Reviewer's report

Title: Serotonin transporter gene polymorphism (5-HTTLPR) L allele interacts with stress to increase anxiety symptoms in Chinese adolescents: a multiwave longitudinal study

Version: 3 Date: 4 September 2015

Reviewer: Kelly Benke

Reviewer's report:

The authors have adequately addressed most of the previous concerns raised, however, the interpretation of their model does require further adjustment:

Major Compulsory Revisions

1. It is stated in the methods that the alleles are coded -1,0,1 (for LL, SL and SS respectively). Thus, a positive term for genotype (beta for 5HTT-LPR = 0.32) should mean that those with SS are highest under a low stress condition, but Figure 1 shows the opposite. The slopes appear to follow what intuitively a negative coefficient would mean, but if those with the LL genotype and high stress are truly at the highest anxiety level, would not the lines for SS and LL cross at some point? Either the figure is incorrect, or there is more detail here that needs to be explained, perhaps relating to the fact that ALEQ is centered around an individual’s mean, however, it will be confusing to the reader without some explanation.

2. In Figure 1, the predicted curves are not explained in the methods or the figure legend. Does this represent girls or boys? At what CESD score, age, etc. is the prediction made? What is meant by low and high stress on the x axis? More detail is needed here for the reader.

3. I’m not happy with the revision:

“After controlling for age, gender, initial anxiety and depressive symptoms, a significant two-way, cross-level interaction between 5-HTTLPR and stress were detected (B=−0.08, p<0.01). Specifically, 5-HTTLPR acted as a moderating role in relationship between stress and anxiety symptoms. Compared with SS carriers, individuals with LL genotype exhibited higher levels of anxiety symptoms in relation to SLEs”.

The second sentence above is redundant – if it is interacting then it is a moderator. I would delete the second sentence and reword the third sentence. My suggestion (feel free to revise):

“After controlling for age, gender, initial anxiety and depressive symptoms, a significant two-way, cross-level interaction between 5-HTTLPR and stress were detected (B=−0.08, p<0.01). As stress levels increase, the anxiety level among
SS carriers appears to increase at a slower rate compared to LL carriers. Another way of saying this is that LL carriers have a moderately heightened anxiety response to stress compared SS carriers.”

Minor Revisions

1. The effect of 5HTT-LRP and stress is significant, but the effect size is modest. The authors should choose language reflecting this throughout the results and discussion, rather than stating the findings as significant. I feel the finding is a bit overstated as it now reads.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests