Reviewer's report

Title: Assessing the Safety Attitudes Questionnaire (SAQ), German language Version in Swiss University Hospitals - A Validation study

Version: 1 Date: 15 May 2012

Reviewer: Barbara Hoffmann

Reviewer's report:

The authors report of an interesting study on a safety culture instrument. They followed a valuable approach since they not only analysed reliability by calculating a measure of internal consistency but also analysed face validity, re-test reliability and tried to correlate the results of the German version of the Safety Attitudes Questionnaire with another instrument for the evaluation of safety climate. Unfortunately, the presentation of results and the discussion section is a bit confused and needs a major revision. Because of the reasonable and wise approach the manuscript should be published with these major revisions.

Major compulsory revisions

Important results are not mentioned in the results section, but later discussed in the discussion section, and other data is not listed in the result tables:

# The items with high missing values: What are the actual missing values and which items are these? In the discussion section (first paragraph) high values are mentioned but they are not anywhere else listed and there is no information on the particular item character.

# In table 3 only four factors are listed. What about the missing two? In this table only 21 items are listed, nine items are missing.

# Is the result of the Swiss analysis a six-factor-model as well? There is no information on this subject, only the fit indices of the confirmatory factor analysis are displayed and only four factors described in table 3. This is irritating.

# Table 3 would benefit from the information on CVIs (content validity indices) of items and scales and of the number of responses that could be analysed. The authors regret the smaller sample size due to some items with higher missing values but there is no information on the actual number of responses that could be incorporated into the analysis.

# What was the sample size for the confirmatory factor analysis and what are recommended sample sizes?

The course of the discussion section seems to be a bit confused:

# 2. paragraph: Why is the comparison of the results with the original questionnaire impaired due to a smaller sample size?

# 3. Paragraph: Why are items with response means of higher than 3.5 skewed to the negative end? To me it seems that they should have means less than 3 or
better 2.5 to be skewed to the negative end.

# 4. Paragraph: What are factor allocation indices? Where is the data discussed in this paragraph? And what is its meaning?

# 5. Paragraph: I did not understand the sentence “It is notable the the item “problem personnel” was elicited using the unit versus hospital designation and may have suffered from the same methodological confusion as the perception of management sub scale.”

# 8. Paragraph: Why was the decision to collapse three likert scale categories into one appropriate? Why did it not change the main statement (which main statement?) of the SAQ?

# 8. Paragraph, following sentence: Which issues with the factor analysis are meant?

# 10.paragraph: What is meant by the last sentence of this paragraph? Why are these results useful? What is the association (of what?) with low prevalence outcomes (patient safety incidents?)

Minor essential revisions:

Abstract, result section: Internal consistency is displayed with data that is not displayed in the text or in tables (#=0.878). 0.647 – 0.827 should be displayed.

Conclusions: It seems to be wise to state that the German language version of the SAQ needs some minor improvements and after these may appear to be a sound instrument. The recommendations in the text do not match with the conclusions in the abstract section.

Keywords: I would recommend to use established mesh terms.

Background section:

3.paragraph: the measurement of patient safety culture had been published in many cases but not well explored (as Rhona Flin concluded in her review on the subject). Some refer to patient safety culture as having the precision of a cloud. Please revise this notion.

Methods section:

1. paragraph: What is the rationale for the sampling procedure?

4. paragraph: Is reference 5 really demonstrating the broad implementation of the SAQ and not only citing other papers?

Statistical analysis: What is IQR? Inter quart range?

Psychometric testing: Why was the SAQ compared to the SOS? Is this instrument validated in the same setting and country and language?

Results section:

3. paragraph: percentage are displayed but it is not stated the relation to what. What do ceiling effects in five of 30 items (55 to 63 % of ?) mean? Please provide the relation to the other data as well.

4. paragraph (content validity): I-CVI was demonstrated to be good, but values between 0.35 and 0.95 reported. This obviously a mistake.
5. paragraph: How could be confirmatory factor analysis be carried out if normal distribution seems to be a prerequisite and many of the items were skewed?

Discussion section:
Please divide the discussion section in shorte paragraphs. Sometimes it seems to be quite wordy.

1. paragraph: A cronbach alpha of less than 0.8 is moderate but can not be declared to be a sign for a strong reliability (with the other data being mostly less than 0.8).

2. paragraph: The crucial step of the translation of a questionnaire is the understanding of the intention of an item in the original instrument. This intention is not always clear to everyone and unequivocal. Maybe the authors struggled with some of the translation because the intention of them were not self-evident.

3. paragraph: The scale stress recognition had already been demonstrated in earlier studies (e.g. Speroff et al 2010) to follow a different pattern than the other scales of the SAQ. Speroff then opened the debate if this scale is an aspect of safety climate at all.

Table 1:
3 column, 4. Line: “once” instead of “ones”?

Table 6:
Please provide explanations for abbreviations in the table heading (CVI, MV, CFA)

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

No competing interests.