Reviewer’s report

Title: Ranking major and minor research misbehaviors: results from a survey among participants of four World Conferences on Research Integrity

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Reviewer: Nadia Elia

Reviewer's report:

The topic is interesting. There is a definite need to go beyond falsification, fabrication and plagiarism when talking about research misconduct

Overall, the manuscript would benefit from being reported according to the STROBE checklist for cross-sectional studies.

General concerns regarding this study, some of which are well reported as limitations of the study in the discussion part, include the fact that this reflects personal opinions of a convenience sample of participants with a low response rate (227 out of 1131 invited) and over-representation of Professors who may have a different (biased) view on the prevalence of misconduct occurring during the data extraction phase of a clinical trial (and could explain the conclusions of the study regarding the importance of lack of mentorship of junior researchers, etc…)

Specific comments:

Abstract:

Method, line7: I suggest to the reader's attention to the fact that the attendees were asked to score these items according to « their idea of the prevalence, preventability etc… » since obviously, they have no knowledge of the real prevalence.

Results: I suggest to report that 227 participants responded to the questionnaire, (20% of invited, 33% of those who opened the email)

Conclusion: the study says nothing on the potential impact of intervention to promote research integrity (last sentence of conclusion seems to be over-interpretation of results).

Introduction:

The very first sentence seems to contain a contradiction: « Responsible conduct of research is the norm », « breaches of research integrity occur alarmingly commonly ».
Misconduct, misbehaviour, questionable practice are all ill-defined terms commonly read in the papers reporting on research integrity. If a questionable research practice « often (...) threaten the relevance, validity, trustworthiness or efficiency of the study (..) and may be committed intentionally (..) » why should we differ it from a misconduct?

The real question is why do scientists not agree that the behaviour is undesirable and should be avoided?

Page 4, line 1: Authors state that the « total harm » caused by a specific research misbehaviour depends on the frequency of its occurrence and the impact when it occurs. Again, the impact when it occurs may be very difficult to quantify, if you think of the Wakefield example regarding the relationship between vaccination and autism.

Method

The method section should follow the SROBE recommendation for reporting of cross-sectional studies. Using all the subheadings should help to clarify the lack in information provided. (study design: cross-sectional; Setting; Participants; etc.)

Page 4, line 16: "our first aim (...) list of misbehaviour, acknowledged by experts" how are the experts defined? Is attendance to a conference enough to be called an expert?

Page 4, line 17: I would add the term "perceived" "(...) to provide expert-based ranking of these specific research misbehaviour according to PERCEIVED frequency of occurrence…"

Page 4, line 22: How many candidate items did you start with? Which survey questions? Which relevant literature (references?) this paragraph is a bit too vague to be informative.

Page 5: additional file 1: What happened to Daniele Fanelli, who signed the invitation later? Did his contribution stop at this stage? (this is just by curiosity…)

How were the « colleagues » selected? were all speakers and session chairs of the conference invited? Or how was the selection performed? How many attended the workshop? On what basis were the 60 items selected? Out of how many?

How did you get the list of the participants of the 4 last congress? More detailed information would be interesting.
Page 5: the sentence regarding "the emphasis that questions pertain to views of the respondents, and their subjective opinion of unknown basis" should come either earlier in the introduction/objective.

Page 6, table 2:
A brief description of the reasons provided by the 33 participants not willing to answer the questionnaire could be interesting.

Over-representation of professors could be highlighted in the text.

Overall, the interpretation of the 95%CI in the tables is unclear. Are we drawing conclusion on "the whole community of "experts" attending a given conference and that agree to participate in an online survey"? In which case, I'm not so sure that this "confidence" reflects much.

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