Reviewer's report

Title: Designing a handwashing station for low-income communities in Bangladesh using the Integrated Behavioural Model for Water, Sanitation and Hygiene Interventions (IBM-WASH)

Version: 3 Date: 24 January 2013

Reviewer: Julie Harris

Reviewer's report:

The authors describe a qualitative evaluation of the feasibility and acceptability of handwashing stations in urban and rural Bangladesh. The report has merit, but the paper requires a thorough editing both for content and grammar. There are several half-sentences, misspellings, missing commas, run-ons, etc that need to be addressed (most of these are not addressed below), and several areas where highly general statements that don’t add much are included. The flow of the paper could be improved. The results are quite interesting, but their acquisition is questionably represented in the Methods.

Major compulsory revisions:

1. Statements such as ‘Curtis et al found that handwashing behavior was determined by environmental and cognitive factors’ is pretty general – please think about what point is intended and make it more specifically.

2. It’s not really true that few studies have assessed the role of technology in shaping handwashing practices; it feels like the authors were using this to justify their study. There are several published reports evaluating handwashing stations and options in resource-limited settings that should be cited here. It’s true that there are few in Bangladesh, and perhaps that should be the point?

3. Page 5, second paragraph: grammar – ‘focus’ should be ‘focuses’; the word ‘to’ is missing between ‘linked’ and ‘behavior’. The statement that ‘a handwashing station facilitates behavior by providing the elements necessary to wash hands’ is also a highly general statement. What point are the authors trying to make? It would seem that they want to emphasize the individual elements of a handwashing station all in one place rather than single elements as facilitators of handwashing practices, but this isn’t stated clearly.

4. Methods, Study Design. The flow here is unclear to someone unfamiliar with this study. Is Phase 1 the lottery and Phase 2 is providing the second handwashing station, or are both of these Phase 1 and the formative research is Phase 2? In the last paragraph on page 8, there is a line saying ‘after selecting the study site’, but it seemed that the study site was already selected. This section is rather confusing and could use some cleaning up. There is a run-on sentence at the bottom of page 8 / top of page 9.

5. Methods, Study design: A diagram to explain how urban and rural sites were assigned / selected their water containers would help clear up the confusion, and
perhaps a timeline as well showing what was tried in Phase 1, how things were modified, and what was tried in Phase 2.

6. Data collection: Two to nine week is a widely varying time. People can get used to most things and feel differently about them over time. Why was the time so varied? Also, more detailed information here about what information people were collecting / what questions were being asked during formative research would be very helpful, so that the results have a context. I realize this is a qualitative and not a quantitative study, but the results and methods could still be presented in a more rigorous manner.

7. Technological factors at the Habitual level: First sentence needs grammatical help.

8. Page 17, middle: The soapy water bottle was too heavy for children to lift and so was modified – is this in Phase 1 or 2? This is where a timeline would really help.

9. The Conclusions don’t seem to support the findings. For example, in one section of the paper, it’s noted that capacity is very important. If so, why did the soapy water bottle make it through the selection process? It’s likely that these are related to unreported results, but it has the feeling of a ‘gestalt’. If the authors are making these conclusions, please provide specific results to support them.

Minor essential revisions:

1. The abstract is filled with jargon and extra words. It’s unclear from the abstract if the objective was to select options for a clinical trial or just to find out what might be locally acceptable in Bangladesh. The conclusion is a highly general statement that doesn’t seem to really relate to the results. More specific information and less jargon would make this more intriguing for readers interested in the topic.

2. Background: Second paragraph is missing commas. The last sentence of the second paragraph is incomplete.

3. Methods: Study area, last sentence has grammar and spelling issues.

4. Overall: Please use italics when quoting someone.

5. Discussion: In general, both background and data not reported in the results are distributed throughout the discussion. The Discussion should be an interpretation of the results. Please modify.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Not suitable for publication unless extensively edited

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

**Declaration of competing interests:**
I declare that I have no competing interests.