion Dysregulation, Impulsivity and Personality Disorder Traits: A Community Sample Study

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Highlights

- We examined the independent contribution of emotion dysregulation (ED) dimensions on PD traits
- Emotional nonacceptance was transversally related to various PD traits
- Unique profiles of ED differentiated cluster A, B, and C PD traits
- Impulsivity explained incremental variance in schizotypal, borderline, and antisocial PD traits
- Histrionic, narcissistic, and obsessive-compulsive PD traits were related to lower ED and impulsivity

Abstract

The present study was designed to test an emotion regulation framework to understand individual differences in personality disorder (PD) traits in a non-clinical sample. Specifically, we tested whether: selected dimensions of emotion dysregulation were differentially related to PD traits; and whether emotion dysregulation and impulsivity had independent associations with PD traits. A community sample of 399 individuals (mean age= 37.91; 56.6% males) completed self-report measures of PDs, emotion dysregulation and impulsivity. Emotion dysregulation facets and impulsivity had uniform bivariate associations with PD traits, but also evidenced unique associations in multiple regression analyses. Nonacceptance of emotional responses was the emotion dysregulation dimension underlying a wide array of PD. A limited repertoire of effective emotion regulation strategies was characteristic of cluster C PD, whereas emotional unawareness distinctly predicted schizoid PD. Antisocial PD traits were uniquely related to difficulties controlling impulsive behavior when upset. Finally, histrionic, narcissistic, and obsessive-compulsive PD were related to better self-reported emotion regulation. Impulsivity further explained a significant amount of variance in schizotypal, antisocial, borderline (positively), and obsessive-compulsive PD traits (negatively). If replicated in clinical samples, our findings will support the usefulness of targeting both emotional dysregulation and impulsivity in PDs psychotherapy.

Keywords: emotion regulation, personality, negative urgency, emotional nonacceptance, emotion regulation strategies

1. Introduction

Emotion dysregulation and impulsivity are often examined to understand individual differences in personality and personality disorder (PD) traits. A focus on emotion dysregulation and impulsivity is central to understanding the development of PDs, the relations between PD traits and both internalizing and externalizing symptoms, and is therefore considered a crucial element for the prevention and treatment of PDs (Linehan, 1993; Livesley and Jang, 2000; Livesley et al., 2015; Velotti et al., 2016). The present study was designed to examine some lingering questions in this area. Applying a multidimensional framework of emotion regulation, we examined whether: distinct dimensions of emotion dysregulation were differentially associated to PD traits; trait impulsivity contributed incrementally to explain elevations of PD traits or was already subsumed within the multidimensional emotion regulation framework.

1.1. Emotion Regulation: A Multidimensional Construct

A recent influential model describes emotion dysregulation as a multidimensional construct involving: poor awareness and understanding of emotions, lack of acceptance of emotions (i.e., tendency to react with a secondary emotional response, such as feeling angry for feeling sad), reduced ability to control impulsive behavior and behave in accordance with desired goals when experiencing negative emotions, and an inability to flexibly use effective emotion regulation strategies, in order to modulate emotional responses and to meet individual goals and situational demands (Gratz and Romer, 2004). It should be emphasized that, in this context, the inability to refrain from impulsive behavior refers to a form of state-dependent difficulties in controlling behavior that is fundamentally affect-laden (i.e., in the presence of strong arousal), and not to impulsivity *per se*. Emotion dysregulation is considered a hallmark of borderline PD (Carpenter and Trull, 2013), but emerging evidence suggests that impairments in these domains of emotion regulation may be related to PD traits more generally (Dimaggio et al., 2017; Livesley et al., 2015; Sarkar and Adshead, 2006; Velotti and Garofalo, 2015). Beyond borderline PD, most prior studies have focused on PD traits belonging to the former cluster B of DSM-based (APA, 2013) PDs (i.e.,

narcissistic, histrionic, and antisocial; Livesley et al., 2015). Only in recent years has the study of emotion dysregulation extended to include other forms of personality pathology, such as dependent and avoidant PD (i.e.., cluster C PDs; Loas et al., 2011; Nicolò et al., 2014). Further, recent studies have highlighted associations between paranoid PD traits (which belonged to cluster A PDs) and problems in regulating emotional states like anxiety and anger (Salvatore et al., 2012). However, given the multidimensional nature of emotion regulation, it remains unclear whether distinct dimensions of emotion dysregulation have differential associations with PD traits, or whether different PDs show similar profiles of emotion dysregulation. Additionally, some scholars have proposed that a multidimensional conceptualization of emotion dysregulation may also account for associations between PD traits and impulsivity, hence providing a more parsimonious understanding of PD traits (Sebastian et al., 2013), but this possibility is still in need of empirical support (Fossati et al., 2013). Such knowledge would be valuable to inform etiological theories of PDs and to identify potential goals in prevention and intervention programs for PDs.

