Author's response to reviews

Title: Do People with Delusions Really Jump to Conclusions? Rationale and protocol for a systematic review and meta-analysis

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Author's response to reviews:

Overview of reviewer comments and changes

We would like to thank the reviewers for their helpful comments regarding this protocol. We have now made the suggested changes and feel the protocol is much improved as a result. The reviewer’s comments are listed below in bold. Our responses are typed beneath each comment. The locations of changes to the manuscript are indicated by page numbers, paragraphs and lines. Quotes from the amended manuscript are in italics.

Response to reviews

Editorial requests

1) Please include your PROSPERO registration number at the end of your abstract.

We have now done this (Page 3).

2) Please include a competing interests section at the end of the manuscript, before the reference list. If the authors have no competing interests, please state: "The authors declare that they have no competing interests."

We have now added this section before the reference list (Page 15).

3) If applicable, please include an acknowledgement section at the end of the manuscript before the reference list. Please acknowledge anyone who contributed towards the study by making substantial contributions to conception, design, acquisition of data, or analysis and interpretation of data, or who was involved in drafting the manuscript or revising it critically for important intellectual content, but who does not meet the criteria for authorship. Please also include the source(s) of funding for all authors. Authors should obtain permission to acknowledge from all those mentioned in the Acknowledgements. Please state clearly whether or not you have funding in the acknowledgement section. If there is no funding, please state this.
We have included an acknowledgements section whereby we note the only funding source for the manuscript (Page 16): “The publication of this protocol was supported by funding from the Lena Teague bequest fund. There were no further funding sources”. There were no further people or sources to acknowledge.

4) Please include an Authors’ Contributions section at the end of the manuscript, before the reference list. Each author should be listed individually. We suggest the following kind of format (please use initials to refer to each author’s contribution): “EP: conception and design, data collection and analysis, manuscript writing and final approval of the manuscript. SP: data collection and analysis, critical revision and final approval of the manuscript. MG: data collection and analysis, critical revision and final approval of the manuscript. AP: data collection and analysis and final approval of the manuscript. LS: data collection and analysis and final approval of the manuscript. XH: conception and design, financial support, manuscript writing, final approval of manuscript. All authors read and approved the final manuscript.”

We have included an Author’s Contributions section at the end of the manuscript before the reference list (Page 17) whereby we follow the format suggested by the editor:

“PJT: Conception and design of the review methodology, writing of the protocol, critical revision and final approval of manuscript. PH: Conception and design of the review methodology, critical revision and final approval of manuscript. RD: Conception and design of the review methodology, writing of the protocol, critical revision and final approval of manuscript.”

Reviewer 1: Debbie Warman

1) I thoroughly enjoyed reading "Do people with delusions really jump to conclusions? Rationale and protocol for a systematic review and meta-analysis." They support the usefulness of their study beautifully, and I believe this review will be a great addition to the literature.

We thank the reviewer for recognising the strengths of this protocol.

2) My only question was I had trouble following a line on pages 5-6: Would it make sense to determine whether there are a 'lower' number of DTD for individuals diagnosed with a psychotic disorder versus individuals without these experiences?

We have now re-worded this section of the protocol so it is clear that we are trying to determine if there are fewer DTD for individuals diagnosed with a psychotic disorder versus individuals without these experiences (Page 6):

“We will investigate (a) whether there are a fewer number of Draws to a Decision (DTD) for individuals diagnosed with a psychotic disorder versus individuals
without these experiences, and (b) whether significantly more people with non-affective psychosis demonstrate a JTC style relative to control participants.”

Reviewer 2: Alexander Tsertsvadze

Abstract-Background

1) Please, provide the rationale more clearly as to why this systematic review is needed.

We now briefly state in the abstract the rationale for the current review (Page 2):

“Previous reviews have supported the hypothesis that a JTC bias is particularly linked to the formation and maintenance of delusions. A new systematic review is required as a number of studies have since been published, and older reviews are limited by not systematically assessing methodological quality or the role of study design in influencing effect size estimates.”

Please note that in making this change to the abstract and other alterations suggested below, we have had to remove some of the information previously in the abstract (e.g., details of moderators being looked at) in order to keep to the 350 word limit.

2) It is not clear what your research question is. Please, state your research question something in this line (e.g., “this review aimed to investigate if there is an association between psychosis and JTC bias”).

We now add in a sentence in the abstract clarifying the main research aim (Page 2):

“This review aimed to investigate if there is an association between psychosis or delusions and JTC bias.”

Abstract-Methods

3) Will the authors state the study eligibility criteria by informing a reader about the type of studies that will be included in the review (design, population, interventions/exposures, and outcomes)?

We have now added in details of the criteria for study eligibility in the abstract (Page 2):

“Eligibility criteria were as follows: Studies must recruit individuals with i) schizophrenia spectrum conditions or ii) experiences of delusions. Case-control, cross-sectional, observational and prospective designs will be included but treatment trials and experimental studies excluded. Studies must use the beads task to assess JTC or a conceptually equivalent task. The outcomes will be the average number of draws to a decision in the beads task (or related variant) and the proportion of the sample judged to demonstrate a JTC bias.”

4) Please insert ‘study selection’ between ‘literature searches’ and ‘data extraction’ …will be undertaken by two independent reviewers.
We have now made this change (Page 2):

“Literature searches, study selection, data extraction, risk of bias assessment and outcome quality assessment will be undertaken by two independent reviewers.”

Aims and scope of this review

5) In the statement: “We will investigate (a) whether there are a greater number of Draws to a Decision (DTD) for individuals diagnosed with a psychotic disorder versus individuals without these experiences”. Should not DTD be a smaller number for individuals with psychotic disorder vs. controls? If yes, suggest to change ‘a greater number’ to ‘a smaller number’.

This was a typo and has now been corrected (Page 6):

“We will investigate (a) whether there are a fewer number of Draws to a Decision (DTD) for individuals diagnosed with a psychotic disorder versus individuals without these experiences, and (b) whether significantly more people with non-affective psychosis demonstrate a JTC style relative to control participants”

6) Please, assign (c) to the statement: “A key question is whether the bias is specific to delusions, or whether it is more general to psychosis, and we will therefore also test whether DTD and JTC style differ between those experiencing delusions versus controls.”

We have made this alteration (Page 6):

“c) A key question is whether the bias is specific to delusions, or whether it is more general to psychosis, and we will therefore also test whether DTD and JTC style differ between those experiencing delusions versus people who have psychosis but do not report delusions.”

7) In the sentence above ending “…we will therefore also test whether DTD and JTC style differ between those experiencing delusions versus controls” who are the controls? People with psychosis but without delusions or people without psychosis regardless of delusions?

We have now rephrased this section to make it clear who the controls are (Page 6):

“A key question is whether the bias is specific to delusions, or whether it is more general to psychosis, and we will therefore also test whether DTD and JTC style differ between those experiencing delusions versus people who have psychosis but do not report delusions.”

8) After the sentence “In summary the moderators of effect size we intend to test are as follows:” the authors list potential effect modifiers. Should not ‘the presence of delusions’ be one of these modifiers too?
We have now added this to the list of effect modifiers (Page 7): “Whether the participants in the psychosis group also have delusions (delusions present vs. absent).”

Method – quality statement
9) Suggest to delete ‘quality statement’.
This heading has now been deleted.
10) Replace MOOSE with PRISMA statement (Moher et al).
We have now substituted MOOSE for PRISMA (Page 8):
“The review will aim to adhere to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines [PRISMA, 18] in order to ensure comprehensive and transparent reporting throughout.”

11) AMSTAR is not a reporting guideline; it is a systematic review methodology appraisal tool. Therefore, I suggest to delete it in this sentence.
We have carefully considered this suggestion. It is helpful but we wish for our work in the full review to be considered against the AMSTAR criteria, and so we wish to pre-specify this.

Method – Inclusion and exclusion criteria - population
12) Please, explicitly state whether or not you are going to include healthy people (without psychosis) as your controls. If you exclude them, then state why?
We have added additional information on the control groups that will be included in the review to clarify this point (Page 8 – Page 9):
“The control groups may include both healthy controls, individuals with psychiatric conditions other than psychosis. Furthermore, in the case of analyses comparing individuals with and without experiences of delusions, controls may include individuals diagnosed with psychotic disorders who have not experienced delusions.”

Method – Inclusion and exclusion criteria – additional criteria
13) Please, state if unpublished literature (e.g., conference proceedings, unpublished studies) is excluded or included.
We have now state that unpublished material will be included under the “Additional Criteria” subheading (Page 9):
“Unpublished data will also be included where identified.”

Method – Search strategy:
14) Please, create a new section ‘Study selection’ which should follow ‘Search strategy’. Afterwards, move the following text from ‘Search strategy’ to ‘Study selection’: “In the initial phase titles and abstracts will be screened for potentially
eligible studies. In the second phase, full texts of the remaining articles will be read to determine if they meet the inclusion and exclusion criteria. Where disagreement emerges regarding the eligibility of studies, a third author (RD) will arbitrate. Where conference abstracts that are identified through the search that possibly meet the inclusion criteria the presenters will be contacted and further details sought regarding the study, in order to ascertain the studies eligibility.”

We have now created this new section entitled “Study Selection” and have moved the text suggested by the reviewer into this section (Page 10):

“Study Selection
In the initial phase titles and abstracts will be screened for potentially eligible studies. In the second phase, full texts of the remaining articles will be read to determine if they meet the inclusion and exclusion criteria (all screening by PJT & PH). Where disagreement emerges regarding the eligibility of studies, a third author (RD) will arbitrate. Where conference abstracts that are identified through the search that possibly meet the inclusion criteria the presenters will be contacted and further details sought regarding the study, in order to ascertain the studies eligibility.”

