Author’s response to reviews

Title: Effectiveness of message framing on women's intention to perform cytomegalovirus prevention behaviors: A cross-sectional study

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Version: 1 Date: 14 Sep 2017

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BMWH-D-16-00311

Response to Reviewers

Technical Comments:

COMMENT: -Please include a completed STROBE checklist as part of your revised manuscript.

RESPONSE: A STROBE checklist has been completed and included with the revised manuscript

COMMENT: -Please provide the full name of the university institutional review board that approved your study

RESPONSE: We have included the name of the university.
COMMENT: -Please provide a full list of abbreviations at the end of the paper

RESPONSE: We added a list of abbreviations at the end of the paper (p. 22)

Reviewer #1:

COMMENT: Dr Thackery and colleagues provide a thorough and scholarly presentation of messaging options to consider for CMV prevention messages, that have the goal of reducing CMV transmission to pregnant women and then congenital CMV infection and disease, which is a major public health problem with no vaccine.

They adequately provide background of the issue, the methodology and results and the limitations.

My only suggestion is perhaps a mild reduction in the methodology narrative because they are adequately referenced and the length of the methods portion stalls the paper just a little. I know and concede methods are very important and key in research, but here it may be shorted just a little, if needed.

Also, do the authors think knowing the CMV serologic status of the women would influence their acceptance or intent to practice the precautions? Is this important or tangential to the messaging efforts?

RESPONSE: Thank you. We have reduced the methodology narrative. As far as whether knowing the CMV serologic status would influence acceptance or intent to practice the behaviors, yes, we feel this would be important to messaging efforts. However, as for now, routine screening is not recommended or offered (unless patient requests) and thus we did not consider it. It would however be important for future research.
Reviewer #2:

COMMENT: The authors evaluated the effect of message framing on women's intention to perform cytomegalovirus (CMV) prevention behaviors involving handwashing, not sharing food and eating utensils, not kissing a child on the lips and not placing a pacifier in the mouth after it was in a child's mouth.

The methods of the study is too complicated. It is very difficult to understand the results.

RESPONSE: We have reduced the methodology narrative to make it easier to read.

Reviewer #3:

COMMENT: The US authors evaluated how message framing affected women's intention to perform (not actual performance) CMV prevention behaviour using online survey of 840 pregnant women. They showed intention to perform CMV preventive measures was dependent on preceding CMV knowledge (present in 15.5%), message credibility, perceived CMV severity, behavioural control and response efficacy. Approximately half to two thirds of respondents indicated they intended behaviour change following seeing the CMV fact sheet. This led the authors to suggest messaging around avoiding kissing on the lips and sharing as foci.

RESPONSE: Thank you.

COMMENT: The authors have researched an important area, and provided good background for the potential researchers in this area. However, this is a particular population without any discussion of how the population differs from others.

RESPONSE: We have clarified in the limitations section that our demographic distribution was similar to other national survey panels studying CMV. We also clarify that the percent of women with a college degree or greater is higher than the US estimate of 30% and though we cannot directly compare with US census data with this study's income categories, the distribution indicates that our sample maybe be more wealthy. We note that it is possible that women on
these panels may not represent all women who are pregnant or thinking about becoming pregnant.

COMMENT: P4l12 Women exposed in the second and third trimester can also have infected fetuses, and these may be affected by CMV.

RESPONSE: We have modified the text to indicate that women can also be infected any time prior to or during pregnancy.

COMMENT: P4l13 CMV vaccines are available, they are either ineffective or unlicensed.

RESPONSE: We have modified the text to read that there are no current effective or licensed CMV vaccines.

COMMENT: P4l18 The Harrison 2015 reference is a good summary of the issues, but inappropriate here as it is a consensus paper

RESPONSE: We have replaced the reference.

COMMENT: P7l9 The use of the structure regarding the questions is atypical for a research paper. It would be useful to integrate these more clearly into the text, as repetition of these in the results and discussion is not undertaken, making the paper harder to read.
RESPONSE: We have removed the numbered research questions and included them as part of the text. We have kept the specific hypotheses, as the STROBE checklist required by BMC Women’s health indicates that specific hypotheses should be stated in the introduction. We originally repeated the hypotheses in the results section when presenting the data and that remains the same in the revision.

COMMENT: P8l1 Here and elsewhere, the authors should justify why they chose this design?

RESPONSE: We have clarified the selection of the study design to indicate that the 2x2 reflects two likelihood conditions (the chance of CMV infection is a small, but it is also the most common infection in children) and two outcomes (what a person has to gain or to lose, based on message framing theory).

COMMENT: P8l16 Does previous consent result in bias?

RESPONSE: We have modified the text to indicate that they have agreed to be part of a panel and not traditional research consent. We also added to the limitations section that these women may be different than women who have not agreed to be in a panel.

COMMENT: P15l8 How did the authors correct for number of comparisons performed?

RESPONSE: The study had one primary outcome measure: the behavioral intention scale. Additional secondary outcomes measures (behavior-specific) were also included in the manuscript. These outcomes are delineated such that the reader is aware of the number of statistical comparisons made. Specific comparisons were determined by our hypotheses ahead of analysis. Therefore, consistent with modern epidemiologic methodology, no correction for multiple comparisons was performed (see. Rothman, KJ. No adjustments are needed for multiple comparisons. Epidemiology 1990 Jan 1(1):43-6.).
COMMENT: P19116 This is an important observation

RESPONSE: Thank you.

COMMENT: Figures are excellent

RESPONSE: Thank you.

COMMENT: Tables are too numerous - Table 3 could be in the text and tables 4/5 could be supplementary material.

RESPONSE: We have removed table 3 and added narrative to the text. However, in doing so, we recognize that this is not conventional for population survey research; having a table to compare conditions is standard.

Tables 4 and 5, these are essential to the study results presenting the logistic regression data. Describing the results as part of the text would require extensive narrative. The table simplifies and adequately presents the study results. We have split table 5 to three parts to make it more readable.