

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Knowledge towards Human Papilloma Virus (HPV) infection and attitude towards its vaccine in the Kingdom of Bahrain: A cross sectional study
AUTHORS	Husain, Yusra; Alalwan, Amal; Al- Musawi, Zakeya; Abdulla, Ghadeer; Al-Ahmed, Khulood; Jassim, Ghufraan

VERSION 1 – REVIEW

REVIEWER	Ramin Asgary Milken Institute of Public Health at George Washington University
REVIEW RETURNED	07-May-2019

GENERAL COMMENTS	<p>Thank you for the opportunity to review this paper. This is an important topic.</p> <p>The study objectives are clear, methods is well described, and discussion to a good degree covers the meaning and implications of the results.</p> <p>Considering limited data in regards to HPV and its prevention from MENA countries this paper adds to the body of knowledge on this subject.</p> <p>Couple of important concerns, issues, and suggestions:</p> <p>a) It is unclear how much of a problem HPV is in Bahrain. Is this a big issue in term of its prevalence or incidence rate? among what age group? This is important to know because it could define the selection of subjects and its implications.</p> <p>b) generally speaking the knowledge and attitude regarding HPV vaccine among adults should help with vaccination of their children and likely not much of an effect for themselves. Unless this is different for Bahrain which the authors need to explain.</p> <p>c) Why the authors chose to obtain oral consent as opposed to written consent?</p> <p>d) Clarify what was the reasoning and rationale behind categorizing the age in the groups as is now? Would the correlation or association have changed if the age defined as different categories? and if you used this category then how would that impact your recommendations and conclusions?</p> <p>e) The participants are</p> <p>f) There is an important impact on assessing attitude when authors provided knowledge or some teaching sessions to individuals who never heard of HPV (which was very high percentage in this population). That alone could have greatly impacted the subsequent attitude among participants and could account for better attitudes. Since this educational session was not provided through main stream media or ads and was delivered by health professional I assume then the impact on attitude alone could have come from that intervention alone and may not represent the overall attitude of population at large</p>
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	<p>g) The authors did not describe where the original survey comes from and how the adaption was done for the Bahrain population and socio-cultural background. Additionally it is advised that they share the actual survey.</p> <p>h) I think addition of some qualitative interviews would have add to the authors understanding of the actual problem and knowledge and attitudes.</p> <p>The discussion section would need to include these nuances and address their impact on the internal validity and external validity of the results. In particular the impact of educational intervention before assessing attitude in majority of the participants.</p>
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REVIEWER	Amy Albright, MSc University of Alabama, United States
REVIEW RETURNED	20-May-2019

GENERAL COMMENTS	<p>I would respectfully recommend that the authors utilize an English language editing service, as the manuscript has multiple grammatical and language errors.</p> <p>Page 3, Line 19: Would the authors be able to provide information for why HPV is not included in Bahrain's typical vaccination schedule? This may be particularly relevant for providing a cultural framework for the results.</p> <p>Page 3, Line 25: This statistic is more than two years out of date. There are likely to be updates to this given the rising awareness of the public health impact of HPV.</p> <p>Page 3, Line 33: While the study objectives are clearly stated, there is no mention in the introduction of prior research or literature regarding attitudes towards HPV. While there is a detailed factual review of HPV and potential health outcomes, attitudes are not mentioned. This is particularly important for HPV given the availability of false information regarding HPV vaccination (i.e., sexual promiscuity), as well as being one of the main objectives of this study.</p> <p>Page 3, Line 55: Why were physicians excluded, particularly if other healthcare professionals such as nurses were not?</p> <p>Page 4, Line 5: The wording is confusing. Does this mean that all participants were required to speak both English and Arabic? Please provide clarification, particularly as it is later stated that the questionnaire was administered in Arabic.</p> <p>Page 4, Line 19: To provide more information about the specific questions used, it may be helpful to include a statement here that there is a table in the results section with further information.</p> <p>Page 4, Line 26: Who was administering the questionnaires? Was it a physician? Nurse? Non-healthcare professional? This needs to be discussed, as it may impact the results.</p> <p>Page 4, Line 26: Why did the researchers choose to administer the questionnaire in an interview format, rather than allowing participants to fill out a survey privately? This is not addressed here or in the discussion section, and this may again directly impact the results. Please discuss the implications.</p>
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	<p>Page 4, Line 29: How were participants briefed about HPV? The information provided may have certainly influenced their attitudes and beliefs, so more details about this need to be provided.</p> <p>Page 5, Line 50: Please be more specific with the p value. Rather than $p = 0.00$, $p < .01$ (if correct) would be more accurate.</p> <p>Page 7, Line 13: This is one of the reasons why more information about the type of briefing participants received on HPV is very important. If they were told that the vaccine is safe by a physician, for example, this would likely have a high impact on the results.</p> <p>Page 7, Line 33: What side effects specifically are participants concerned about? Are they physical or social side effects? This is important to know for HPV vaccination given the prevalence of incorrect information in Western countries (i.e., vaccination causes sexual promiscuity and early sexual activity).</p> <p>Page 8, Line 35: This is the first mention of "GCC." Please define.</p> <p>Page 8, Line 50: This is an interesting point and has been demonstrated in other studies, but there is no citation to support this information. In addition, was there information from the current study that led the authors to believe this might be relevant to their specific sample?</p> <p>Page 9, Line 25: The health care sector is very broad and includes individuals with a wide range of health literacy and education. Please provide more information about the specific professions of individuals in this study.</p> <p>Page 9, Line 34: This is an interesting point, but there is room to explore why this is. Are there cultural reasons why most women are willing to receive a vaccine that they had not previously heard of? This is particularly important to discuss given the contrast that the authors are making with other countries across the world in preceding paragraphs.</p> <p>Page 10, Line 33: This sentence is confusing. HPV vaccination for men is currently available in many countries.</p> <p>Not all references are in AMA format (i.e., 24).</p>
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VERSION 1 – AUTHOR RESPONSE

