

## PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form ([see an example](#)) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below. Some articles will have been accepted based in part or entirely on reviews undertaken for other BMJ Group journals. These will be reproduced where possible.

### ARTICLE DETAILS

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| <b>TITLE (PROVISIONAL)</b> | SBAR improves communication and safety climate and decreases incident reports due to communication errors in an anaesthetic clinic: a prospective intervention study |
| <b>AUTHORS</b>             | Randmaa, Maria; Mårtensson, Gunilla; Leo Swenne, Christine; Engström, Maria  |

### VERSION 1 - REVIEW

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| <b>REVIEWER</b>        | Koen De Meester<br>University of Antwerp<br>Belgium |
| <b>REVIEW RETURNED</b> | 11-Nov-2013   |

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| <b>GENERAL COMMENTS</b> | <p>2. I suggest first, to explain the acronym SBAR in the abstract; second, to formulate in the conclusion of the abstract that the implementation of SBAR was "associated with" better communication between professions, improved safety climate and a reduced number of "incident reports" related to communication errors; third, in the article summary clinical outcome is mentioned. In my opinion the number of incident reports is not a clinical outcome. Not all incidents are expect to be reported. Also the definition on p 11 line 27-39 does not corresponds to clinical outcome in my view. Were there other clinical outcomes measured such as the number of "Serious Adverse Events" or "Sentinel Events", unplanned ICU admission, unexpected death, cardiac arrest rate, medication errors?</p> <p>3. The study design is the most appropriate in this relative small setting.</p> <p>4. The part "Sample and procedures" (p 7 line 5 to 34 &amp; tabke 1 &amp; 2) are results and not methods. The "Manipulation check" is one of the strenghts of the implementation. For me it is not clear what constists the term "group" in the adapted "ICU Nurse-Physician Questionnaire". Is a "group" the multidisciplinary team including LPN, nurses and physicians or a group of within the same profession? I suggest to put the Cronbach's on p 10 lines 27- 32 and p 11 line 3-5, 21-23 in the tables because these are also results.</p> <p>7. The distribution is not normal because of the low number of questionnaires per group. This is not mentioned as a "weakness" of this study. It is not possible with this low numbers to do a multivariate analysis to correct for the differences found in the comparison group such as "between-group communication openness", "Perception of management unit" and "working conditions".</p> <p>9. yes except for the "clinical outcome". I suggest to use the term "number of incident reports".</p> <p>10. yes except for Fig. 1. I suggest to use a more detailed timeline with the exact dates.</p> <p>12. I don't agree with the fact that working conditions are not related</p> |
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|  | <p>to SBAR (p 17 line 54). It is expected that communication is better when working conditions are better. In this study the number of incident reports related to communication is significant lower in the comparison group and the scores on the scales are higher as you describe in p 17 line 43-54. On p 18 line 5 you can change "clinical outcomes" to "the number of incident reports related to communication".</p> <p>This is an interesting paper fit to be published after revision. Is correction for the differences related to working conditions between the intervention and comparison group possible? I look forward to it.</p> |
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| <b>REVIEWER</b>        | Peter Oluf Andersen<br>Dep. of anesthesiology.<br>Bispebjerg hospital<br>Bispebjerg Bakke<br>Denmark |
| <b>REVIEW RETURNED</b> | 23-Nov-2013  |

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| <b>GENERAL COMMENTS</b> | <p>The study is very well performed, however a few things could be addressed:</p> <p>1: The incident reporting.</p> <p>Is it anonymous? Is it possible to have a demographic view over what group of personnel report incidents the most? (RN, physicians ?)<br/>The base line demographics shows more nurses than physicians entering the study, so it might be a nurse thing to adapt the SBAR concept.</p> <p>Is the type of incidents related to serious outcomes such as patients being injured or died?</p> <p>Are the incidents related to a certain unit (intensive care, post anaesthesia care unit ?)</p> <p>2: The in house training course:</p> <p>Was it mandatory? You use a manipulation check examining a random sample of staff. I am sorry but it is a bit unclear for me, if this is a method where data saturation is satisfying. Is there a chance that another random sample would have turned out a different result with regards to the use of SBAR and taking the in house training course.</p> |
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### VERSION 1 – AUTHOR RESPONSE

Reviewer Koen De Meester Comments to Author:

I suggest first, to explain the acronym SBAR in the abstract

The acronym is explained in the abstract.

Second, to formulate in the conclusion of the abstract that the implementation of SBAR was

"associated with" better communication between professions, improved safety climate and a reduced number of "incident reports" related to communication errors.

The conclusion of the abstract has been changed.

Third, in the article summary clinical outcome is mentioned. In my opinion the number of incident reports is not a clinical outcome. Not all incidents are expected to be reported. Also the definition on p 11 line 27-39 does not correspond to clinical outcome in my view.