Method – Methodological quality

15) Text on methodological quality (for individual studies) should be separated from text on grading the evidence for overall quality using GRADE approach (two or more studies contributing per outcome). Therefore, please, create a new section ‘Assessing overall quality of evidence’ which should follow ‘Methodological quality’. Afterwards, move the following texts from ‘Methodological quality’ to ‘Assessing overall quality of evidence’: “The GRADE approach (Guyatt et al., 2008) was also adopted to provide an assessment of quality at the outcome level. Within the GRADE approach, observational studies are normally automatically marked down for quality. However, for the purposes of this review, as all included studies will be observational, a decision was made not to automatically mark down the quality of outcomes in this manner. All outcomes are therefore initially rated as high quality and then downgraded based on five main criteria (risk of bias, imprecision, indirectness, heterogeneity, publication bias).”

“Both PJT and PH have completed the GRADE online learning modules (http://cebgrade.mcmaster.ca/) and have experience of using this approach.”

We have now moved the sections of text, formerly under the heading “Methodological Quality”, into a new section entitled “Assessing Overall Quality of Evidence”, as recommended by the reviewer (Page 11-Page 12).

Method - Data Synthesis and Analysis, Subgroup Analyses and Publication Bias

16) Please, reserve the term ‘subgroup analysis’ when exploring heterogeneity of the association between psychosis and JTC outcome across groups defined by clinical features (e.g., stage of psychosis, etc…) and sensitivity analysis when exploring the robustness of the effect estimate in relation to methodological
features of studies (e.g., meta-analytic method, risk of bias item, study design).

We now use the term ‘subgroup analysis’ when referring to exploring heterogeneity of the association between psychosis and JTC outcome across groups defined by clinical features and sensitivity analysis when exploring the robustness of the effect estimate in relation to methodological features of studies. This has led to some changes in the manuscript:

Page 9: “We will explore the impact of different study designs through sensitivity analyses.”

Page 12: “Sensitivity analyses will be used to explore the impact of combining these converted effect sizes with other studies for the primary outcomes.”

Please note that for the sentence (Page 1-13): “In addition, we will undertake a sensitivity analysis, re-calculating the meta-analyses to look specifically at comparisons with either psychiatric controls or non-clinical control.” we have kept the term “sensitivity analysis”. This is because this sentence refers to a question about the meta-analytic method, namely the decision to aggregate comparison groups for those studies that employ two or more control groups versus choosing one control group for the purposes of the comparison. We are however, happy to reconsider the wording of this section if the reviewer feels it is inappropriate.

17) Please, separate ‘Subgroup analyses’ and ‘Publication bias’ sections. Move the following sentence to ‘subgroup analyses’ section: “As noted in the review aims, a number of moderators of effect size will be explored as part of the secondary outcomes of the review. These moderator effects will be examined through sub-group analyses. Significant differences between subgroups will be ascertained using the Q-test (Borenstein et al., 2009).”

We have now moved the text suggested by the reviewer into a separate section entitled “Publication Bias” (Page 13):

“Subgroup Analyses

As noted in the review aims, a number of moderators of effect size will be explored as part of the secondary outcomes of the review. These moderator effects will be examined through sub-group analyses. Significant differences between subgroups will be ascertained using the Q-test (Borenstein et al., 2009).

Publication Bias

Publication bias will explored via funnel plots for all outcomes with > 10 studies, following recommendations by Sterne, Egger and Moher [30]. The Trim and Fill method [29] will also be employed to explore the presence and ascertain the potential impact of publication bias. All analyses will be undertaken using Comprehensive Meta-Analysis [31] and STATA version 9 (Stata Corporation, College Park, Texas, USA).”

18) If you think any info referring to subgroup analysis remains in ‘Data Synthesis and Analysis’ section, please move it to ‘Subgroup Analysis’ section.
We have read through this section and do not feel that any info referring to subgroup analyses remains in the “Data Synthesis and Analysis” section.

19) The sections in the text should be ordered as follows: ‘Data Synthesis and Analysis’, ‘Subgroup Analyses’, and ‘Publication Bias’.

The sections now follow this order (Page 12-13).

Discussion

20) In the Discussion section, will the authors highlight importance of findings of this systematic review in terms of future research and policy implications?

We have responded this point and the remaining three suggestions by adding further detail in the Discussion paragraph (Page 14):

“In discussing the findings of the review, we will consider how they compare with the results of previous reviews in this area, their implications for future research and policy, the limitations and strengths of the review, and future research recommendations that can be drawn in light of the limitations of the available evidence.”

21) Will the authors provide limitations and strengths of the evidence and review itself?

See response to point 20.

22) Will the authors discuss their findings in comparison with those of other studies or systematic reviews?

See response to point 20.

23) Will the authors discuss future research recommendations in light of limitations identified in the reviewed evidence?

See response to point 20.