Reviewer's report

Title: A large-scale assessment of hand hygiene quality and the effectiveness of the "WHO 6-steps"

Version: 2 Date: 24 October 2012

Reviewer: Dominik Mertz

Reviewer's report:

Szilagyi et al. undertook a reasonable first attempt in revising the manuscript. However, some major issues that have not been addressed at this point.

Overview:
1. Is the question posed by the authors well defined?
   Much improved.

2. Are the methods appropriate and well described?
   Much improved. (see detailed comments)

3. Are the data sound?
   Still no concerns about the data itself.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
   Better, but I still believe that most readers are not interested in that detailed level of information. The authors should provide more guidance in the discussion section by weighting the importance of the findings.

5. Are the discussion and conclusions well balanced and adequately supported by the data?
   The discussion is still very basic. (see detailed comments)

6. Are limitations of the work clearly stated?
   Better. (Lack of?) Validity not addressed.

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?
   Yes.

8. Do the title and abstract accurately convey what has been found?
   Yes.

9. Is the writing acceptable?
   Writing style can be improved.
Detailed review:

Introduction:
1. I believe that the authors can still do a better job in ‘selling’ their study in the background section. In the 2nd paragraph, I believe that the authors wanted to say compliance with hand rubbing technique. (minor essential revision)
2. This needs to be clarified, as studies on compliance to the 5 moments to hand hygiene have involved more the typically 50-250 HCWs. The authors need to clarify throughout the manuscript whether they are talking about adherence/compliance to the moments of hand hygiene or technique. (minor essential revision)
3. The second last paragraph should be moved up, and the third last paragraph can be merged with the last paragraph. (minor essential revision)
4. Last paragraph: ‘images recorded images’. Please rephrase. (minor essential revision)

Methods:
5. Please rephrase first sentence. The role of senior management is still not clear from the description in the manuscript. (minor essential revision)
6. It is still not clear from the manuscript who participated in this study and that it was mandatory. The authors have explained this in the cover letter, but it needs to be clear in the manuscript. (major compulsory revision)
7. My question regarding data on validity and/or reliability has not been answered. Is there more evidence supporting validity and reliability of this method? Inter-rater reliability is now reported in the results. (major compulsory revision)

Results:
8. Result section can be more concise and better structured. (minor essential revision)
9. Tables: Table 2 should be Table 1 and vice-versa, as Table 2 is first referred to in the text. (minor essential revision)
10. Table 1: Not needed from my perspective. The authors can summarize the findings (e.g. number of agreements, number of disagreements, kappa).
11. Table 2: The cut-off to identify subgroups with insufficient numbers of participants needs to be mentioned in the methods section as well as on the table. What was the rational to define <20 as the cut-off for representativeness? 19/20 in one subgroup would still be representative, while 21/1000 in another subgroup would not be representative. (minor essential revision)
12. Table 3: Please add confidence intervals. (minor essential revision)

Discussion:
13. A discussion is pretty much non-existing in the current version of the
manuscript. The authors are supposed to highlight their most important findings and to relate these findings to what is already known, to discuss discrepancies etc. (major essential revision)

14. The authors may also want discuss why they think that this is the most appropriate method to assess hand hygiene technique. (minor essential revision)

15. Limitations: lack of validation is a major limitation of the method used. Or has this method been validated previously? If so, please describe in the introduction section. (major essential revision)

**Level of interest:** An article of limited interest

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests