Reviewer's report

Title: ADHD in adolescents with borderline personality disorder

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Reviewer: Andrea Fossati

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In the present manuscript, the authors aim to assess the prevalence of current/childhood ADHD in a sample of BPD adolescents and to evaluate if comorbid BPD/ADHD is characterized by specific impulsivity components. In my opinion, the present version of this manuscript suffers from several limitations that I will try to detail below.

1. One of the major limitation of this study is clearly - albeit unwittingly - described in the Introduction by the authors, when they convincingly indicate that consistent data already exist that indicate that ADHD may represent a risk factor for BPD. Rather, limited evidence is currently available as to the developmental pathways leading to BPD from childhood ADHD; unfortunately, the present study represent the -nth cross-sectional study on the interface between BPD and ADHD, providing no original data - or even suggestion - on the developmental process starting from childhood ADHD and ending with adult or adolescent BPD.

2. The sampling and research design of the current study are also problematic. Eighty five BPD participants would represent an adequate sample if a) the participants have been randomly selected or at least consecutively admitted and b) the study was based on a single center. In this multi-center study, 85 participants selected from a pool of 107 referred participants indicate that on average each center referred roughly 20 BPD participants, who could be also inpatients or outpatients (i.e., they could have different severity levels or comorbid axis I conditions). Although the authors declared that in each center all adolescents that were consecutively admitted from January to December 2007 were screened for BPD (see Participants paragraph), what actually happened (see Results) was that clinicians decided the participants that should be included in the sample based on their idiosyncratic clinical judgment that the participants was likely to meet DSM-IV BPD criteria. The lack of any within-center and between-center inter-rater reliability data as to this "pre-screening" make things even worse. In other terms, the final "sample" seems to represent a highly biased study group, based on very small number of participants who were selected by the psychiatrists who referred them for the study rather than actually sampled. Moreover, it is unclear if the selecting psychiatrists used homogenous criteria - i.e., had adequate inter-rater agreement - as to assessing DSM-IV criteria. I am not saying that two-stage sampling should not be used; I am simply saying that two-stage sampling requires appropriate screening and sampling procedures that were not followed in this study. By the way, using schizophrenia as the only psychiatric exclusion criterion made things worse, since included participants with mood disorder diagnoses or borderline IQ who are likely to be misdiagnosed...
as suffering from BPD, particularly when BPD diagnostic criteria are clinically assessed. The fact that the majority of these BPD clinical diagnoses was confirmed by SIDP-IV assessment does not reassure me at all as to the validity of this approach, considering that current scientific evidence suggest that axis II interviews increase the reliability of the diagnoses, but not their validity.

Multi-center studies are highly valuable since they increase the generalizability of the findings, provided that a) the sampling procedure is adequate - and unfortunately, this is not the case of the present study, and b) the centers are homogeneous as to the characteristics of the participants or the between-center variability is entered in the design of study and in the statistical analyses. I regret to say, that the authors did not consider any of these topics (for instance, they did not consider the hierarchical nature of their observations when they performed logistic regression analyses).

3. I have major concerns also as to assessment procedures. The CLSPD data indicate that in adulthood BPD is characterized by an admixture of trait-like features and sympto-like characteristics; as a result, the BPD diagnosis seem to be much less consistent over time than it was previously thought. Miller, Muehllemkamp, and Jacobson (2008) convincingly showed that BPD in adolescence may be reliably diagnosed, but the diagnosis is even less stable than in adulthood and may remit during adolescence in a non-negligible proportion of adolescents. It is unclear to me how the authors managed the problem of the potential instability of their BPD diagnoses. I agree with the authors that the BIS-11 is one of the most widely used instrument to assess trait impulsivity. However, Ernest Barratt and colleagues deemed the BIS-11 items adequate only for adults; this was the reason for developing an adolescent version of the BIS-11. This version can be downloaded and used with no charges. Thus, I cannot find any reason to use the adult version of the scale which can give inaccurate results in adolescent samples. By the way, this may be one of reasons for the somewhat odd association between ADHD and cognitive impulsivity (rather than attention or motor impulsivity) that was reported in the present study. Finally, there are no agreed upon data showing that the DIB-R represent a severity index of DSM-IV BPD, particularly in adolescence (by the way, the authors should specify what they consider severity of BPD, since several definition of severity are currently used in PD research).

4. Miscellaneous concerns. The authors report a prevalence of current ADHD symptoms of 11% which is the lowest among all the study that the authors reported in the introduction. I suspect that the major reason for this finding lies in the sampling and assessment biases that I listed above. The lack of a control group of non-BPD adolescents strongly undermine the specificity of the findings of the present study. Finally, I suspect that the current version of the manuscript may perplex both clinicians and researchers as to its usefulness.

Level of interest: An article of limited interest

Quality of written English: Acceptable
Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests