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Are Women Always Right? Comparing HPV Knowledge Between Men and Women

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Background

Human papillomavirus (HPV) infection is the most common sexually transmitted infection in the world contributing to negative health conditions in both genders. However, when comparing knowledge about HPV, women show having more knowledge about HPV. Research has shown more women were aware of the virus than men. Women also initiate HPV vaccination more than men with more knowledge about HPV associated with being vaccinated. Such findings suggest that gender comparisons in HPV research should be considered when discussing HPV prevention.

Hypothesis

Young adult women have more knowledge about HPV than young adult men.

Methods

A total of 1302 young adults (men: n=393; women: n=909) were surveyed on their level of knowledge concerning HPV. Each answered various knowledge-based questions related to HPV. Logistic regression was performed to conclude whether women have more knowledge about HPV than men.

Results

All our HPV knowledge measures were statistically significant (p <.05) in our logistic regression models. These 9 HPV knowledge questions were: general HPV knowledge (p < .001), knowledge of HPV commonality within women (p < .001), knowledge of HPV commonality within men (p < .001), HPV's risk of genital herpes (p < .001), HPV's risk of genital warts (p = .001), HPV's risk of oral cancer (p < .001) HPV's risk of anal cancer (p = .005) HPV's risk of cervical cancer (p < .001), and knowledge of HPV being sexually transmitted (p = .001).

Conclusion

Our data show that women are more likely to be knowledgeable about HPV than men. Our sample contained more women than men. Research including equal amounts of men and women could further investigate this relationship.

Human papillomavirus (HPV) is the most common sexually transmitted infection in the world. In America, around 42 million people are infected with HPV, and it is estimated that 13 million more Americans become infected each year including teenagers (Centers for Disease Control and Prevention, 2021). Both genders can become infected with HPV and while most HPV infections (9 out of 10) go away by themselves, sometimes HPV infections will last longer and can lead to a greater risk of certain cancers (American Cancer Society, 2017; Clifford et al., 2017; Grce & Mravak-Stipetić, 2014). Knowledge of HPV and its related health outcomes is an important aspect of prevention efforts. However, when comparing knowledge about HPV, research has shown women have more knowledge about HPV (Kim, 2012). Research has also shown women have higher HPV vaccination uptake than men, with knowledge about HPV associated with vaccination uptake (Preston & Darrow,

2019). This discrepancy between men and women may indicate greater effort in promoting vaccination and general knowledge about the disease among girls and women. The promotion of knowledge and vaccination for girls and women might lead some to believe that girls and women are the only ones affected by HPV (Kim, 2012). While both genders are likely to experience adverse health outcomes, women bear a disproportionate burden of oncogenic HPV Infection. There are about 13,000 women a year diagnosed with cervical cancer and 4,000 women a year who die because of it (American Cancer Society, 2017). Women who have high-risk HPV types 16, 18, 31, 33, 45, 52, and 58 make up 90% of cervical cancer patients throughout the world (National Cancer Institute, 2015). This high percentage of cervical cancer among those who have HPV could be one of the main reasons HPV information is heavily promoted for women and girls. However, HPV is also associated with cancer rates for men and includes anal and penile cancer as well as cancers of the oral cavity, head, and neck (Giuliano et al., 2008). The current trend that mainly promotes HPV knowledge toward women is incomplete when it comes to prevention and protection if the promotion does not include men. Understanding the differences in knowledge of HPV and HPV vaccination between the sexes can help with the development of advertising campaigns that target men specifically. The goal of this study was to investigate the association between gender and HPV knowledge. We expect to find that young adult women will have more knowledge about HPV than young adult men.

Method

Participants

A total of 1302 young adults, (men: n=393; women: n=909) were surveyed. The young adults participating were aged 18 to 26. Participants were surveyed on their level of knowledge concerning HPV. The ethnic/racial make-up of the sample was Caucasian (80%), African American (1%), Asian (6.8%), Pacific Islander (1%), Native American (.09%), Mixed Race (6.3%), and Other (3.2%). Most of the participants were female (69.6%), never married (81.3%), and had completed some college/technical school (66.8%). Common religious beliefs generally expect sexual abstinence until marriage; thus, we measured participants' commitment to their religious beliefs. The sample was considered moderately religious (75%), with 25% considered highly religious (See Table 1 for more demographic information).

Procedure

The participants were recruited from two universities within the United States. One of the universities was a highly Christian religious school and the other one was not. Research credit was offered to the students through SONA, an online research collection site used by the universities. Eligibility included being a current university student and being over the age of 18. Following consent, participants completed a 45-question survey asking about

Table 1. Demographic Information for Participants

Item	Frequency (percentage%)
Gender	
Female	909 (69.6)
Male	393 (30.1)
Ethnicity	
Caucasian	1038 (80)
Mixed Race	82 (6.3)
Asian	88 (6.8)
Other	42 (3.2)
Pacific Islander	14 (1)
African American	14 (1)
Native American	12 (.09)
Education Level	
High school graduate	363 (27.8)
Some college/technical school	873 (66.8)
College graduate	57 (4.4)
Some graduate school	9 (.7)
Post graduate school	2 (.2)
Marital Status	
Never Married	1062 (81.3)
Married	231 (17.7)
Living together	8 (.5)
Divorced	1 (.1)
Separated	1 (.1)
Religion	
Latter-day Saint (Mormon)	1030 (78.9)
Other	268 (20.6)
Religious Commitment	
High	326 (25)
Moderate	977 (75)

Note. This table displays the frequency and the percentage for each demographic for the overall sample used in this study (n = 1302). Adapted from "Strength of Belief: Religious Commitment, Knowledge, and HPV Vaccination Adherence" (Birmingham et al., 2019).

their knowledge of HPV, the HPV vaccine, and their religious commitment. The students were given the opportunity to win one of 20 $50 Visa gift cards. This study was approved by the university Institutional Review Board (IRB).