Reviewer(s)' Comments to Author:

Reviewer: 1

Reviewer Name: RaminAsgary

Institution and Country: Milken Institute of Public Health at George Washington University

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

Please leave your comments for the authors below

Thank you for the opportunity to review this paper. This is an important topic.

The study objectives are clear, methods is well described, and discussion to a good degree covers the meaning and implications of the results.

Considering limited data in regards to HPV and its prevention from MENA countries this paper adds to the body of knowledge on this subject.

Couple of important concerns, issues, and suggestions:

a) It is unclear how much of a problem HPV is in Bahrain. Is this a big issue in term of its prevalence or incidence rate? among what age group? This is important to know because it could define the selection of subjects and its implications.

No previous study has explained the burden of HPV in Bahrain.

Only one study has been conducted in Bahrain to determine the prevalence of HPV. It has been included in our references. They found the overall prevalence of HPV in Bahrain to be 9.8% as of 2010-2011. However, this study enrolled women from 4 health centers only.

b) generally speaking the knowledge and attitude regarding HPV vaccine among adults should help with vaccination of their children and likely not much of an effect for themselves. Unless this is different for Bahrain which the authors need to explain.

Unfortunately, we did not ask the participants if they were willing to vaccinate their children. It was assumed that if participants were accepting the vaccine for themselves, they would not have an issue with vaccinating their children as well. This is an important point to consider in future studies.

c) Why the authors chose to obtain oral consent as opposed to written consent?

The Ethics Committee did not raise any issues against taking verbal consent. In addition, there were no major harms or side effects to completing the questionnaire so oral consent was considered by the ethics committee to be sufficient.

d) Clarify what was the reasoning and rationale behind categorizing the age in the groups as is now? Would the correlation or association have changed if the age defined as different categories? and if you used this category then how would that impact your recommendations and conclusions?

We categorized age in the mentioned intervals so that an almost equal distribution could be achieved. We also analysed the correlation between age and the different categories as continuous numbers and this yielded similar results to what we have reported. It did not affect the significance of results in any manner.

e) The participants are

f) There is an important impact on assessing attitude when authors provided knowledge or some teaching sessions to individuals who never heard of HPV (which was very high percentage in this population). That alone could have greatly impacted the subsequent attitude among participants and could account for better attitudes. Since this educational session was not provided through main stream media or ads and was delivered by health professional I assume then the impact on attitude alone could have come from that intervention alone and may not represent the overall attitude of population at large

The impact of our brief intervention on the attitudes towards vaccination cannot be excluded.

However, the intervention given was minimum and limited to the following:

“HPV stands for Human Papilloma Virus.

