Reviewer's report

Title: Is Ankyrin a specific genetic risk factor for psychiatric phenotypes?

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Reviewer: Joseph L McClay

Reviewer's report:

The current article addresses the role of three SNP markers in the ANK3 gene in schizophrenia (SZ), bipolar disorder (BD) and major depressive disorder (MDD). All 3 SNPs have previously shown evidence for association with either SZ or BD. Since this prior evidence comes from genome-wide studies, it is of superior quality to candidate gene studies and therefore definitely merits replication studies. The current study attempts replication in rather modestly powered samples (55.1% to replicate reported association with bipolar disorder and of 69.1% with schizophrenia at a rather lax alpha =0.05%). This is not strong, but at least the authors quantify their power to replicate in SZ and BD. The MDD or unipolar depression sample is so small so as to be inconsequential.

Overall, the study produces a modestly significant association with BD with a SNP previously associated with SZ.

Major compulsory revision: My only scientific issue with the article is the nature of the test carried out in FAMHAP. I am not familiar with this program. What test statistic was used? The authors should describe this in more detail.

Otherwise, the only apparent weakness is the use of English, which is frequently grammatically incorrect. However, this does not detract from the reader's understanding of the article. I would suggest that perhaps a native English speaker is contacted to proof-read the text. However, this should not be a barrier to publication.

Level of interest: An article of limited interest

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