This is a well-written systematic review investigating: ‘cold’ and ‘hot’ cognition, functional and structural neuroimaging; and personality/temperament traits in unaffected first-degree relatives of BD patients (URs) and a healthy control (HC) comparison group with no first-degree family history of mental disorders. Research in these fields is on the rise and yet it appears to be still unclear which markers of vulnerability we should focus on when treating at-risk individuals. This systematic search appears to be detailed and exhaustive. Overall the authors follow standard procedures for searching the literature. My primary concern is related to the focus of the research question which is in my opinion too broad to provide an answer to a relevant clinical question. As a result, the discussion section tackles a number of domains but fails to concisely provide a take-home message summarizing primary findings, gaps in the literature and future clinical directions. I have one major and few minor comments that I hope the authors will consider to implement in their work.

1. This review covers 3 major topics of interest such as neurocognition, neuroimaging, and personality/temperament traits. In my opinion these findings would be better presented over 2 reviews. I appreciate the fact that a number of questions still needs to be resolved in this field. However, a shorter and more focused review would provide clear and constructive insight into what needs to be addressed in future research.
2. Could the authors please provide an assessment of the quality of the studies included in this review? Selected studies could be subjected to a refined quality assessment using general critical appraisal guides and design-based quality checklists. If this was not conducted please mention this in the limitations or how the authors approached this.
3. The discussion of the results could include a reference to publication bias. Also please mention how non-published evidence was searched and how the authors checked whether studies were based on the same dataset and/or whether these studies were excluded.
4. Please provide some insight into how these results could be applied to patient care