

Increasing Knowledge about Human Papillomavirus (HPV) and HPV Vaccination among Adolescents in Lusaka. (Primary Research) areas of Emphasis

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Abstract

It can be asserted that knowing where adolescents gain information about human papillomavirus (HPV) vaccines can be helpful in planning public health interventions aimed at promoting HPV vaccination. This study assessed the following: exposure to specific sources of information about HPV vaccines, self-reported helpfulness of these sources of information, and whether the specific source of information was linked to knowledge about HPV vaccine amongst adolescents. It was discovered that most of the adolescent's access information about HPV from sources that included Media (Internet, TV, Radio, and Newspapers) and individual (Doctors/nurses, parents/guardians, teachers and peers). However, sources such as TV, Doctors/nurses and Radio were rated to be ineffective in disseminating information. It should be noted that in order to increase awareness of HPV and the vaccine, there is need to fully understand and utilise sources that adolescents are mostly in contact with and easily accessible. Such information sources greatly influence the decisions and actions that adolescents take in their life endeavours. Insufficient access to information about HPV and the vaccine will continue to contribute to the increase in cervical cancer cases in the country. Therefore, more effort is needed to ensure that the adolescents receive the information needed with regards to HPV vaccination.

Keywords: human papillomavirus vaccine, adolescents, knowledge, perceptions, information.

Introduction

This capstone project takes the form of primary research with a focus on increasing knowledge about human papillomavirus (HPV) and vaccination against it among adolescents of Lusaka. Human papillomavirus infection is caused by human papillomavirus (HPV). Furthermost HPV infections are usually without symptoms and resolve unexpectedly. However, in certain individuals, HPV infection by the non-cancerous HPV 6 and HPV 11 persist resulting into genital warts and laryngeal papillomatosis. Genital warts are very common and highly infectious. According to World Health Organization (WHO), 70% of cervical cancer in women is caused by HPV 16 and HPV 18. About 60% to 90% of the other cancers are also associated with HPV. HPV 6 and HPV 11 are common causes of genital warts and laryngeal papillomatosis (Conroy 2009).

Vaccination of adolescents between the ages of 9 and 13 is recommended to prevent most common types of HBV because the peak time for acquiring infection for both men and women is shortly after becoming sexually active. Cervical cancer screening, such as with the Papanicolaou test (pap), or inspection of the cervix after dabbing it with acetic acid, can detect pre-cancerous lesions. Early detection allows for timely treatment which results in healthier outcomes. Treatment of pre-cancerous lesions on the cervix includes Cryotherapy which can be performed by trained health personnel. Cryotherapy is a simple procedure in which the lesions are frozen using carbon dioxide (CO₂) gas and a Cryo Gun with different sizes of probes. Only lesions that are bigger than the probes or disappearing into the os are referred for more specialised treatment. Cervical cancer screening has reduced the number of deaths occurring from cervical cancer in the developed world. Warts can be removed by freezing (Wetzel 2007).

Evidently, the concept of cervical cancer screening has abridged both the number of cases and number of deaths from cervical cancer especially in the developed world. Warts can also be removed by freezing (Wetzel 2007).

The main content

Theoretical framework

It is indispensable to have a theoretical framework on which to emphasise enactment of evidence-based research practice. In view of this research, the theory that will be used is the Health Belief Model (HBM). This model is composed of six constructs that influence people's decisions about whether or not to take action to prevent, to screen for and control illness (NCI, 2005). The HBM can be applied to evidence-based intervention in order to increase knowledge in parents and adolescents about HPV and the HPV vaccine and increase HPV vaccination rates in adolescents. The writers of the HBM articulate that individuals will only be ready to act on a health judgement if all the following six constructs are present:

- a. Perceived susceptibility. People must believe they are vulnerable to the condition.
- b. Perceived severity. People must believe the condition has serious consequences.
- c. Perceived benefits. People must believe that taking action would reduce their susceptibility or its severity (Wetzel 2007).
- d. Perceived barriers. People must believe the benefits of taking action outweigh the costs.
- e. The cue to action. People must be exposed to factors that prompt action.
- f. Self-efficacy. People must feel self-assured that they have the capacity to successfully carry out the action.

The authors comment that "health motivation is central to the HBM and the model is useful for designing short and long-term Behaviour Change Strategies" (NCI, 2005). For example, the HBM can be applied, to a scenario where a parent (s) and their adolescent children decide whether to vaccinate them against HPV or not.

It is worth noting that the scholars of this theory remark that, "health motivation is principal to the HBM and the model is beneficial for scheming short and long-term health behavior change approaches (NCI, 2005)."

The HBM can be applied for example to a scenario where a parent (s) and their adolescent children decide whether to vaccinate them against HPV or not. The adolescent child receives education about HPV and about the HPV vaccine in his/her health class at school and his/her mother hears similar information at a meeting she attends in the community (perceived susceptibility). Both parent and child learn that HPV can cause genital warts and cancer in males and females (perceived severity).

They both learn that the HPV vaccine is recommended for adolescents and adults, ages 9-26, and can prevent infection from the types of HPV that cause genital warts and cancer (perceived benefits). It can be argued that after receiving the necessary information on HPV, the parent and the adolescent child will be able to make informed choice with regards to safeguarding their health through HPV vaccination ((White & Dudley-Brown, 2012).

