**Author’s response to reviews**

**Title:** The influence of medical providers on HPV vaccination among children of Mexican mothers: Comparison between Mexico and the Midwest region of the United States

**Authors:**

Mariela Bahena (mariela.bahena@unmc.edu)

Marcela Carvajal-Suarez (b.carvajalsuarez@unmc.edu)

Amr Soliman (asoliman@med.cuny.edu)

Luo Jiangtao (jiangtao.luo@unmc.edu)

Armando De Alba (armando.dealba@unmc.edu)

**Version:** 2  **Date:** 07 Feb 2019

**Author’s response to reviews:**

Armando de Alba, MD, MPH  
Department of Health Promotion  
College of Public Health  
University of Nebraska Medical Center  
984373 Nebraska Medical Center  
Omaha, NE 68198-4355

February 07, 2019

BMC Public Health  
BioMed Central  
The Campus, 4 Crinan Street  
London N1 9XW  
United Kingdom

Subject: Edits to the manuscript ID PUBH-D-18-02764 entitled “The influence of medical providers on HPV vaccination among children of Mexican mothers: Comparison between Mexico and the Midwest region of the United States.”

Dear editors,

We thank the reviewers for the revision of our manuscript and for the comments provided. Our detailed response is as follows:
COMMENT: Describe how the option "I don't know" was scored

RESPONSE: Thank you for your comment. We scored the "I don't know" option as “zero” since we were adding only the positive answers. The level of HPV knowledge was assessed by adding the points. We added this information to the manuscript (see page 8).

***

COMMENT: Describe the outcome measures including reliability estimates

RESPONSE: Thank you. We have described the outcome measures and the Cronbach’s alpha reliability in the measurement section on page 8. The Cronbach's alpha for HPV knowledge was 0.818, the Cronbach's alpha for HPV vaccination beliefs was 0.734, which indicate acceptable reliabilities.

***

COMMENT: In the results section where you report socio-demographic characteristics briefly highlight the differences across sites

RESPONSE: Thank you for your suggestion. The differences across sites were highlighted at the bottom of page 9.

***

COMMENT: Explain the reasoning behind conducting statistical tests for each item of the knowledge and beliefs questionnaires, conducting such a large number of tests inflates Type I error

RESPONSE: Thank you for the recommendation. In our study, logistic regression model showed significance. We considered appropriate to ask what kinds of independent variables were associated or were different between these two groups. We were thinking that the results could provide guidance to government decision makers in the case that they would like to improve the vaccine rate.

We share the same opinion with the reviewer that a large number of tests would inflate the Type I error. However, we would like to clarify that our comparisons were for different variables rather than multiple comparisons for one variable. Please see page 9.

***

COMMENT: Looking at the knowledge items, mothers from Mexico consistently score higher so conducting mean comparisons for each items does not add too much to the picture.
RESPONSE: Thank you, we agree with this observation. We provided this information as an intent to have strict scientific justification to know if higher scores were associated with the vaccine between these two groups.

***

COMMENT: Authors indicate that results hold if vaccination status is controlled, please include these results.

RESPONSE: Thank you. Here are the results that support our response:

1. When the variable “Mothers with Children Vaccinated” = Yes (1) there is no significant difference for the knowledge level between two countries with p-value 0.7071. Please see the following table:

<table>
<thead>
<tr>
<th>Country</th>
<th>Knowledge</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Poor</td>
<td>Good</td>
</tr>
<tr>
<td>USA</td>
<td>Count</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>% within Country</td>
<td>17.10%</td>
</tr>
<tr>
<td></td>
<td>% within Knowledge</td>
<td>37.50%</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>7.10%</td>
</tr>
<tr>
<td>Mexico</td>
<td>Count</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>% within Country</td>
<td>20.40%</td>
</tr>
<tr>
<td></td>
<td>% within Knowledge</td>
<td>62.50%</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>11.90%</td>
</tr>
<tr>
<td>Total</td>
<td>Count</td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>% within Country</td>
<td>19.00%</td>
</tr>
</tbody>
</table>

2. When the variable “Mothers with Children Vaccinated” = No (0) there is a significant difference for the knowledge level between two countries with p-value <0.0001. Please see the following table:

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Country</td>
<td>Count</td>
</tr>
<tr>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>USA</td>
<td>45</td>
</tr>
<tr>
<td>% within Country</td>
<td>71.40%</td>
</tr>
<tr>
<td>% within Knowledge</td>
<td>78.90%</td>
</tr>
<tr>
<td>% of Total</td>
<td>39.80%</td>
</tr>
<tr>
<td>Mexico</td>
<td>12</td>
</tr>
<tr>
<td>% within Country</td>
<td>24.00%</td>
</tr>
<tr>
<td>% within Knowledge</td>
<td>21.10%</td>
</tr>
<tr>
<td>% of Total</td>
<td>10.60%</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
</tr>
<tr>
<td>% within Country</td>
<td>50.40%</td>
</tr>
</tbody>
</table>

We included this information in the manuscript. Please see page 10.

***

COMMENT: It does not make sense to assess intentions in mothers who have vaccinated their children. Alternatively, use vaccination status as the dependent variable. Otherwise, justify your rationale for assessing intentions in mothers who have vaccinated.

RESPONSE: We did use vaccination status as the dependent variable for the analysis. Our variable consisted of mothers that vaccinated at least one child with at least one dose and the answer options were Yes/No.

***

COMMENT: Line 68 grammatical error

RESPONSE: Thank you for your feedback. We corrected the grammatical error in line 68.

COMMENT: Lines 94-95 unclear sentence

RESPONSE: The sentence previously on lines 94-95 has been reworded and can be found on page 5.
***

COMMENT: Line 112 revise to state "and the vaccine"

RESPONSE: “Its vaccine” was changed to “the HPV vaccine.” Please see page 6.

***

COMMENT: Line 125 revise to "in Xalapa…"

RESPONSE: “From Xalapa” has been changed to “in Xalapa.” Please see page 6.

***

COMMENT: Be consistent with the use of the terms Hispanic/Latino.

RESPONSE: Thank you for your comment. We have reviewed the term and fixed the term on pages 4, 5, and 12.

***

COMMENT: Line 149 remove "to the final versions of the survey"

RESPONSE: We made the change suggested. Please see page 7.

***

COMMENT: Lines 175-176 reword

RESPONSE: Thank you for your suggestion. We reworded the sentence. Please see page 8.

***

COMMENT: Line 198 remove "in Mexico"

RESPONSE: We removed “in Mexico” in line 198.

***

COMMENT: Line 213 correct grammatical error

RESPONSE: Grammatical error was corrected. See page 10.

***

COMMENT: Line 239 reword
RESPONSE: We reworded the line regarding the “Hosmer-Lemeshow goodness of fit.” Thank you for the suggestion. See page 11.

***

COMMENT: Correct formatting mistakes in tables

RESPONSE: Formatting mistakes were reviewed and changed.

***

COMMENT: Be consistent with the addition of footnotes across tables

RESPONSE: Thank you for noting it. We made changes to make the footnotes consistent across tables.