1.2. Impulsivity and PD traits

Impulsivity is defined as the tendency toward rapid, unplanned reactions to internal or external stimuli with diminished regard to the negative consequences of these reactions on both the self and the others (Moeller et al., 2001). In contrast with the affect-laden form of impulse dyscontrol mentioned above, we refer here to the trait-like disposition to act without thinking, not considering state-affect. Impulsivity is considered one the mechanisms linking PD traits and several forms of maladaptive behavior, including both internalizing (e.g., self-harm) and externalizing (e.g., aggression) symptoms (Fossati et al., 2004; Linehan, 1993 Lynam and Miller, 2004; Sharma et al., 2014). As in the case of emotion dysregulation, previous research on impulsivity and PD traits has mostly focused on some selected PDs, such as borderline (Fossati et al., 2013; Linehan, 1993; Sebastian et al., 2013) and antisocial PDs (Moeller et al., 2001; Fossati et al., 2004). In one study that has examined links between impulsivity and a wide array of PD traits in a clinical sample, Fossati et al. (2007) found that trait impulsivity was uniquely and positively related to borderline

and antisocial PD traits, while negatively associated with obsessive-compulsive PD traits. Further, impulsivity was not associated with other PDs, including histrionic and narcissistic PD. Therefore, it may be that unlike emotion regulation, impulsivity is more specific to some forms of PDs.

Furthermore, some scholars have argued that, although impulsivity is related to PDs, and borderline PD in particular, this association could merely reflect underlying emotional dysregulation, rather than representing a "true" relation (Sebastian et al., 2013). However, at least with respect to borderline PD traits, prior studies have revealed that trait impulsivity explained incremental variance in borderline PD traits above and beyond the influence of emotion dysregulation in both adult (Chapman et al., 2008) and adolescent samples (Fossati et al., 2013). Yet, it remains unclear whether the independent contribution of emotion dysregulation dimensions and impulsivity extends to other PD traits, including antisocial PD.

1.3. The Present Study

Elaborating on the above conceptual and empirical background, we sought to explore the unique associations of emotion dysregulation dimensions and traits impulsivity with PD traits in a moderately large community sample. In line with prior studies (e.g., Dimaggio et al., 2017), we expected that both emotion dysregulation would be transversally associated with PD traits, besides borderline and antisocial. Further, we expected that impulsivity would explain incremental variance in borderline and antisocial PD traits, in light of previously reported strong associations between impulsivity and these two forms of personality pathology (Fossati et al., 2013; Moeller et al., 2001). Due to the paucity of prior studies, our investigation of whether selected dimensions of emotion dysregulation would be differentially related to PD traits, and whether impulsivity added incrementally to the explanation of individual differences in other PD traits, was exploratory.[1]

[1] Because emotion dysregulation and impulsivity are present in conceptualizations of some PDs, it may be argued that there is a risk of inflated correlations due to criterion contamination. However, a recent investigation revealed that affectivity (which arguably subsumes emotion dysregulation) and impulsivity are only minimally represented in the DSM PD criteria (i.e., in 18% and 6%, respectively, as opposed to 30% and 41% for cognitive and interpersonal impairment, respectively) (Bornstein et al., 2014).

2. Methods

2.1. Participants and Procedures

Participants were recruited through self-referrals in response to advertisements posted online and throughout the community (in three different Italian universities and in various General Practitioners' office), requesting potential volunteers for psychological studies. Inclusion criteria were: a) age between 18 and 65; b) being fluent in Italian; c) being capable to provide written informed consent with full responsibility. Exclusion criteria included: a) current or lifetime serious physical illness, neurological illness, or developmental disorder; b) significant head trauma or substance intoxication in the last 3 months. After providing written informed consent, participants completed self-report questionnaires in individual or small-group session, with durations ranging from 45 to 75 minutes. Of the original 446 participants who agreed to take part in the study, 19 did not complete the whole questionnaire packages, while 28 yielded invalid profiles at the instrument for measuring PD traits. The final sample consisted of 399 nonclinical adult, composed of 226 (56.6%) males and 173 (43.4%) females. Participants' mean age was 37.91 years (SD = 12.27). Regarding education, 24.7% held a lower qualification than a high school diploma, 42.5% earned a high school diploma and 32.8% had university education or post graduated education. The distribution of these demographic characteristics (i.e., gender, age, and educational level) differed significantly from the characteristics of the overall Italian population (all *p*s < .05).[2] All procedures were approved by the Research Ethics Board of the Department of Dynamic and Clinical Psychology, Sapienza University of Rome.[3]

2.2. Measures

[2] In the Italian general population, the proportion of men is 49.6%, mean age is 45.2 years, and educational level is distributed as follows: 49.65% lower than high school diploma, 35.9% high school diploma, and 14.4% university or pot-graduate degree (Source: www.istat.it, retrieved on May 22, 2018).

