Author's response to reviews

Title: Healthcare workers' and parents' perceptions of measures for improving adherence to hand-hygiene

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Version: 2 Date: 13 May 2011

Author's response to reviews: see over
Dear Editor,

Please find enclosed the revised version of the manuscript entitled "Healthcare workers’ and parents’ perceptions of measures for improving adherence to hand-hygiene" by Marta Luisa Ciofi degli Atti, Alberto Eugenio Tozzi, Gaetano Ciliento, Manuel Pomponi, Silvia Rinaldi, and Massimiliano Raponi.

We would like to thank Reviewers for their valuable comments; please find below the point-by-point description of the changes made to the manuscript in response to their comments.

Please also note that some corrections to the references have been made, and Acknowledgments have been added to the text. All changes are highlighted. The revised manuscript conforms to the journal style.

Thanking you in advance for your consideration.

Sincerely,

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Reviewer 1

**General Major Compulsory Revisions**

Abstract’s conclusions were revised, taking into account reviewer’s comment. In detail, we have underlined that information on HCWs’ and parents’ perceptions can be useful for identifying actions for hand hygiene promotion. In our study we have also analyzed determinants of perceptions, and we have found that education and information activities are associated with better perceptions of various actions for improving adherence. Though it is not certain if individuals with better perceptions also have better behaviors, improving education and information activities seems to be relevant, not only to increase knowledge on hand hygiene, but also to improve perceptions on effectiveness of actions to be implemented.

The revised text is now:

“Investigating HCWs’ and parents’ perceptions of measures for improving adherence can provide useful information for implementing actions for hand-hygiene promotion in children’s hospitals. In this study, HCWs’ and parents’ perceptions were similar; alcohol-based hand-rub availability was perceived as the most useful tool, confirming its crucial role in multimodal interventions. Poor perception of inviting parents to remind HCWs to perform hand-hygiene has been previously observed, and deserves further investigation. Information and education activities were associated with more positive perceptions regarding various improvement measures. Though the relationship between perceptions and behaviours remains to be fully determined, HCWs should participate in formal training and families should be properly informed, not only to increase knowledge, but also to improve perceptions on effectiveness of actions to be implemented.”

In the text of the manuscript, we have also modified the final sentences of the Conclusions, which are now as follows:

“Though the relationship between perceptions and behaviours remains to be fully determined (33, 34), we found that information and education activities were associated with more positive perceptions regarding various improvement measures. All HCWs should participate in formal training and families should be properly informed on hand hygiene, not only to increase knowledge and possibly to increase adherence (7, 11), but also to improve perceptions on effectiveness of actions to be implemented.”

**Statistical Major Compulsory Revisions**

We have revised the Tables as indicated. In detail:

- Table 1. Denominators are 139 HCWs and 236 Parents in all cells but one (i.e., HCWs Years of Practice). We have thus maintained No 139 and 239 in the Table’s title, and we have added a note about the number of respondents to the cell of the HCWs’ Years of Practice.
- Tables 2-3. We have removed No 139 and 239 from Titles, and we have added to each cell the number of respondents.
- Table 4. We have added a note stating that denominators used for calculating percentages vary from cell to cell, according to the number of respondents.

**Statistical Minor Essential Revisions**

In the Methods, we have clarified that questionnaires were administered to one parent of each hospitalized child, i.e. to the parent who was with the child all day long. In fact, during hospitalization one parent/caregiver is invited to stay with the child all day long, while other relatives and visitors can stay in patients’ rooms during wards’ visiting hours.
Confidence Intervals were calculated with MidP-exact test. This information has been added to the Methods.

Throughout the text, the terms “multivariate analysis” and “multivariate models” have been corrected with “multiple regression” or “multiple logistic regression”.
Reviewer 2

Reviewer’s report

We have found these comments very useful, and we have revised the manuscript as follows:

Abstract. Background has been changed to: “This study was conducted to evaluate perceptions of healthcare workers (HCW) and parents regarding hand-hygiene and effectiveness of measures for increasing hand-hygiene adherence, in a children’s hospital in Italy”. Last sentences of Results have been modified in: “Factors that affected HCWs perceptions of the effectiveness of actions for improving adherence to hand hygiene included years of practice, type of ward and previous formal training on hand hygiene. For parents, factors affecting perceptions included previous information on hand hygiene and previous hospitalizations for their child.” Conclusions were modified as reported in the answer to the General Major Compulsory Revisions of Reviewer # 1.

Introduction. The last sentence has been changed to “In the present study, we evaluated perceptions of both HCWs and the parents of hospitalized children regarding hand-hygiene and perceived effectiveness of measures for increasing hand-hygiene adherence in a children’s hospital in Italy”.

Methods. We have specified that the HCW questionnaire was based on the Perception Survey for Health-Care Workers of the WHO Cleanyourhands campaign (15). We have also described how the question regarding perceived effectiveness of various measures for improving hand hygiene was formulated (i.e. “In your opinion, how effective are the following interventions to increase compliance with hand hygiene?”).

Discussion. The first sentence has been modified to “Investigating perceptions of the effectiveness of measures for improving hand hygiene is a key factor in promoting adherence, since it can help to implement interventions that are perceived as most effective.” We have also modified various terms, in order to better clarify factors that affected perceptions. All changes are highlighted in the manuscript.

Conclusions. The last sentences were modified as reported in the answer to the General Major Compulsory Revisions of Reviewer # 1.

References 33 and 34 have been added to the manuscript.