Measures

HPV knowledge was measured through a survey based on previous HPV research (Guerry et al., 2011; McRee et al., 2010). The survey included questions assessing the participant's knowledge of both HPV and HPV vaccination. For the purposes of our analysis, we used nine questions that focused on HPV knowledge assessed through *yes/no/do not know* items which included general HPV knowledge, knowledge of HPV commonality within

women, HPV commonality within men, risk of genital herpes, genital warts, oral cancer, anal cancer, and cervical cancer, from HPV infection. Knowledge of sexual transmission was also assessed.

Analysis

We used SPSS to perform logistic regression analysis and to investigate the association between men and women to determine if women have more knowledge about HPV than men. For this analysis, the correct answers (indicating they knew about that specific aspect of HPV) were coded as 1 and the incorrect/unsure answers (indicating they did not know about that specific aspect of HPV) were coded as 2.

Results

All our HPV knowledge measures showed gender associated with knowledge such that women had greater knowledge than men on each measure. All measures resulted in statistical significance ($p < .05$) in our logistic regression models. The individual analysis for the nine HPV knowledge questions were: general HPV knowledge (B= -.641, SE=.132, $p < .001$), knowledge of HPV commonality within women (B= -.733, SE=.127, $p < .001$), knowledge of HPV commonality within men (B= -.504, SE= .130, $p < .001$), HPV's risk of genital herpes (B= -.507, SE= .123, $p < .001$), HPV's risk of genital warts (B= -.395, SE= .121, $p = .001$), HPV's risk of oral cancer (B= -.479, SE= .135, $p < .001$), HPV's risk of anal cancer (B= -.376, SE= .133, $p = .005$), HPV's risk of cervical cancer (B= -.715, SE= .124, $p < .001$), and knowledge of HPV being sexually transmitted (B= -.434, SE= .134, $p = .001$).

Discussion

Research has shown women to be more knowledgeable about HPV than men (American Cancer Society, 2017; Birmingham et al., 2019; Froberg et al., 1986; Kim, 2012; National Cancer Institute, 2015; Preston & Darrow, 2019). Our results were consistent with this research and shows a difference in knowledge between genders for each question pertaining to HPV (Kim, 2012). This could be because women tend to be more aware of and have more knowledge about health overall, which may lead them to be proactive in taking care of their health. Health-related knowledge especially knowledge about HPV is often heavily promoted to women. This has created the perception that HPV is mainly a women's disease, however, there is evidence that both genders experience adverse health outcomes. This knowledge gap is harmful to both genders. Though women generally have more knowledge, there is still a significant lack of knowledge overall. This trend of a lack of knowledge overall is especially concerning. Education for both genders could increase HPV awareness and knowledge. With knowledge associated with greater preventative measures against the disease, such as vaccination, promoting knowledge to both genders would be beneficial.

Limitations

While our study did show that there was a significant difference between gender and HPV knowledge, there were limitations. Our sample contained more women than men. In addition, most of our sample consisted of Caucasian highly religious young single adult college students. Research including equal amounts of men, women, and adults who are not current students could add additional information. These aspects of this study could have limited our results and conclusions. It may be beneficial to go beyond these demographics to see if factors like race or religion play a role in individuals' level of HPV knowledge. Age and marital status may also impact how much people know about HPV and its consequences. Therefore, it is important to conduct further research on whether these demographics influence HPV knowledge.

Despite these limitations, our study has strengths. The sample was quite large and included survey knowledge questions for several different types of knowledge. HPV is typically marketed as a women's disease, leading women to be more aware of it. It would be beneficial to educate both genders on the disease. Further research could investigate the depth and knowledge of gender differences relating to health.

Conclusion

HPV is the most common infection in the world, leading to adverse health outcomes for both genders. However, it is mainly perceived as a women's disease possibly due to promotion geared toward women and their health. Because of this, we expected women to have more knowledge about HPV than men. Young adults were surveyed on their knowledge of HPV, HPV vaccination, adherence, and religious commitment. Our results showed that women were more knowledgeable about HPV than men. Our results were consistent with previous research suggesting that the perception of HPV as a women's disease is being perpetuated. This trend can be harmful but educating both genders about HPV and its vaccine could improve this knowledge gap. Our study can help researchers in the creation of campaigns and other preventative actions to inform about HPV, and the need to target men as well as women. HPV is a serious disease that should not be ignored. Therefore, it is crucial to bring more awareness to men and women of all ages to increase knowledge about HPV.

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