[3] This was the affiliation of the corresponding author when the data collection was conducted.

2.2.1. Millon Clinical Multiaxial Inventory-III (MCMI-III; Millon, 2006). PD traits were assessed using the Italian version of the MCMI-III, a 175-item True/False self-report measure assessing 14 personality patterns and 10 clinical disorders according to Millon's personality theory (Millon et al., 2004). Items assessing PDs correspond closely to criteria still included in the DSM-5 (APA, 2013). Scores on the MCMI-III scales can be considered indicative of the presence of a PD trait if equal to or greater than 75, whereas scores of 85 and above are considered indicative of possible presence of the corresponding PD. Evidence supports its validity in nonclinical samples, with the warning that it should not be used for diagnosis or clinical decisions (Craig, 2005). Accordingly, we only used dimensional scores. The Italian version of the MCMI-III (Millon, 2006) demonstrated adequate psychometric properties and was used in the present study. Only valid profiles were included in the sample, based on the criteria indicated in the MCMI-III manual (Millon, 2006). In accordance with the study aims, we included the 10 PDs scales included in the DSM-5 (APA, 2013). In line with the traditional DSM taxonomy and for the sake of clarity in displaying the results, we refer to the three clusters that contained the 10 PDs: cluster A (paranoid, schizoid, and schizotypal PDs), cluster B (histrionic, borderline, narcissistic, and antisocial PDs), and cluster C (dependent, avoidant, and obsessive-compulsive PDs). Of note, MCMI-III scales are computed so that some items contribute to different scale scores, although with different weight.

2.2.2. Difficulties in Emotion Regulation Scale (DERS; Gratz and Roemer, 2004). The DERS is a 36-item self-report questionnaire designed to assess emotion dysregulation. Participants were required to indicate how often each item applies to them on a scale ranging from 1 (almost never) to 5 (almost always). The DERS measures six dimensions consistent with Gratz and Reoemer (2004) conceptualization: nonacceptance of emotional responses (Nonacceptance); difficulties engaging in goal-directed behavior when emotionally upset (Goals); impulse control difficulties when distressed (Impulse); inconsistent focus on feelings and lack of emotional awareness (Awareness); limited access to effective emotion regulation strategies (Strategies); and lack of emotional clarity (Clarity). On all scales, higher scores indicate greater difficulties in

emotion regulation. The DERS has demonstrated good psychometric properties in both its original version (Gratz and Roemer, 2004) and its Italian translation (Giromini et al., 2012) used in the present study.

2.2.3. Barratt Impulsiveness Scale (BIS-11; Patton et al., 1995). To assess trait impulsivity, we used the BIS-11, a 30-item Likert-type self-report questionnaire which taps three dimensions of impulsivity: motor impulsiveness, attentive impulsiveness, and non-planning impulsiveness. The BIS-11 total score provides a composite measure of trait impulsivity, with higher scores indicating greater impulsivity, and its reliability was adequate in the original validation (Patton et al., 1995), as well as in the Italian adaptation (Fossati et al., 2001). However, since the factor structure of the Italian version did not properly replicate the original one (Fossati et al., 2001), we opted for using the total score only.

3. Results

Table 1 shows descriptive statistics for all study variables, which were reasonably normally distributed. The DERS mean scores were consistent with those reported in the validation study of the Italian version of the DERS (Giromini et al., 2012). Similarly, the BIS-11 mean scores were comparable to those reported in the community samples used in the validation studies of both the original (Patton et al., 1995) and Italian versions (Fossati et al., 2001). Indeed, for both the DERS subscale and BIS-11 total scores, differences between the mean reported in the present sample and the mean reported in the corresponding validation studies were trivial in magnitude (i.e., Cohen's *d* ranging between .01 and .23). Finally, the MCMI-III mean scores were all below clinical cut-offs reported in the MCMI-III manual.[4] Overall, the mean levels in this sample were typical of a community population.

[4] We did not have access to the mean scores reported in the Italian validation of the MCMI-III

ANOVA results showed gender differences on some study variables. Males scored higher on the Awareness scale of the DERS, $F(1, 396) = 14.54$; $p < 0.05$, as well as on the schizoid scale of the MCMI-III, $F(1, 396) = 12.42$; $p < 0.05$, while females scored higher on obsessive-compulsive, $F(1, 396) = 4.81$; $p < 0.05$, histrionic, $F(1, 390) = 60.90$; $p < 0.05$, and narcissistic, $F(1, 391) = 7.29$; $p < 0.05$ PD scales of the MCMI-III. Correlation analyses revealed that age was positively related to schizoid and obsessive-compulsive PD traits, rs = 0.24 and 0.13, respectively, ps < 0.05, and negatively related to the DERS Clarity scale, $r = -0.19$, $p < 0.01$. Therefore, age and gender were entered as covariates in the main study analyses.

