Author’s response to reviews

Title: A simple and short microbiology practical improves undergraduate nursing students' awareness of bacterial traits and ability to avoid spreading infections

Authors:

RIKA YANO (r-yano@med.hokudai.ac.jp)
Torahiko Okubo (t.okubo@hs.hokudai.ac.jp)
Tomoko Shimoda (tshimoda@hs.hokudai.ac.jp)
Junji Matsuo (matsuo@hs.hokudai.ac.jp)
Hiroyuki Yamaguchi (hiroyuki@med.hokudai.ac.jp)

Version: 2 Date: 25 Aug 2018

Author’s response to reviews:

August 16, 2018

BMC Medical Education,

Dear Dr. Liam Messin,

Thank you for your e-mail of July 5th, 2018 and returning our manuscript “MS: RESN-D-15-00163R1/ Title: MEED-D-17-00780R1 A simple and short microbiology practical improves undergraduate nursing students' awareness of bacterial traits and ability to avoid spreading infections” with a decision. According to the reviewer’s comments and suggestions, we revised our manuscript properly. I attach here our revised manuscript with changes indicated by red hatching, as well as a point-by-point response to the reviewer’s comments.

We believe that the revised manuscript is a suitable response to the comments, and is significantly improved over the initial submission. We trust that it is now suitable for publication in BMC Medical Education. We look forward to hearing from the Journal as to the acceptability of this manuscript. Thank you in advance for your kind consideration of this paper.
REPLIES TO REVIEWER’S COMMENTS

MEED-D-17-00780R1

A simple and short microbiology practical improves undergraduate nursing students' awareness of bacterial traits and ability to avoid spreading infections

RESPONSE TO REVIEWER 1

Comment 1: The authors used the term "microbiology" many times in the paper: but it is not clear the meaning of this term in each context. Some times it is referred to the discipline, some times it is referred to infection control. In many cases it should be substituted with a clearer and informative expressions.

Response: We are very sorry that the reviewer felt “microbiology” term to be ambiguous without appropriate explanation in a timely manner. Meanwhile, we have defined “microbiology” practical’s purpose for the students to recognize the presence of unseen bacteria around us through simply visualizing skin bacteria, directly linking to HAIs. According to the comment with the definition, we explained microbiology meaning at all such times and in some cases replaced more adequate term.

We hope the reviewer can be satisfied by this modification.
Comment 2: In the section "introduction": sentences between line 79 and 93 contain information not relevant for the paper and the paragraph should be appropriately shortened.

Response: According to the reviewer’s comment, the paragraph was faithfully shortened.

Comment 3: Methods: line 110-111 the expressions used for hand hygiene should be more appropriate and coherent with the international literature.

Response: According to the reviewer’s comment, we modified the sentence in specific as follows (See underline): Two short practical sessions (in total, only 3 hours, over 2 days, 7 days apart) were used to demonstrate the effectiveness of hand hygiene by washing hand with or without disinfectants (70% alcohol or waterless antiseptic agent) on eliminating hand bacteria.

Comment 4: Methods: it should be emphasized that the main difference between the 2 categories of students has been the practical exercise.

Response: Another reviewer pointed out less meaning comparison of advanced class (See below). We therefore omitted all the sentences with figure in terms of the comparison of advanced class. We hope that the reviewer can agree with the changes.

Comment 5: Results: lines from 180 to 183 do not

Response: Very sorry. According to the reviewer’s comment, we omitted it properly with the sentences showing comparison of advanced class.

Comment 6: Tables 2 and 3: the values of percentages in the Y axis do not need to report 3 digits after comma;

Response: According to the comment probably on figures, we corrected the values to 1 digits after comma.

Comment 7: Discussion: lines from 195-196 it is not clear the meaning:

Response: Very sorry. We completed the sentence pointed out by the reviewer as follows: We found that a simple short practical program in microbiology course can have a strong impact on increasing awareness about unseen bacteria inhabiting around us among nursing students.
Comment 8: Discussion: lines from 234 to 237: on the basis of the provided data this sentence seems too much optimistic: at the moment the paper suggests only that this methods are promising;
Response: According to the comment, we omitted the overstatement.

Comment 9: Bibliography is pertinent but not updated: there are more recent papers which afford the topic.
Response: Very sorry. According to the comment, we updated it by replacing the following papers. The replaced papers are as follows:


Comment 10: In the section figures titles and legends the notes are really longer than needed
Response: Very sorry, too many redundant sentences in these sections. According to the comment, we shorten the legends in the figure section.

RESPONSE TO REVIEWER 2

Comment 1: The study is weak from a theoretical point of view, since it does not provide a theoretical framework for the activity. The general framework of experiential learning could be a good choice. Yardley S, Teunissen PW, Dornan T. Experiential learning: AMEE Guide No. 63. Med Teach. 2012;34(2):e102-15.
Response: We appreciate the reviewer’s thoughtful comment. Meanwhile, we apologize the reviewer for lacking enough explanation at the view point of theoretical framework. As pointed out by the reviewer, our study has relied on experiential learning to awaken awareness. According to the reviewer’s comment, we strengthen theoretical framework in our study design,
referred by the reviewer’s choice. In specific, we added the sentences in the introduction as follows: Furthermore, it is well accepted a theoretical framework that experiential learning consisting of a cycle with concrete experience, reflective observation, abstract conceptualization and active experimentation, can awaken awareness [15].

Comment 2 (REQUESTED REVISIONS): From the design point of view, the idea of comparing post intervention score of nursing students with a different class, which did a different course is very weak. There are dozens of possible reasons for the observed differences or similarities, other than the intervention. I wonder if providing only the pre-post score could be a better choice.

Response: We agree with the reviewer’s comment. We omitted the paragraph with figure in terms of the advanced clinical microbiology course.

Comment 2: The scoring system is not specified (one point for each right answer?), and the questionnaire psychometric properties were not described (at least the basic elements of classical item analysis: mean, distribution of scores, difficulty index)

Response: We apologize to the reviewer for not enough explanation regarding to scoring system on questionnaire. As mentioned in the text, each of the questions allowed multiple answers. Also, according to the comment, we estimated psychometric properties including mean, distribution of scores and difficulty indexes. As a result, difficulty score tended to be close to the expected score through the practical, but not statistical significant. Cronbach α score on the questionnaires showed >0.8 (before practical, 0.904; after practical, 0.890), indicating validity of evaluation items in questionnaire. We added the data with figure (Fig. 3) into the revised manuscript.

Comment 3: In the Discussion, the limitations of the study should be discussed. More references about similar experiments and a comparison with their results would enhance the quality of the article.

Response: According to the comments, we cited more references and also stated the limitation as follows:

Meanwhile, this study has a limitation that this study provided only the second-grade nursing students class, lacking comparison to those of other nursing courses. Further study should be needed to clarify our conclusion.