

## PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

### ARTICLE DETAILS

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| <b>TITLE (PROVISIONAL)</b> | Investigating Canadian parents' HPV vaccine knowledge, attitudes, and behaviour: A study protocol for a longitudinal national online survey |
| <b>AUTHORS</b>             | Shapiro, Gilla; Perez, Samara; Naz, Anila; Tatar, Ovidiu; Guichon, Juliet; Amsel, Rhonda; Zimet, Gregory; Rosberger, Zeev                   |

### VERSION 1 - REVIEW

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| <b>REVIEWER</b>        | Lila Rutten<br>Mayo Clinic, United States |
| <b>REVIEW RETURNED</b> | 09-Jun-2017                               |

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| <b>GENERAL COMMENTS</b> | This is an extremely well-written manuscript with a carefully crafted rationale, rigorously developed methods, and clearly delineated dissemination plan. Please clarify that you are planning a cross sectional study with independent samples at time 1 and time 2. Use of the word longitudinal introduces confusion about your design. I am assuming that this is cross sectional, but this needs to be made clear. Use of the word longitudinal in this case would be misleading. If, in fact, you are planning a longitudinal study, this should be clarified and approach for re-contacting respondents and accounting for knowledge changes introduced by the first data collection must be discussed. |
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| <b>REVIEWER</b>        | Maria Grandahl<br>Department of Public Health and Caring Sciences, Uppsala University, Uppsala, Sweden |
| <b>REVIEW RETURNED</b> | 12-Jul-2017  |

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| <b>GENERAL COMMENTS</b> | There is a need to increase HPV vaccination rates globally. This study will examine the correlates of HPV vaccine decision-making in parents of school-aged girls and boys, and evaluate changes in parental knowledge, attitudes and behaviours over time. This is an impressive and important project that will bridge the knowledge gap regarding correlates and behavioural aspects for HPV vaccine. The study is well-designed, the paper is well-written and well structured (easy to read and easy to understand the methods/procedure). I believe it is strength to approach girls and boys and to use theoretically driven constructs such as HBM and to use validated questionnaires. The results of the project will be very helpful when designing future interventions and addressing parents declining the vaccine. |
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|  | <p>I only have minor comments. The aims are somewhat different in the Abstract and the key message (deliberately?).<br/> ...”it is timely to evaluate comprehensively variations in program outcomes that target females and males” – girls and boys are previously used in the paper?<br/> UK or US spelling? Behaviour /vaccination program...<br/> It believe that STROBE Checklist or similar will be helpful when presenting the results.</p> <p>I wish the authors the best of luck with this interesting and important project. In the end this project will contribute to decrease HPV-related cancer and save lives.</p> |
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| <b>REVIEWER</b>        | Jasjit Singh, MD<br>CHOC Children's Hospital<br>Orange, CA<br>USA |
| <b>REVIEW RETURNED</b> | 13-Jul-2017   |

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| <b>GENERAL COMMENTS</b> | <p>This study should provide useful information to the substantial work being done in the area of parental attitudes towards vaccines. In addition to the other psychosocial and behavioral factors mentioned, when discussing HPV vaccine specifically, age of the child should be evaluated as well. Given the fact that HPV is an STI, there is known parental hesitation in vaccinating a 9-11 year old child, compared with a 15-16 year old. This may vary between parents of girls vs. boys. This would be another factor to be considered in developing interventions that are unique to different parent populations.</p> |
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### VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

Reviewer Name: Lila Rutten

Institution and Country: Mayo Clinic, United States

Please state any competing interests or state 'None declared': None Declared

Please leave your comments for the authors below

This is an extremely well-written manuscript with a carefully crafted rationale, rigorously developed methods, and clearly delineated dissemination plan. Please clarify that you are planning a cross sectional study with independent samples at time 1 and time 2. Use of the word longitudinal introduces confusion about your design. I am assuming that this is cross sectional, but this needs to be made clear. Use of the word longitudinal in this case would be misleading. If, in fact, you are planning a longitudinal study, this should be clarified and approach for re-contacting respondents and accounting for knowledge changes introduced by the first data collection must be discussed.