[Table 1 here]

Correlation coefficients among the six DERS dimensions, the BIS-11 total score and the PDs scales of the MCMI-III are reported in Table 2. Results showed that all DERS dimensions and BIS-11 total score were significantly and positively related to schizoid, schizotypal, avoidant, antisocial, and borderline, and significantly and negatively related to histrionic and obsessive-compulsive PD scales. Furthermore, Nonacceptance, Goals, Impulse, Strategies and Clarity and BIS-11 total score were significantly and positively related to paranoid and dependent PD, and negatively related to narcissistic PD. Finally, the BIS-11 total score was significantly and positively correlated with all DERS dimensions.[5]

[Table 2 here]

Hierarchical multiple regression analyses were performed in order to investigate the independent effects of emotion dysregulation and impulsivity on PD traits, entering one PD scale of the MCMI-III at a time as the dependent variable in each regression model. Throughout multiple

[5] Correlation results were virtually unchanged when analyses were repeated including age and gender as covariates in partial correlation analyses.

regression analyses, VIF values ranged from 1.31 to 3.26, indicating that multicollinearity did not bias regression findings.[6]

[Table 3, 4, and 5, here]

Results of hierarchical multiple regression analyses predicting cluster A PD traits (Table 3) revealed that, after controlling for age and gender, Awareness was uniquely and positively related to schizoid PD, in a model that explained 17% of additional variance (i.e., above and beyond age and gender); furthermore, the DERS Nonacceptance scale was uniquely related to paranoid PD traits, in a model that explained 18% of the variance. Finally, the Nonacceptance and Goals scales of the DERS and the BIS-11 total score were uniquely and positively related to schizotypal PD, explaining 24% of total variance.

With regard to cluster B PD traits, results of hierarchical multiple regression analyses (Table 4) suggested that, after controlling for age and gender, emotion dysregulation and impulsivity predicted 15% of the variance in histrionic PD, with the Strategies scale of the DERS as a unique significant (and negative) predictor. The model predicting narcissistic PD traits explained an additional 9% of variance. Only Strategies was uniquely and negatively related to narcissistic PD. On the other hand, the Impulse scale of the DERS and the BIS-11 total score were uniquely and positively related to antisocial PD, in a model that explained 27% of incremental variance. Next, the DERS Impulse, Nonacceptance, Goals and Strategies scales, as well as the BIS-11 total score, were uniquely and positively related to borderline PD; the variables included in Step 2 explained 39% of additional variance.

[6] Although each regression model contained 9 predictors (including covariates), considering that the nature of our study was largely exploratory and that the sample was reasonably large, we did not adopt alpha adjustments such as the Bonferroni procedure, which could have been too conservative for the purpose of this work (Perneger, 1998). However, for interested readers, we also reported in the tables the coefficients that were significant also at the Bonferroni-adjusted significance level (i.e., $\alpha = 0.006$).

Hierarchical multiple regression analyses predicting cluster C PD scales (Table 5) indicated that, after controlling for age and gender, Nonacceptance and Strategies were uniquely and positively related to avoidant PD traits, in a model that explained an additional 26% of the variance. Similarly, Nonacceptance, Goals and Strategies were uniquely and positively related to dependent PD, in a model that explained 32% of additional variance. Finally, Impulse and BIS-11 total score were uniquely and negatively related to obsessive-compulsive PD, in a model that explained 17% of incremental variance.

4. Discussion

Overall, the present findings showed that many domains of emotion dysregulation were related to a wide range of PD traits. In line with recent studies (Dimaggio et al., 2017), this suggests that emotional nonacceptance, difficulties in pursuing individual goals when experiencing negative emotions, difficulties in refraining from impulsive behavior when distressed (i.e., negative urgency), a lack of adaptive emotion regulation strategies and poor ability to define what one feels (i.e., lack of emotional clarity), may be broadly related to PD traits. However, in the present study, after controlling for the shared variance among all dimensions of emotion dysregulation and trait impulsivity by simultaneously entering them as independent variables in multiple regression models, none of the PDs were related to a lack of emotional clarity. This suggests that the associations that emotional clarity showed when examining zero-order correlations could be explained by its partial overlap with other emotion dysregulation facets. For instance, one could argue that people experiencing difficulties in regulating emotions are likely to lose interest in acknowledging their own feelings, in turn leading to poor knowledge and clarity about emotions.

