Author's response to reviews

Title: A Cross-sectional Study of Victorian Mobile Intensive Care Ambulance Paramedics Knowledge of the Valsalva Manoeuvre

Authors:

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Author's response to reviews: see over
A cross-sectional study of Victorian Mobile Intensive Care Ambulance Paramedics knowledge of the Valsalva Manoeuvre.

Reviewers Comments & Authors Reply

Reviewer #1 (Matt Reed):

Reviewer’s Comments
“...I wonder whether this might be better suited to a letter or short report”

Authors Reply
The revised manuscript has addressed this.

Reviewer’s Comments
“I wonder why the authors only chose to ask the paramedics about the Valsalva manoeuvre and not extend their study to the treatment of other common pre-hospital conditions which may have made it more interesting”

Authors Reply
This paper was intended to provide information on the prehospital use of the Valsalva Manoeuvre, and not intended to assess paramedic education on a broader scale. As a result we trust that the revisions will clarify and improve the paper.

Reviewer’s Comments
Another concern is that the standards that the authors were expecting the paramedics to know were not recognised guidelines and indeed ones that the authors only identified themselves the previous year via a literature review. It is therefore not surprising that the paramedics and physicians were not aware of the exact criteria for performance of the Valsalva manoeuvre – I doubt many of them would be aware of the authors’ previous work.

Authors Reply
The issue of paramedic knowledge, including formal and informal education certainly provided a degree of expected impact upon the results, yet the purpose of unearthing this deficit was coupled with the importance of affecting changes within paramedic education and highlighting the correct Valsalva method in order to provide better evidence-based practice within the prehospital field.

Reviewer’s Comments
There is no benefit of putting p values in Table 4 or 5. In a study with such small numbers if you perform statistical tests on 19 variables you are bound to get some statistical significance by chance. The p values do not add to the paper in fact detract from it.

Authors Reply
This has been addressed.
Reviewer’s Comments
...its main use is to highlight the exact method of performing the Valsalva manoeuvre.

Authors Reply
This is a true statement, yet it also encompasses the need to positively affect education standards within paramedic circles, and to provide a clear identification of current practice (which has not been assessed or studied before).

Reviewer # 2 (Peter Paal):

Major compulsory revisions:
Reviewer’s Comments
The authors mention three steps in the Valsalva Manoeuvre (VM) as “recommended standard” and base the study on this. I do not agree, with this statement, because to my knowledge no international emergency medicine society has included these three steps in any of their therapy guidelines, also most of the cited references are from minor journals. Also, the authors state that teaching VM has been so far mainly “informal”, “anecdotally” and “education relies heavily on cultural practice and individual learning”. Thus it would be more appropriate to name the three steps of VM as “three evidence based steps” instead of the “recommended standard”.

Authors Reply
This has been addressed.

Reviewer’s Comments
The authors indicate that the results for VM were different between paramedics and emergency physicians. This is not correct, as the p values for all three comparative tests are not significant. Thus, there is a trend to a higher compliance to the three “evidence based” VM steps in the paramedics when compared to the emergency physicians group.

Authors Reply
This has been addressed.

Reviewer’s Comments
Page 8, para 1. Employed statistical test should be mentioned.

Authors Reply
This is now not relevant due to the removal of data from Table 4 to 6.

Reviewer’s Comments
Page 11, para 2. This paragraph should be revised completely, because the differences between paramedics and EP’s are not significant.

Authors Reply
This has been done.
Reviewer’s Comments
Page 11, para 12. Some limitations should be added: 1. There is no recommended standard for VM, and VM teaching has been vague. For example see and cite the 2005 ERC ALS guidelines. 2. Comparing the VM knowledge of paramedics in 2008 with an EP study from 2005 may lead to a bias, because VM knowledge in 2008 may have been better (though there was neither a “recommended VM therapy standard” in 2008)

Authors Reply
This has been addressed.

Minor essential revisions:
Reviewer’s Comments
The study design is cross-sectional only for the paramedic data. Comparing the paramedic data to the EP data, as done in the second part of the results section, is not cross sectional but longitudinal. Thus, authors should delete “cross sectional study design” from the methods section.

Authors Reply
This has been addressed.

Reviewer’s Comments
Number of participants should be mentioned in the methods section of the abstract and manuscript.

Authors Reply
This has been done.

Reviewer’s Comments
Absolute counts and percentages should be given in the Results section of the abstract.

Authors Reply
This has been done.

Reviewer’s Comments
Note that only significant data should be given in the Results section of the abstract. The three VM steps – position, duration, and pressure, are not significant between paramedics and emergency physicians and should not be presented in the abstract.

Authors Reply
This has been addressed.
**Reviewer’s Comments**
Based on the non-significant difference in VM treatment between paramedics and emergency physicians the authors cannot conclude that paramedics are better than EPs in treating VM. I agree that there is an opportunity to promote VM therapy guidelines. Also, the authors should conclude, based on their findings, that evidence-based guidelines should be defined by international societies and implemented in training curricula. Of course, further studies are required to better define the optimal VM in the primary emergency field.

**Authors Reply**
This has been addressed.

**Reviewer’s Comments**
Page 5, para 1. A further objective of this study was to compare paramedic and EP knowledge regarding the VM, this should be mentioned.

