

Peer Review File

Article information: <https://dx.doi.org/10.21037/ajo-23-36>

Reviewer A

The authors developed a double-page visual aid with pictures of various volumes of blood split on a white t-shirt and ten household tissues. Eighty-seven doctors and nurses were asked to complete the surveys pre and post viewing of the visual aid and estimate blood loss. Pre and post-estimated means, pre-post changes and differences from actual volume were assessed. This article showed that blood loss in epistaxis can be estimated more accurately after education with a visual aid.

1. The authors concluded that the improved accuracy post-education was independent of years of experience. I do not see any statistical analysis analyzing this.

Reply 1: We have clarified the wording of this results section and included the relevant statistical analysis.

Changes in the text: added further details in results and see revised sentences in discussion.

2. The surveys and the visual aid were delivered online. Any possibility that the participants were watching the visual aid while they were doing the post-education survey?

Reply 2: The survey was delivered to participants in sequence. They were unable to view the visual aid once they had clicked through to the post education survey, unless a screen capture was undertaken and viewed on an alternative tab/screen.

Changes in the text: added additional information clarifying that the visual was only viewed once in between the two surveys (see line 91 and 193)

Reviewer B

This paper describes the utility of a visual aid in the estimation of blood loss for epistaxis. The paper is well written and there are no specific issues with the paper.

Minor changes

1. Line 67 - suggest a full stop after “describe” and capitalise “However’

Reply: suggested changes have been made

Changes in the text: as above in line 67

Editorial Comments

Title

1. Consider revising the title to emphasize the central element of the online visual aid, such as "Enhancing Blood Loss Estimation with an Online Visual Aid"

Reply 1 – thank you for this suggestion.

Changes in the text – change to title

Abstract

2. “We have previously demonstrated that...could be taught with use of a visual aid delivered online”, did the authors mean the aim of this paper was aimed to explore the effect using a form of online visual aid? But these two articles both used online visual aid. The authors should explicitly state the novelty or gap addressed in this paper, which distinguishes it from their previous work.

Reply 1 – we have clarified the purpose of this study

Changes in the text - In the pilot study blood loss estimation accuracy improved with participants years of experience; this paper sought to investigate whether this experience could be taught with use of a visual aid delivered online in a survey

3. Please specify the time, settings, and statistical methods in the Methods.

Reply 1 – we have included the above details.

Changes in the text - Pre and post-estimated means, pre-post changes and differences from actual volume were calculated for each object with marginal means and 95% confidence intervals used.

4. “...by exposure to a visual aid of two common items with varying amounts of blood spilt on them”, please clearly specify the “two common items” with varying blood amounts more clearly in the abstract.

Reply 1 – this has been updated

5. The phrase "Participants were asked to best estimate blood loss" might benefit from clarification regarding what is meant by "best estimate."

Reply 1 – clarification has been provided

Changes in the text - Participants were asked to estimate the blood loss on the item by choosing a volume on a range slider

6. Results should be supported by accurate data, not just qualitative descriptions.

Reply 1 – we have included further data

Changes in the text - for example the amount of blood spilt on the raytek, was better estimated at an equivalent volume post-education when compared to the actual volume (actual volume 30ml, pre education 40ml, post education 32.11ml, p0.02)..

Background

7. Reference 2 was the authors’ previous publication. Please directly state “Our previous paper found...”. More importantly, you have found exposure to visual aids can improve clinicians’ estimation reliability of blood loss. Therefore, it’s suggested to highlight the key distinction between the two studies in terms of the research focus or objectives.

Reply 1 – this has been updated

Changes in the text – our previous paper

8. “...blood loss can have quite significant consequences and, in some patients, guide more judicious resuscitation”, this seems incorrect. Please explain why blood loss can guide more judicious resuscitation.

Changes in the text - . For other patients, correct estimation of blood loss can guide more judicious resuscitation.

9. “Estimations of blood loss in obstetric and colorectal surgery are well described”. Citing

Reply – citations have been updated and included

10. “Similar studies in post-partum haemorrhage have suggested that exposure to visual aids of blood loss can improve clinician estimations [2]”, it’s stated “studies” but only one reference was cited.

Reply – citations have been updated and included

11. The statement “A pilot study performed by the lead investigator found that... with increasing years of experience, estimation improved [3]”, requires correction regarding the study type; it should be referred to as a systematic review and meta-analysis.

Reply 1 – This has been updated

Changes in the text - A previous systematic review and meta-analysis, conducted by the lead investigator, and published in 2021 found that blood loss in epistaxis was reliably overestimated however with increasing years of experience, estimation improved

Methods

12. “The visual aid appeared as an intermission between the two surveys and then participants were asked to complete the survey post a single viewing of the visual aid”, in which way the clinicians complete the survey. Any platforms (i.e. SurveyMonkey)?