The lack of associations, or presence of negative correlations, between emotion dysregulation, impulsivity, and both narcissistic and histrionic PD traits was somewhat unexpected. It is possible that the MCMI-III assesses more adaptive features of these disorders, such as sociability, self-esteem, and extraversion. This seems consistent with Millon's theory (Millon et al., 2004), which defines narcissistic and histrionic PDs as extreme variants of "confident" and

"sociable" personality, respectively. An alternative explanation is that individuals with heightened traits of histrionic and narcissistic traits may tend to report more socially desirable answers, or over-estimate their regulatory abilities, which may have biased our findings (Carlson, Vazire, & Oltmanns, 2011). For instance, similar findings have previously been reported with regard to histrionic PD, which was inversely associated with neuroticism (Fossati et al., 2007) indicating intact emotion regulation skills. Similarly, individuals with narcissistic PD traits have previously been reported to be extremely confident in their own abilities to manage and control their emotions, as well as confident to be in charge of their own faith and invulnerable to emotional troubles (Pincus and Lukpwirsky, 2010). The similar pattern of associations between histrionic and narcissistic PD traits may also be due to the conceptual overlap between the two PDs, especially as operationalized in the MCMI-III (i.e., it is possible that some MCMI-III items belong to both histrionic and narcissistic PD scale scores, although with different weight). On the other hand, negative correlations between emotion dysregulation and obsessive-compulsive traits were expected, suggesting that obsessive-compulsive PD could be more characterized by emotional over-regulation than emotion dyscontrol (Fossati et al., 2007).

When examining the differential relations between emotion dysregulation dimensions and PD traits, we found that indeed some dimensions of emotion dysregulation differentially predicted selected PDs across all clusters, while others were transversally linked to PD traits. Nonacceptance of emotional responses was a significant predictor of PD traits across all clusters, being positively related to paranoid, schizotypal, borderline, avoidant, and dependent PD traits. Thus, a focus on the ability to accept emotions seems a crucial aspect to better understand individual differences in PD traits. Also, a difficulty in engaging in goal-directed behavior when distressed were associated with PD traits across all three clusters, significantly predicting schizotypal, borderline, and dependent PD. This suggests that higher levels of these PD traits could be related to a decreased propensity to tolerate emotional distress as part of the efforts needed to achieve personal goals. Finally, among the cluster A PD traits, schizoid PD traits were uniquely related to a lack of emotional awareness.

This result seemed to support the idea that schizoid PD traits are associated with a lack of interest for emotions (Livesley et al., 2015; Sarkar and Adshead 2006).

Regarding cluster B PDs, our findings confirmed that many dimensions of emotion dysregulation were able to predict the severity of borderline PD traits. In particular, higher scores on borderline PD were associated with greater difficulties in all emotion regulation dimensions, with the exception of emotional awareness and clarity. Besides the above mentioned considerations on the role of emotional clarity, it is also possible that, rather than having difficulties in describing feelings, people with borderline PD show difficulties in regulating them effectively, as well as in integrating them in a coherent representation of the self (Linehan, 1993). As for antisocial PD, we found a unique association with impairments in the Impulse dimension of the DERS, indicating that antisocial traits are linked to difficulties in controlling impulsive behavior when experiencing negative emotions. Further, lack of emotional awareness was negatively related to histrionic and narcissistic PD traits, suggesting that people with these traits may well be interested in attending to their own emotions when upset.

As for cluster C, avoidant and dependent PD shared some characteristics. Indeed, both were predicted by emotional nonacceptance and lack of confidence in emotion regulation strategies. Thus, people with avoidant and dependent traits are likely not to trust in their own abilities to regulate emotions relying on contextually-appropriate strategies. Believing that they cannot do anything to feel better when emotionally upset, they might fail to rely on personal resources to cope with distress (Nicoló et al., 2014). Furthermore, dependent PD was also associated with difficulties engaging in goal-directed behavior when distressed, suggesting that people with high dependent traits might exhibit low distress tolerance. Finally, as expected, obsessive-compulsive traits were negatively related to negative urgency.

It is worth emphasizing that results of multiple regression analyses – which appear to highlight specific associations between distinct emotion dysregulation domains and selected PD traits – should be interpreted in the light of the pattern of zero-order correlations, which seemed to

suggest widespread associations between emotion dysregulation domains and PDs. That is, although only the unique variance in some, but not in all, emotion dysregulation domains was related to selected PD traits but, when examining the entire variance in each emotion dysregulation dimensions, it appears that PD traits are related with broader, rather than specific, emotion regulation difficulties. This finding has treatment implications, as clinician may be willing to focus on overall deficit in emotion regulation skills, as they are very much likely to co-occur, more than on specific facets. Yet, it appears that targeting specific emotion regulation skills, such as emotional acceptance, may deserve priority in light of its robust associations with PD traits.