\*\*\*We thank the reviewer for this helpful comment. We have now clarified in the “Study Design” Section that we are planning to conduct an observational study on a large national sample of Canadian parents at two time points. Participants who have responded to the survey at Time 1 will again be contacted at Time 2. To analyze our study’s objectives we will use both longitudinal and

cross-sectional designs, depending on the research questions. Accordingly, we now clarify: “This study uses a longitudinal design to collect self-reported data through an online questionnaire from a large national sample of Canadian parents. Surveys are administered at two time points: Time 1 during August-September (2016) and Time 2 during June-July (2017). Participants who responded to the survey at Time 1 were contacted again at Time 2 using the same questionnaire.”

We agree with the reviewer that our study’s design, which uses the same participants at Time 1 and Time 2, is not able to control for knowledge changes that occur as a result of the first survey. We now write in the “Limitation” section, “Another limitation of this study’s design is that because we assess the same population at two time points, this study does not control for knowledge changes that occur as a result of the first survey. As our study’s objective (objective four) is to compare provinces with and without provincial funding, this study makes the assumption that knowledge changes as a result of the first survey effects individuals from all provinces equally.”

Reviewer: 2

Reviewer Name: Maria Grandahl

Institution and Country: Department of Public Health and Caring Sciences, Uppsala University, Uppsala, Sweden

Please state any competing interests or state ‘None declared’: None declared

Please leave your comments for the authors below

There is a need to increase HPV vaccination rates globally. This study will examine the correlates of HPV vaccine decision-making in parents of school-aged girls and boys, and evaluate changes in parental knowledge, attitudes and behaviours over time. This is an impressive and important project that will bridge the knowledge gap regarding correlates and behavioural aspects for HPV vaccine. The study is well-designed, the paper is well-written and well structured (easy to read and easy to understand the methods/procedure). I believe it is strength to approach girls and boys and to use theoretically driven constructs such as HBM and to use validated questionnaires. The results of the project will be very helpful when designing future interventions and addressing parents declining the vaccine.

I only have minor comments. The aims are somewhat different in the Abstract and the key message (deliberately?).

\*\*\*Thank you for this comment. This is no longer an issue as the journal has requested key message be removed as this is not their style for protocol papers.

...”it is timely to evaluate comprehensively variations in program outcomes that target females and males” – girls and boys are previously used in the paper?

\*\*\*Thank you for this comment. We have now made this change so we consistently refer to ‘girls and boys’ throughout the manuscript.

UK or US spelling? Behaviour /vaccination program...

\*\*\*Thank you for this comment. We have now consistently used UK spelling for BMJ Open.

It believe that STROBE Checklist or similar will be helpful when presenting the results.

\*\*\*Thank you for this comment. We will keep the STROBE Checklist in mind when presenting our results in future publications.

I wish the authors the best of luck with this interesting and important project. In the end this project will contribute to decrease HPV-related cancer and save lives.

\*\*\*We thank the reviewer for the helpful comments.

Reviewer: 3

Reviewer Name: Jasjit Singh, MD

Institution and Country: CHOC Children's Hospital, Orange, CA, USA

Please state any competing interests or state 'None declared': None declared

Please leave your comments for the authors below

This study should provide useful information to the substantial work being done in the area of parental attitudes towards vaccines. In addition to the other psychosocial and behavioral factors mentioned, when discussing HPV vaccine specifically, age of the child should be evaluated as well. Given the fact that HPV is an STI, there is known parental hesitation in vaccinating a 9-11 year old child, compared with a 15-16 year old. This may vary between parents of girls vs. boys. This would be another factor to be considered in developing interventions that are unique to different parent populations.

#### VERSION 2 – REVIEW

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| <b>REVIEWER</b>        | Lila Rutten<br>Mayo Clinic, United States |
| <b>REVIEW RETURNED</b> | 28-Jul-2017                               |

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| <b>GENERAL COMMENTS</b> | The authors have done a nice job responding to reviewer concerns. |
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| <b>REVIEWER</b>        | Maria Grandahl<br>Department of Public Health and Caring Sciences, Uppsala<br>University, Uppsala, Sweden |
| <b>REVIEW RETURNED</b> | 01-Aug-2017   |

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| <b>GENERAL COMMENTS</b> | Thank you for this revised manuscript. I recommend it for publication |
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