Reply 1 – SurveyMonkey was used and this has been updated

Changes in the text - between the two surveys (Survey Monkey ©)

13. The paper would benefit from a more explicit description of the materials assessed by the clinicians. This clarification is essential to provide context for terms like "Raytek," "Bluey," "Sheet," and "underwear," which are introduced in the Results section without prior explanation. Furthermore, the quantity of blood spillage on the common household and medical products should be clearly specified within the Methods section, or accompanied by accompanying images for enhanced clarity. Providing a link to access the complete survey, not just the instructional pictures, would be valuable for readers seeking a more comprehensive view of the study.

Reply 1 – the details of the product have been included and an example of the items has been provided as a Figure. In the results section the actual volume is listed in table 2. We can provide a link to the survey if the journal thinks this would be supplementary.

Changes in the text - Those items included a white t-shirt, a pile of ten tissues, a white towel, a pair of mens underwear, a white sheet on a single mattress, a single pack of ray-teks (a non woven gauze used commonly in surgery) and a bluey (an absorbent pad with a waterproof backing commonly used in a hospital setting).

14. The authors stated the visual was only viewed once in between the two surveys. Is there any time limited or other constraints for viewing the instructional pictures?

Reply – the survey was delivered online, although there was no time limit the survey progressed participants through in a timely fashion.

Changes in text - This also limited the ability of the participants to view the visual aid throughout the survey for reference repeatedly as the surveys were in sequence and the visual aid could not be viewed whilst the post education survey was completed

15. "Data analysis aimed to compare whether participants would be able to underestimate, overestimate or correctly approximate the blood loss on specific items", there is no presentation of the extent of estimation of the spill for the products in the Results section.

Reply – this has been clarified, further data included which looks at the pre-post differences as a percentage of the actual volume.

Changes in the text – see Results section

Results

16. The authors are suggested providing numbers of individuals at each stage: numbers potentially eligible, examined, and included with reasons for excluded. This could guarantee the transparent and more objective selecting, assisting avoiding potential selection bias.

Reply 1 – the survey was sent by hospital administration to all junior doctors/emergency department personnel. The study investigators did not have access to this mailing list and thus did not have influence on inclusion or exclusion of participants who were employed at this healthcare facility. The potential selection bias is outlined in the discussion

Change in text - The survey was emailed to all junior medical staff and emergency department staff at a single metropolitan hospital. Given an opt-in participation this blanket delivery could have resulted in selection bias for those who had a vested interest in blood loss estimation thereby potentially excluding those with less experience.

17. In Table 1, the use of "Other (please specify)" is somewhat vague. It is advisable to specify the specialization to which these cases belong for clarity and precision.

Reply – this has been clarified

Change in text - One participant worked in anaesthetics and one in general practice.

18. It's stated "with the bluey the estimated mean blood volume was improved post education and actual volume (actual volume 50ml, pre-education 172ml, post education 53ml, $p < 0.001$)", but the amount in pre-education was 222.64, post education was 53.11. Additionally, it is unclear what "bluey 1" and "bluey 2" represent, and this requires clarification for the reader's understanding.

Reply 1 – these amounts have been updated and the results clarified.

Changes in the text –

several items (i.e. bluey 1 and 2, t-shirt 1 and 2 and mattress 1 and 2) were duplicated with two different volumes to highlight the visual change with increasing volumes of blood

bluey the estimated mean blood volume was improved post education when compared to the actual volume (actual volume 50ml, pre-education 222.64ml, post education 53.11ml, $p < 0.001$)

19. Regarding the question of whether the accuracy of clinicians' blood loss estimations improves with increasing years of experience, the authors have already addressed this issue in the prior publication. In this paper, it is advisable for the authors to focus primarily on the main research question and avoid excessive repetition of previously reported findings.

Reply 1 – we have removed this section from the paper

20. The statement " The underwear was underestimated both pre- and post-education which was consistent with the findings from the pilot study (actual – 50ml, pre-mean 40.93, post mean 38.23)" presents an opinion or interpretation of the results. Such interpretations should be discussed in the paper's Discussion section and supported by relevant references.

Reply – this has been rectified and included in the discussion section

21. It is unclear why the authors chose to present the results only for "Bluey1 50ml" and "Sheet2 - 1000ml."

Reply 1- results for all objects have been included

22. In the statement "post-education volume was 1583ml (pre-post mean difference 1453.63ml, $p < 0.001$)," the volume "1583ml" should be correctly reported as "1583.63ml."

Reply – this has been rectified

23. "The towel household item with 250ml of blood spilt was estimated ...post mean 256.63, (95% CI 220.46-292.80))", please cite Figure 1 here.