Notably, trait impulsivity showed an additional and independent contribution (i.e., above and beyond emotion dysregulation) to schizotypal, antisocial and borderline PD traits, whereas it was negatively related with obsessive-compulsive PD traits. Not surprisingly, cluster C PDs were not associated with negative urgency nor with trait impulsivity, and the expected negative relation between trait impulsivity and obsessive-compulsive traits was confirmed. Conversely, in both cluster A and cluster B, impulsivity showed to play an independent and unique contribution on PD traits, rather than only representing the effect of underlying emotion dysregulation, confirming previous findings on borderline PD in adolescence (Fossati et al., 2013) and in clinical samples (Chapman et al., 2008). Thus, our findings corroborate the hypotheses that emotion dysregulation and impulsivity only partially overlap in predicting PD features, and extend previous knowledge on impulsivity suggesting that it may play a role also in schizotypal PD traits, beyond antisocial and borderline PDs.

Overall, borderline traits were strongly related (more than any other PDs) with emotion dysregulation and impulsivity, showing the largest amount of variance explained. Avoidant and dependent traits were also strongly related to poor emotion regulation, but not impulsivity. The effect sizes for these associations are striking, and consistent with earlier studies in clinical sample (Dimaggio et al., 2017). This warrants clinical attention to emotion dysregulation in PDs above and beyond borderline PD. Further investigations may explore the possible reciprocal associations

between emotion regulation and interpersonal patterns in individuals with PDs. Antisocial PD exhibited an inverse pattern, with a more prominent role of impulsivity, both state-dependent (i.e., negative urgency) and trait-like. Finally, cluster A PDs were mainly related to emotion dysregulation in the domains of nonacceptance and low distress tolerance. Two features differentiated schizoid, paranoid, and schizotypal PD styles, with the former being affected by lack of emotional awareness, and the latter by impulsivity. It is worth noting that schizotypal PDs was uniquely associated with trait impulsivity but not with DERS-assessed impulse dyscontrol (negative urgency), suggesting that different aspects of impulsivity (e.g., the tendency to live day by day without forethought or accurate planning, as opposed to a difficulty in refraining from impulsive behavior when emotionally upset) can be selectively impaired.

The broader picture seems to suggest that, besides the well-established relevance of emotion dysregulation and impulsivity for borderline PD, emotion dysregulation dimensions and – to a lesser extent – trait impulsivity characterize impairments in personality functioning more generally, and therefore should be carefully considered for further investigations in order to better understand their role in personality pathology, as well as in specific PDs. These findings are in line with the new trait-based model for PDs proposed in the DSM-5 Section III (APA, 2013), which places more emphasis on maladaptive personality traits than on categorical diagnosis. Indeed, we reported some evidence of similarities between clusters, and differences within clusters, in terms of self-reported emotion dysregulation and impulsivity, therefore challenging the existence of a net distinction between PDs and between clusters of PDs. The other key element of our investigation was to test whether emotional dysregulation and impulsivity were fully or only partly overlapping. Our findings supported the second perspective, according to which they represent two separate, albeit related, constructs that are relevant for personality pathology. This finding is consistent with the alternative model for PDs proposed in the DSM-5 Section III (APA, 2013), which includes impulsivity and emotion dysregulation in two separate trait-domains (i.e., disinhibition and negative

affectivity, respectively, at least to the extent that emotion dysregulation overlaps with the emotional lability trait in the DSM-5 terminology).

4.1. Limitations

Despite the promising findings of our study, some caveats are worth noting, also representing directions for future research and cautionary statements when generalizing our results. First, focused on a community sample, hence replications in clinical samples are needed. In addition, we relied on a convenience sampling procedure, and our sample was not representative of the general Italian population, being relatively more educated, younger, and with a greater proportion of men compared to the national demographic characteristics. Therefore, replications in more diverse samples, and ideally in samples that are representative of the general population, are warranted. Second, we only relied on self-report measures, which may have inflated correlations results due to shared method variance. Specifically, we used a composite measure of trait impulsivity, while future research could adopt a multidimensional assessment of impulsivity. Relatedly, some aspects of both emotion dysregulation and impulsivity might be better captured by laboratory assessment, such as behavioral tasks or biological parameters (Sebastian et al., 2013). Therefore, extensions of the present investigations using multi-method assessment are warranted to examine the robustness of our results. Finally, the correlational design of our study prevents from drawing inferences about the reciprocal influences between emotion dysregulation, impulsivity, and PDs over time. Longitudinal investigations would be invaluable to explore whether improvement in emotion regulation and impulse control can predict improvements in personality functioning, in order to provide clinicians with empirically-based evidence to tailor treatment programs.

