Author’s response to reviews

Title: Risk perception of blood transfusions - A comparison of patients and allied healthcare professionals

Authors:

Jan Graw (ja.graw@web.de)
Katja Eymann (Katja.eymann@gmx.de)
Felix Kork (fkork@ukaachen.de)
Martin Zoremba (zoremba@med.uni-marburg.de)
Rene Burchard (Rene.burchard@uni-wh.de)

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Risk perception of blood transfusions – A comparison of patients and allied healthcare professionals

Point by point response

Reviewer reports:

Brian Custer (Reviewer 1): The manuscript submitted by Graw and colleagues reports on the findings from a risk perception survey of allied healthcare workers, known as "non-academic healthcare professionals" in the manuscript and patients. The objective was to assess differences in the understanding of risk perceptions between these two populations. The findings show higher levels of concern about infectious threats in patients compared to allied health professionals. The general findings are that perceptions of risk are elevated in both groups in excess of the actual true risks in transfusion in the current era. Overall the manuscript is well written. However, there are some concerns about the data presented relative to the stated purpose of the manuscript in the introduction.

1. Abstract. The final sentence of the conclusion doesn't really follow from the data presented in the abstract or manuscript because physicians were not included in this study. Please revise.
We agree that the final sentence of the conclusion in the Abstract does not follow from the data obtained. The conclusion of the abstract has been rephrased on pages 2 and 3 of the revised manuscript.

2. The use of the term "non-academic health care professionals" in the title and throughout the manuscript is not ideal. A better term to use throughout the paper would be "allied healthcare workers". It is certainly true that some allied healthcare workers have academic appointments and also that some physicians should not necessarily be classified as "academic"

According to the Reviewer’s suggestion, the term „non-academic health care professionals“ has been changed into the term „allied healthcare workers“ throughout the manuscript including the manuscript’s title.

3. Although much of the introduction is focused on the idea that non-physicians are increasingly used as deliverers of healthcare including communications with/consenting of patients on procedures, the manuscript doesn't really provide insights into the consenting process and whether allied healthcare workers can serve as the group who consents patients for transfusion. To truly assess this topic a direct comparison of differences in risk perceptions of allied healthcare workers and physicians would be necessary. Consider revising the introduction to focus on the need to simply understand differences in risk perceptions between patients and caregivers.

We thank the Reviewer for highlighting this point and have revised and streamlined the Introduction section to focus on the understanding of the differences in the perception of blood transfusion risks between patients and caregivers. Pages 4 and 5 of the revised manuscript include the revised Introduction section.

4. The group of "non-academic healthcare workers" is not defined. Who are these allied healthcare professionals who participated in the study? What healthcare roles do they have? Are they all nurses or other staff? Table 1 needs to include more details on the study populations, including the types of patients included (clinical reasons for hospitalization) and the roles of the allied healthcare workers.

We thank the Reviewer for highlighting this point. Of the 185 allied healthcare workers 117 (63.2%) were registered nurses, 10 (5.4%) nursing auxiliaries, 55 (29.7%) nursing students, and 3 (1.6%) did not define their status. This information has been included in the revised manuscript on pages 5 and 6. According to the approval of the Medical Ethics Committee of the Medical Council Westphalia-Lippe and by legal requirements of the German data protection act for this study we were not allowed to record detailed patient-specific information. Therefore, we regret that we cannot report details such as clinical reasons for hospitalization of the surveyed patients.

5. Were the patients included in the study all transfused, or at risk for transfusion?
Recruitment of patients was independent of a previous history or present risk of receiving a blood transfusion. This information has been included in the Methods section on page 6 of the revised manuscript.

6. Table 4. The multivariable models are interesting, but it is unclear what substantive contribution they make to the analysis. The summary sentence of section 3.6 (page 11) seems sufficient to convey the meaning of these models.

We thank the Reviewer for highlighting this important point and have condensed the results to a one sentence summary in the Results section on page 10 of the revised manuscript.

7. Page 8. 185 of 202 caregivers is 91.6% not 91.8%.

We thank the Reviewer for making us aware of this error and included the correct percentage in the Results Section on page 7 of the revised manuscript.

Aryeh S. Shander (Reviewer 2):

This is an interesting survey addressing the perception of patients about blood transfusions and the one offered by caregivers. As I understood, the aim was to see if the communication between patients and caregivers obtaining permission for transfusion could be done by other than the clinicians involved.

First the issue of control isn't one since this is a survey.

A few thoughts as I review the manuscript arose. One is the fact that no benefits (other than risks) were addressed. Consent (or better yet, permission), involves risks, benefits and other alternatives. Perception under these conditions could change the results of the survey. In addition, patients may not be wrong since the authors address envelop viruses (HIV, HCV) but the media is concerned with newer agents such as SARS, Zika and other hemorrhagic viruses. Risk is dynamic since the literature is replete with other concerns that aren't part of the usual consent format. In the absence of well-described benefits, the risk may be underestimated. Other data suggest that the ones currently obtaining "consent" from patients when it comes to blood transfusions exhibit significant knowledge deficit.

I think the authors should include these (unless they argue against) in their discussion and possibly in the methods on why the numerator (benefit) wasn't addressed.

We thank the Reviewer for highlighting this important point. The negative risks associated with blood transfusions are key information every patient has to receive by law when he/she is informed about a possible blood transfusion in Germany. In this study, we focused only on the general perception of transfusion-associated risks of patients and allied healthcare workers. However, we agree that consent involves risks, benefits and other alternatives and we agree that
the results of the survey could be biased when benefits of blood transfusions were explained too. Because this survey was designed to assess only risk perception of blood transfusions, we included above limitation in the Limitation section of the Discussion on page 13 of the revised manuscript.

Elianna Saidenberg (Reviewer 3):

This is an interesting, relevant and well-written paper. I fully endorse it's publication in this journal.

We thank the Reviewer for the positive evaluation of our manuscript.