We agree; clinical outcome has been replaced by "incident reports due to communication errors" in the article summary and in other parts of the manuscript.

Were there other clinical outcomes measured such as the number of "Serious Adverse Events" or "Sentinel Events", unplanned ICU admission, unexpected death, cardiac arrest rate, medication errors?

In the included incident reports there were two serious adverse events before the intervention and one after the intervention in the intervention group. In the comparison group there was no serious adverse event before the intervention or after the intervention.

The study design is the most appropriate in this relative small setting.

Thank you for your comment.

The part "Sample and procedures" (p 7 line 5 to 34 & table 1 & 2) are results and not methods.

This part has been moved to "Results".

The "Manipulation check" is one of the strengths of the implementation.

Thank you for your comment.

For me it is not clear what constitutes the term "group" in the adapted "ICU Nurse-Physician Questionnaire". Is a "group" the multidisciplinary team including LPN, nurses and physicians or a group of within the same profession?

The term "group" means within the same profession. The section has been expanded to clarify the word "group".

I suggest to put the Cronbach's on p 10 lines 27- 32 and p 11 line 3-5, 21-23 in the tables because these are also results.

The Cronbach's alpha has been added to Table 3.

The distribution is not normal because of the low number of questionnaires per group. This is not mentioned as a "weakness" of this study.

Changes have been made in the section "Strengths and weaknesses of the study".

It is not possible with this low numbers to do a multivariate analysis to correct for the differences found in the comparison group such as "between-group communication openness", "Perception of management unit" and "working conditions".

A limitation of using non-parametric statistics is that we cannot correct for the differences at baseline in some variables.

"Clinical outcome". I suggest to use the term "number of incident reports".

"Clinical outcome" has been changed to the term "number of incident reports" and where appropriate proportion of incident reports due to communication.

Fig. 1. I suggest to use a more detailed timeline with the exact dates.

The exact dates have been inserted in Figure 1.

I don't agree with the fact that working conditions are not related to SBAR (p 17 line 54). It is expected that communication is better when working conditions are better. In this study the number of incident reports related to communication is significant lower in the comparison group and the scores on the scales are higher as you describe in p 17 line 43-54.

We agree; the line (p 17 line 54) has been removed.

On p 18 line 5 you can change "clinical outcomes" to "the number of incident reports related to communication".

We have changed the "clinical outcome" to "the number of incident reports related to communication".

This is an interesting paper fit to be published after revision.

Thank you for your comment.

Is correction for the differences related to working conditions between the intervention and comparison group possible?

Please see answer regarding multivariate analysis.

Reviewer Peter Oluf Andersen Comments to Author:

The study is very well performed, however a few things could be addressed

Thank you for your comment.

The incident reporting. Is it anonymous? Is it possible to have a demographic view over what group of personnel report incidents the most? (RN, physicians ?)

It is not anonymous but confidential. Only the manager or investigator has access to the data. When asking the person in charge; all staff have the ability to report incidents but the most common professional groups filing reports, and approximately equally often, are physicians and RNs.

The base line demographics shows more nurses than physicians entering the study, so it might be a nurse thing to adapt the SBAR concept.

The intention was to implement SBAR among the entire personnel at the clinic. In the intervention group there were fewer physicians (13%) than RNs (60%) and LPNs (27%) employed, which may explain why more nurses entered the study. Since physicians, RNs and LPNs communicate with each other, it is an advantage that sender and receiver use the same structure to facilitate the communication.

Is the type of incidents related to serious outcomes such as patients being injured or died?

Please see answer to Reviewer Koen De Meester.

Are the incidents related to a certain unit (intensive care, post anaesthesia care unit ?)

The incidents were reported at the whole clinic (i.e., intensive care unit, post anaesthesia care unit and operating theatre).

The in house training course: Was it mandatory?

The in-house training course was mandatory and management encouraged all personnel to take part, but naturally everyone was not able to participate, for various reasons.

You use a manipulation check examining a random sample of staff. I am sorry but it is a bit unclear for me, if this is a method where data saturation is satisfying.

The manipulation check is important for interpretation of the findings (please see Kazdin, AE. Research design in clinical psychology. 4. ed. Boston, MA: Allyn and Bacon; 2003).

Is there a chance that another random sample would have turned out a different result with regards to the use of SBAR and taking the in house training course.

Yes, with another random sample, the results of the manipulation check could have been different.

**VERSION 2 – REVIEW**

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| <b>REVIEWER</b>        | Koen De Meester<br>University of Antwerp<br>Faculty of Medicine and Health Sciences<br>Belgium |
| <b>REVIEW RETURNED</b> | 14-Dec-2013  |

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| <b>GENERAL COMMENTS</b> | The authors have adapted the manuscript to the suggestions of the reviewers and is now suitable for publication in my opinion. There are some minor clerical errors to adjust. |
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