4.2. Conclusions

Notwithstanding these limitations, our study was among the first exploring similarities and differences among PD traits in terms of emotion dysregulation and impulsivity, examining the unique contribution of each construct. Thus, these findings have clear relevance to increase current knowledge in understanding and describing different PDs, also providing preliminary insights that

can be used to investigate their possible etiological pathways. Furthermore, the present findings appear to highlight the importance of tailoring assessment and interventions to prevent or treat personality pathology by focusing on specific deficits related to different PD traits, while suggesting that emotional nonacceptance could be central for personality pathology more generally.

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Table 1

Mean, Standard Deviation (S.D.), Skewness, Kurtosis and Cronbach's α for all study variables (N = 399).

	Mean	*S.D.*	*Skewness*	*Kurtosis*	*Cronbach's α*
DERS Nonacceptance	13.51	5.67	0.74	-0.20	0.87
DERS Goals	13.58	4.77	0.42	-0.36	0.85
DERS Impulse	12.05	4.92	0.93	0.98	0.84
DERS Awareness	14.06	4.32	0.52	0.24	0.63
DERS Strategies	16.70	6.95	0.95	0.70	0.89
DERS Clarity	10.03	3.88	0.97	0.98	0.78
BIS-11	63.13	8.11	0.59	0.88	0.80
Schizoid	51.18	23.75	-0.70	-0.56	0.79
Paranoid	47.53	27.49	-0.44	-0.90	0.81
Schizotypal	39.68	28.55	-0.30	-0.98	0.85
Histrionic	55.26	18.32	0.06	0.35	0.75
Narcissistic	69.34	17.09	0.05	0.99	0.83
Antisocial	45.42	23.46	-0.13	-0.91	0.81
Borderline	37.34	26.48	0.14	-0.22	0.79
Avoidant	42.36	28.68	0.03	-0.95	0.87
Dependent	46.99	26.47	-0.10	-0.92	0.83
Obsessive-compulsive	55.46	13.69	0.09	0.93	0.75

Note. DERS= Difficulties in Emotion Regulation Scale, subscale scores. BIS-11= Barratt Impulsiveness Scale, total score. Schizoid to Obsessive-compulsive are all scales of the Millon Clinical Multiaxial Inventory-III.

Table 2

Correlation coefficients of the six DERS subscales and BIS-11 total score with personality disorders scales of the MCMI-III (N = 399).

	Nonacceptance	Goals	Impulse	Awareness	Strategies	Clarity	BIS-11
Schizoid	0.29**	0.26**	0.29**	0.24**	0.31**	0.23**	0.24**
Paranoid	0.37**	0.32**	0.33**	0.08	0.34**	0.19**	0.27**
Schizotypal	0.40**	0.37**	0.39**	0.13*	0.39**	0.27**	0.34**
Histrionic	-0.23**	-0.22**	-0.31**	-0.20**	-0.34**	-0.22**	-0.20**
Narcissistic	-0.11*	-0.13*	-0.15**	-0.01	-0.25**	-0.13*	-0.01
Antisocial	0.29**	0.29**	0.40**	0.17**	0.29**	0.31**	0.44**
Borderline	0.49**	0.45**	0.53**	0.15**	0.53**	0.38**	0.44**
Avoidant	0.42**	0.38**	0.37**	0.11*	0.47**	0.32**	0.23**
Dependent	0.49**	0.44**	0.39**	0.04	0.52**	0.32**	0.30**
Obsessive-compulsive	-0.18**	-0.23**	-0.34**	-0.18**	-0.26**	-0.26**	-0.31**
BIS-11	0.38**	0.37**	0.48**	0.13*	0.43**	0.30**	

Note. Nonacceptance to Clarity are all scales of the Difficulties in Emotion Regulation Scale0. BIS-11= Barratt Impulsiveness Scale total score. Schizoid to Obsessive-compulsive are all scales of the Millon Clinical Multiaxial Inventory-III.

*$p < 0.05$; **$p < 0.01$.

Table 3

Hierarchical multiple regression analyses examining the unique associations between emotion dysregulation dimensions, impulsivity and cluster A personality disorders traits (N = 399).