**Authors Reply**
This has been addressed and modified accordingly.

**Reviewer’s Comments**
Methods section, page 5, para 2. Authors should describe the four phases of the VM, or completely cancel these incomplete phase 2 and 4 explanations from the manuscript. There is no additional value for the manuscript in describing the four phases.

**Authors Reply**
This has been done.

**Reviewer’s Comments**
Page 5, para 2. The order of the three steps should be uniform throughout the manuscript. The authors mostly set the steps in the following order: 1. Position, 2. Duration, 3. Pressure.

**Authors Reply**
This has been done.

**Reviewer’s Comments**
Page 5, para 3. The last sentence is bulky and hardly understandable, please debulk.

**Authors Reply**
This has been done.

**Reviewer’s Comments**
Page 6, para 1. Explain or delete the “strain phases”.

**Authors Reply**
This has been done.
Reviewer’s Comments
Page 6, para 2. Only the paramedic study was cross-sectional. A further objective of this study was to compare paramedics and EPs knowledge regarding the VM, this should be mentioned.

Authors Reply
This has been addressed.

Reviewer’s Comments
Page 12, para 2. Basically I agree that “there is little scientific evidence used in the education of...the recommended standard for terminating an SVT”. However, I would revise this sentence to “there is little scientific evidence used in the education of...the VM steps for terminating an SVT”.

Authors Reply
This has been addressed.

Reviewer’s Comments
References section. References 1 and 9 not correctly cited.

Authors Reply
This has been amended.

Reviewer’s Comments
Page 17, table 1. Percentages do not add up to 100%.

Authors Reply
This has been corrected.

Reviewer’s Comments
Pages 18-20, tables 4-6. Most numbers given as differences in the right column seem to be incorrect. Note that most p values are not significant....(Which has to be taken in account in the discussion, because most findings are not significant and have to be discussed in this way).

Authors Reply
This has been corrected.

Discretionary revisions:
Reviewer’s Comments
Page 6 and 7. The setting and population section should be shortened, as most of its content does not add anything important to this study. Mainly it lengthens the manuscript.

Authors Reply
This has been done.
Reviewer’s Comments
Page 13. Name the abbreviations once in the text where they appear the first time and delete this section on this page.

Authors Reply
This has been done.

Reviewer #3 (David McD Taylor):

Major compulsory revisions:

Reviewer’s Comments
The authors have used the data from a previously published study to compare their own data with. This has generated “new data” and p values which they proceed to discuss. I do not think this is acceptable. The authors should only present their own data and not compare it statistically to with those of others. Their Results should only be their own data. The Discussion, however, can include a descriptive (not analytical) comparison of their data with those of others.

Authors Reply
This has been done.

Reviewer’s Comments
The Abstract needed more details of the Methodology used including where the study was set, what was the study period and, especially, what were the three criteria of the Valsalva Manoeuvre examined.

Authors Reply
This has been addressed.

Reviewer’s Comments
The Abstract Results should have other published data removed. Also, the first sentence is ambiguous – do they mean an incomplete understanding of the one paramedic who answered correctly or an incomplete understanding of paramedics generally? I assume it was the latter but rewording is required.

Authors Reply
This has been addressed.

Reviewer’s Comments
Abstract Conclusion – the authors can only make conclusions about their own data – not when combined with data of others.

Authors Reply
This has been addressed.
Minor Essential Revisions:
Reviewer’s Comments
Introduction – the three VM criteria should be described at the end of paragraph 2.

Authors Reply
This has been done.

Reviewer’s Comments
Methods – the phases of the VM need to be defined as most readers will have no idea what they are.

Authors Reply
This has been done.

Reviewer’s Comments
Methods – the entire section of the “definition and evidence...” should be in the introduction.

Authors Reply
This has been addressed.

Reviewer’s Comments
Methods – the Study Design section is very cumbersome English and should be revised.

Authors Reply
This has been addressed.

Reviewer’s Comments
Methods – when was the study done? This should be up front, not lower down.

Authors Reply
This has been addressed.

Reviewer’s Comments
Methods - State that it was done in Melbourne. Was it all done in Melbourne? How many participants were not from Melbourne? Does this represent selection bias and by how much?

Authors Reply
This has been done.

Reviewer’s Comments
Results – as mentioned, all data from other papers should be removed.

Authors Reply
This has been done.
Reviewer’s Comments
Results – remove all numbers that have already been reported in the tables.

Authors Reply
This has been done.

Reviewer’s Comments
Discussion – remove all numbers that have been reported in the Results.

Authors Reply
This has been done.

Reviewer’s Comments
Discussion, para 4, line 4 – what do you mean by “demonstrating a larger percentile score”?

Authors Reply
This has been removed.

Reviewer’s Comments
Discussion para 5, line 6 – “both groups ascribe little importance to duration...” This is not correct since they may have no idea that duration is important.

Authors Reply
This has been addressed.

Reviewer’s Comments
Discussion para 4, line 4 – “there is little scientific evidence...” This is not correct. The instructors may know and use all the evidence but it may be very poorly taught and therefore not retained.

Authors Reply
This has been addressed.

Reviewer’s Comments
All the data in Tables 1-3 is repeated in Tables 4-6. Suggest delete Tables 1-3.

Authors Reply
This has been addressed.