It is considered the most common sexually transmitted infection which can lead to cervical cancer. a vaccine is available. It can be given as a prevention at an early age starting age 9 years through age 26.”

g) The authors did not describe where the original survey comes from and how the adaption was done for the Bahrain population and socio-cultural background. Additionally it is advised that they share the actual survey.

It has been mentioned in methodology that our questionnaire has been adopted from 2 studies (references included). The questionnaire was mainly based on the Iranian study (Reference 16) but since their study population included only women, some questions were taken from the study in Pakistan to include points relevant to males (questions 16 and 18 in our study questionnaire). Since our populations hail from similar socio-cultural backgrounds, no adjustments needed to be made on that front. The questions of the Iranian and Pakistani survey are mentioned in their published research papers. Our survey questionnaire is attached.

h) I think addition of some qualitative interviews would have add to the authors understanding of the actual problem and knowledge and attitudes.
Qualitative interviews were beyond the scope of this study but it would have definitely deepened our understanding of the problem. It is something to be considered in future studies.

The discussion section would need to include these nuances and address their impact on the internal validity and external validity of the results. In particular the impact of educational intervention before assessing attitude in majority of the participants.

Has been included in discussion

Reviewer: 2

Reviewer Name: Amy Albright, MSc

Institution and Country: University of Alabama, United States

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

Please leave your comments for the authors below

I would respectfully recommend that the authors utilize an English language editing service, as the manuscript has multiple grammatical and language errors.

Paper has been edited using a proofreading service.

Page 3, Line 19: Would the authors be able to provide information for why HPV is not included in Bahrain's typical vaccination schedule? This may be particularly relevant for providing a cultural framework for the results.

The HPV vaccine is a relatively new vaccine and studies estimating the local burden of the disease are lacking. It will take some time for the vaccine to be included into the national vaccination schedule. Additionally, Healthcare in Bahrain for the local population is free, including vaccinations. Therefore, decisions on implementing the vaccine nationally need elaborate cost and budget considerations.

Page 3, Line 25: This statistic is more than two years out of date. There are likely to be updates to this given the rising awareness of the public health impact of HPV.

Updated statistics from December 2017 have been added.

Page 3, Line 33: While the study objectives are clearly stated, there is no mention in the introduction of prior research or literature regarding attitudes towards HPV. While there is a detailed factual review of HPV and potential health outcomes, attitudes are not mentioned. This is

particularly important for HPV given the availability of false information regarding HPV vaccination (i.e., sexual promiscuity), as well as being one of the main objectives of this study. We have included an additional paragraph regarding attitudes in the introduction.

Page 3, Line 55: Why were physicians excluded, particularly if other healthcare professionals such as nurses were not?

Physicians were excluded as they would have better knowledge of HPV and the vaccine.

Page 4, Line 5: The wording is confusing. Does this mean that all participants were required to speak both English and Arabic? Please provide clarification, particularly as it is later stated that the questionnaire was administered in Arabic.

Sorry for the confusion. English or Arabic speakers were invited to participate. Questionnaire was administered in the language of preference of the participant.

Page 4, Line 19: To provide more information about the specific questions used, it may be helpful to include a statement here that there is a table in the results section with further information.

Statement included.

Page 4, Line 26: Who was administering the questionnaires? Was it a physician? Nurse? Non-healthcare professional? This needs to be discussed, as it may impact the results.

Physicians (authors) administered the questionnaire. This has now been mentioned in data collection

Page 4, Line 26: Why did the researchers choose to administer the questionnaire in an interview format, rather than allowing participants to fill out a survey privately? This is not addressed here or in the discussion section, and this may again directly impact the results. Please discuss the implications. An interview format was used as it would ensure inclusion of illiterate participants as well as a higher response rate. It has been discussed in strengths and limitations of the study.

Page 4, Line 29: How were participants briefed about HPV? The information provided may have certainly influenced their attitudes and beliefs, so more details about this need to be provided.

The impact of our brief intervention on the attitudes towards vaccination cannot be excluded. However, the intervention given was minimum and limited to the following:

“HPV stands for Human Papilloma Virus.

It is considered the most common sexually transmitted infection which can lead to cervical cancer. a vaccine is available. It can be given as a prevention at an early age starting age 9 years through age 26.”

We have included brief details of the information we provided in the data collection.

Page 5, Line 50: Please be more specific with the p value. Rather than $p = 0.00$, $p < .01$ (if correct) would be more accurate.

P value has been edited

Page 7, Line 13: This is one of the reasons why more information about the type of briefing participants received on HPV is very important. If they were told that the vaccine is safe by a physician, for example, this would likely have a high impact on the results.

Thank you for bringing this to our notice. We have now included the briefing in the data collection section. There was no mention of vaccine safety or side effects to the participants in the intervention.

Page 7, Line 33: What side effects specifically are participants concerned about? Are they physical or social side effects? This is important to know for HPV vaccination given the prevalence of incorrect information in Western countries (i.e., vaccination causes sexual promiscuity and early sexual activity).

Unfortunately, participants were not asked about the nature of side effects they were concerned about. This can be an important point to consider in future studies.

Page 8, Line 35: This is the first mention of "GCC." Please define.

GCC has been removed from the sentence and now moved to strengths. GCC has been defined.

Page 8, Line 50: This is an interesting point and has been demonstrated in other studies, but there is no citation to support this information. In addition, was there information from the current study that led the authors to believe this might be relevant to their specific sample?

We observed during the interview process that some participants needed clarification if the virus we were talking about was HBV or HIV. Hence, we assumed that this kind of confusion could have been experienced in regional studies as well considering low HPV awareness programmes in this part of the world.

Page 9, Line 25: The health care sector is very broad and includes individuals with a wide range of health literacy and education. Please provide more information about the specific professions of individuals in this study.

The participants working in the health sector included nurses, lab technicians, radiology technicians and pharmacists.

Page 9, Line 34: This is an interesting point, but there is room to explore why this is. Are there cultural reasons why most women are willing to receive a vaccine that they had not previously heard of? This is particularly important to discuss given the contrast that the authors are making with other countries across the world in preceding paragraphs.

Our study did not generalize vaccine acceptance to females only. That was reported in other local and regional studies, mainly because their study population included only females.

Generally, people in Bahrain are very recipient of vaccination, going by the childhood vaccine coverage rates.

No MMR vaccine hesitancy was reported here during the anti MMR vaccine movement as well.

Page 10, Line 33: This sentence is confusing. HPV vaccination for men is currently available in many countries.

Sorry about the confusion. We meant when it becomes available in Bahrain. Sentence has been altered.

Not all references are in AMA format (i.e., 24).

References have been formatted using AMA style

VERSION 2 – REVIEW

REVIEWER	Ramin Asgary
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	George Washington University, USA
REVIEW RETURNED	14-Jul-2019

GENERAL COMMENTS	<p>Thank you for addressing and incorporating the comments. In regards to citations for your survey tool that you used to adapt to your population and cited in your methods section, please make sure that you use the original citation for original survey from the references of the current paper you have cited. I have copied and paste the original article below: Brabin L, Roberts SA, Farzaneh F, Kitchener HC. Future acceptance of adolescent human papillomavirus vaccination: a survey of parental attitudes. <i>Vaccine</i> 2006; 24: 3087-94. The second citation from Tahir Khan and et al is the original study for their developed survey and is appropriate to use. Thank you</p>
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REVIEWER	Amy Albright, MSc University of Alabama, USA
REVIEW RETURNED	27-Jul-2019

GENERAL COMMENTS	Thank you for your research contributions in this important area.
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VERSION 2 – AUTHOR RESPONSE

Reviewer(s)' Comments to Author:

Reviewer: 1

Reviewer Name: Ramin Asgary

Institution and Country: George Washington University, USA

Please state any competing interests or state "None declared?": None

*Competing interests statement changed to "None declared".

Please leave your comments for the authors below

Thank you for addressing and incorporating the comments.

In regards to citations for your survey tool that you used to adapt to your population and cited in your methods section, please make sure that you use the original citation for original survey from the references of the current paper you have cited. I have copied and paste the original article below:

Brabin L, Roberts SA, Farzaneh F, Kitchener HC. Future acceptance of adolescent human papillomavirus vaccination: a survey of parental attitudes. *Vaccine* 2006; 24: 3087-94.

The second citation from Tahir Khan and et al is the original study for their developed survey and is appropriate to use.

Thank you

* Thank you for the correction. Reference changed to the original study.

Reviewer: 2

Reviewer Name: Amy Albright, MSc

Institution and Country: University of Alabama, USA

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

*Competing interests statement changed to "None declared".