	Schizoid		Paranoid		Schizotypal	
	β	sr^2	β	sr^2	β	sr^2
Step 1: R^2	0.07**		0.01		0.00	
Age	0.22**	0.05**	0.10	0.01	0.00	0.00
Gender	-0.13**	0.02**	-0.2	0.00	-0.03	0.00
Step 2: R^2	0.24**		0.19**		0.24**	
Nonacceptance	0.11	0.01	**0.22****	0.02**	**0.20****	0.02**
Goals	0.09	0.00	0.12	0.01	0.15*	0.01
Impulse	0.01	0.00	0.05	0.00	0.09	0.00
Awareness	**0.19****	0.03**	0.07	0.00	0.10	0.01
Strategies	0.13	0.01	0.03	0.00	0.03	0.00
Clarity	0.04	0.00	-0.02	0.00	0.01	0.00
BIS-11	0.06	0.00	0.10	0.01	0.15**	0.02*
ΔR^2	0.17**		0.18**		0.24**	

Note. Nonacceptance to Clarity are all scales of the Difficulties in Emotion Regulation Scale (DERS). BIS-11= Barratt Impulsiveness Scale total score. Schizoid to Schizotypal are scales of the Millon Clinical Multiaxial Inventory-III (MCMI-III). Gender was dummy-coded such that 1= female. Bolded coefficients are significant at the Bonferroni-adjusted significance level (i.e., $\alpha < 0.006$).

*$p < 0.05$; **$p < 0.01$

Table 4

Hierarchical multiple regression analyses examining the unique associations between emotion dysregulation dimensions, impulsivity and cluster B personality disorder traits (N= 399).

	Histrionic		Narcissistic		Antisocial		Borderline	
	β	sr^2	β	sr^2	β	sr^2	β	sr^2
Step 1: R^2	0.14**		0.02*		0.01		0.01	
Age	-0.01	0.00	-0.01	0.00	-0.10*	0.01*	-0.07	0.00
Gender	0.37**	0.13**	0.13*	0.02*	-0.05	0.00	-0.06	0.00
Step 2: R^2	0.29**		0.11**		0.28**		0.40**	
Nonacceptance	0.02	0.00	0.13	0.01	0.08	0.00	**0.16****	0.01**
Goals	0.01	0.00	0.04	0.00	0.08	0.00	0.11*	0.01*
Impulse	-0.08	0.00	0.03	0.00	**0.22****	0.02**	0.14*	0.01*
Awareness	-0.10	0.01	0.05	0.00	0.10	0.01	0.09	0.01
Strategies	**-0.30****	0.03**	**-0.42****	0.05**	-0.16	0.01	0.15*	0.01*
Clarity	-0.02	0.00	-0.06	0.00	0.07	0.00	0.03	0.00
BIS-11	-0.04	0.00	0.10	0.01	**0.33****	0.07**	0.17**	0.02**
ΔR^2	0.15**		0.09**		0.27**		0.39**	

Note. Nonacceptance to Clarity are all scales of the Difficulties in Emotion Regulation Scale (DERS). BIS-11= Barratt Impulsiveness Scale total score. Histrionic to Borderline are scales of the Millon Clinical Multiaxial Inventory-III (MCMI-III). Gender was dummy-coded such that 1= female. Bolded coefficients are significant at the Bonferroni-adjusted significance level (i.e., $\alpha < 0.006$).

*$p < 0.05$; **$p < 0.01$

Table 5

Hierarchical multiple regression analyses examining the unique associations between emotion dysregulation dimensions, impulsivity and cluster C personality disorders traits (N= 399).

	Avoidant		Dependent		Obsessive-compulsive	
	β	*sr²*	*β*	*sr²*	*B*	*sr²*
Step 1: R^2		0.01		0.00		0.16**
Age	0.08	0.00	-0.05	0.00	0.19**	0.03
Gender	-0.08	0.00	-0.05	0.00	0.38**	0.14
Step 2: R^2		0.27**		0.33**		0.33**
Nonacceptance	0.14*	0.01	**0.22****	0.02**	0.04	0.00
Goals	0.12	0.01	**0.16****	0.01**	-0.05	0.00
Impulse	-0.06	0.00	-0.11	0.00	**-0.20****	0.01**
Awareness	0.05	0.00	-0.03	0.00	-0.06	0.00
Strategies	**0.30****	0.03**	**0.26****	0.02**	-0.02	0.00
Clarity	0.10	0.01	0.10	0.01	-0.06	0.00
BIS	0.00	0.00	0.07	0.00	**-0.22****	0.04**
ΔR^2		0.26**		0.32**		0.17**

Note. Nonacceptance to Clarity are all scales of the Difficulties in Emotion Regulation Scale (DERS). BIS-11= Barratt Impulsiveness Scale total score. Schizoid to Schizotypal are scales of the Millon Clinical Multiaxial Inventory-III (MCMI-III). Gender was dummy-coded such that 1= female. Bolded coefficients are significant at the Bonferroni-adjusted significance level (i.e., $\alpha < 0.006$).

*$p < 0.05$; **$p < 0.01$

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