Anhedonia is associated with attenuated reward response bias in first-degree relatives of patients with major depression

Liu et al.

Suggestions: accept with minor revisions

The authors presented a paper exploring reward biases and anhedonia in first degree relatives of acutely depressed patients. As part of their study relatives completed clinical questionnaires and a behavioral task measuring reward response biases. The authors showed that compared to healthy controls relatives with high anhedonia levels display a reduced reward bias. The authors concluded that a reduced motivational processing may be a predisposing vulnerability trait for depression.

I found this manuscript intriguing as anhedonia can indeed be a vulnerability marker of depression and may lead to reduced motivational levels. I think this paper deserves to be published in JAD. I would like to suggest a few changes that may increase the impact factor of this manuscript.

1. Abstract: please provide age and gender (e.g. n of females) of the participants. Please provide the name of the behavioral task measuring reward response bias. If possible also provide a brief definition of reward bias in the abstract and add a sentence linking motivation and anhedonia in the background section. This kind of information would help understand the authors’ statement in the conclusions section.
2. References are missing. Please make sure to submit a manuscript with appropriate JAD references.
3. For the unfamiliar reader the connection between anhedonia, motivation and depression may not intuitive. I would recommend the authors talk a bit more about this topic in the background section. I would also encourage them to address the importance of studying anhedonia in relatives of MDD patients.
4. Page 4: the authors mention “altered reward bias” but do not mention is it increased or decreased. Please clarify.
5. Page 5: please provide the name of the unstructured diagnostic review the authors used.
6. Please explain how they selected the high and low BDI score. Is 10 the mean/median score in the current population?
7. Could you please explain why you administered both the TEPS and SHAPS. Was one of the aims of the study to determine if there was a difference in state/trait anhedonia in relatives of MDD patients? If so please specify this in the hypotheses. Also since the TEPS include an anticipatory and consummatory component I wonder if the authors expected to observe differences in these components across groups too?
8. Page 9: could you please explain how the formulas for bias and discriminability were created?
9. Did the authors consider splitting HC into high and low hedonics to compare this component in people who are not related to individuals with a mood disorder? If not could please address this topic in the conclusions.
10. Did the authors consider running regression analyses to determine the primary predictors that determine participants’ performance on the behavioral task in HC and relatives?
11. Page 14: section 3.4. is full of information and may be a bit hard to read. Could you please present all these figures in a table for instance?
12. Table 2: please add F, p values and eta squares if possible.

Typos:

1. Page 12: please remove parenthesis on the first line of the page
2. Page 17: “May be able enhance”. Please add “*to”*