Reviewer's report

Title: Hand hygiene instruction decreases illness-related absenteeism in elementary schools: a prospective cohort study

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Reviewer: Nils-Olaf Hübner

Reviewer's report:

The authors describe a hand hygiene intervention study in a prospective cohort design over 8 months (from October 2009 to May 2010). The study was conducted in two elementary schools. The purpose was to compare illness-related absenteeism rates among students given access to hand hygiene facilities versus students given both access and short repetitive instruction in use. Study results showed that hand hygiene instruction decreases absenteeism rates, especially during the flu season.

Major comments:

BACKGROUND

The described problem of absenteeism in schools, universities or day care centers due to colds and gastrointestinal diseases has been widely described in the literature. This includes studies that have examined the effect of educational programs on hand hygiene and illness rates. (For example: White, C. et al., The impact of a health campaign on hand hygiene and upper respiratory illness among college students living in residence halls, J Am Coll Health. 2005 Jan-Feb;53(4):175-81.)

The aim of the study and the extent to which this approach differs from the existing literature should be worked out better.

METHODS

The methodology described leaves some important questions open:

1. How was the randomization of the intervention and controls performed?
2. How was it ensured that only students in the intervention group received the instructions? What if information were passed among the children, for example in cross-class activities? Especially as it is added in the discussion that the study was conducted at a time of heightened hand hygiene awareness.
3. How exactly were the relevant diseases defined in advance? Who controlled the self-reporting by parents? Did other, noninfectious reasons contribute to the collapsed absenteeism rate (e.g. asthma?)? If yes, to a relevant extend?

These questions should be addressed and answered in the text.

RESULTS

The demographic characteristics could be supplemented with information on sex
and age.

As in described the methods section, the intervention was implemented from October 2009 to May 2010. However, evaluations are also done for September 2009 as part of the influenza season (e.g. Figure 3), please explain.

According to Tables 2a and 2b, the total absence in the “non-influenza months” was higher on average per month in comparison to “influenza months”. Unfortunately this is not further broken down graphically. Furthermore the corresponding graph is not divided for both schools. One idea could be another graph complementary to Figure 3 showing the rates over the entire course (October - May).

Without a breakdown of absences to reasons, this sub-analysis of the “influenza season” of a (yet short intervention) is not very conclusive. What is the extra information provided? I would recommend to omit this section or to break it down more deeply.

DISCUSSION

During the influenza season, the rate in intervention group at Alcott School was 65.9%, but over the course of the study it is 78.6%. Therefore, the rate must much higher in the other months, right? What are possible causes for this? And if so, the sub-analysis is more than just misleading. Please explain.

MINOR COMMENTS:
none

RECOMMENDATION:
The study confirms previous results from several other groups ("9-14"). The extra information provided is quite small, the more, as the design has several limitations as rightly stated by the authors. The sub-analysis is misleading and should be extended or, preferably, omitted.

Level of interest: An article of limited interest

Quality of written English: Acceptable

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