Problem statement

The recommendation by the Advisory Committee on Immunization Practices (ACIP) is to vaccinate all adolescents across the globe. However, the rates of vaccination and awareness campaigns in developing Zambia, particularly Lusaka, have remained low. A number of health centres around the city of Lusaka pointed out that adolescents (male & females) still have not been visiting the centres with regards to HPV screening and vaccination unless they suspect that they have contracted a Sexually Transmitted Infection (STI). This in its own has perpetuated the continued growth or increase of cervical cancer cases and other related HPV infections among adolescents. It is worth noting that once people are well informed and educated about for example a health problem, it becomes easier for people to access health care and ultimately combat the health problem identified.

The purpose of the study

This capstone project was to establish ways of increasing knowledge about the human papillomavirus and its vaccine among adolescents in Lusaka. This involved determining and recommending effective information sources that can be used to inform or communicate to the adolescents with regards to Human papillomavirus vaccine and its benefits. It is worth noting that

cervical cancer cases caused by HPV infection have continued to be on the rise and in most cases the victims (Especially adolescents) have not been well informed and have insufficient knowledge about Human papillomavirus and its vaccine.

Research question

1. How can knowledge about the Human papillomavirus and the HPV vaccine be increased among adolescents?

Literature review

Information sources about human papillomavirus (HPV) and its vaccination among adolescents

Knowledge about the HPV infection and its vaccine has been associated with higher HPV vaccine uptake; more perceived benefits of vaccination; fewer perceived barriers to vaccination; greater perceived susceptibility to the HPV-related disease; and the belief that influential individuals would recommend vaccination. But despite the important knowledge and perceptions on vaccine uptake, little is known about the factors associated with higher knowledge or positive perceptions toward HPV vaccination, especially among adolescent girls. Therefore, determining factors associated with the knowledge and perceptions on HPV vaccine among adolescents is of interest because interventions affecting the change in knowledge and perceptions are needed to increase the uptake (Herbert 2013).

It is likely that certain individuals like parents and clinicians will influence the acquisition of knowledge and the change of attitude regarding the HPV vaccine because adolescents are likely to have positive attitude towards HPV vaccination when they perceive that their parents think that vaccination is important and are willing to have them vaccinated against HPV. Likewise, provider recommendation for vaccination is a critical factor in terms of vaccine acceptability for parents as well as adolescents. However, the influence of adolescents' social networks and media on knowledge and perceptions toward the HPV vaccine among adolescent girls have not been examined, to our knowledge.

While mass media is useful in providing information and helping people acquire knowledge about the HPV vaccine, interpersonal interactions on social network have the ability to effectively form and change health behaviour perceptions. For example, if parents and adolescents perceive the HPV vaccine to be risky, information provided through websites, presentations, printed public health materials, and one-on-one counselling may lack the required components needed to persuade them to accept and receive the HPV vaccine. Additionally, if family members and friends being sources of information share negative experiences e.g. of the Influenza vaccine making them sick, this can negatively influence HPV vaccination acceptance. Therefore, HPV vaccine acceptance may be dependent on parents and adolescents acquiring accurate information and positive messages from multiple sources including mass media and people within their social networks (Conroy 2009).

It has been maintained that Human Papillomavirus (HPV) is one of the common sexually transmitted infections. About 80–90% of the HPV infections are transient and are resolved by the body's immune response, but persistent replication of viral DNA may lead to genital warts, abnormal Papanicolaou (Pap) tests, cervical dysplasia, cervical, vulvar, oropharyngeal and penile cancer. Of the sexually active women, 70–80% will acquire infection with HPV at some point during their life. The peak prevalence of HPV infections is found in young women in their 20 s, whereas men have a constant risk to contract new infections throughout their lifetime

Worldwide, cervical cancer happens to be the fourth most common cancer, affecting half a million women each year with around 85% of the cases occurring in developing countries. It is responsible for 270,000 deaths every year. Sub-Saharan Africa is said to bear the largest burden of cervical cancer worldwide, where this condition is the leading cause of cancer mortality among women due to high prevalence of the HPV and scarce cervical cancer screening programmes or limitations in their operations. High-quality treatment is either unavailable or unaffordable. The high prevalence of co-infection with human immunodeficiency virus (HIV) in these settings also increases the risk of HPV infection and progression to cancer.

Currently, the United States Food and Drug Administration (FDA) have approved two HPV vaccines for use. The bivalent (HPV2) vaccine protects against HPV types 16 and 18; the quadrivalent (HPV4) vaccine protects against types 6, 11, 16, and 18. Both vaccines are recommended for use in females, while only the quadrivalent vaccine is recommended for use in males. The Centres for Disease Control and Prevention's (CDC) Advisory Committee on Immunization Practices (ACIP) currently recommends routine vaccination of all 11-12-year-old females with either of the two-vaccine series (Bivalent 3-dose or quadrivalent vaccine series), and the 11-12-year-old males with the quadrivalent vaccine.

Barriers to accessing HPV vaccine among adolescents

It is worth noting that vaccine safety and efficacy is one of the utmost mutual reasons for HPV vaccine rebuttal cited especially by parents/guardians of adolescents. Dempsey, et.al (2009) performed a qualitative study of 52 mothers of 11-17 year- old girls in Michigan. The parents finished a telephone survey and responded to questions about motives why they accepted or declined the HPV vaccine for their children. 33 parents had acknowledged the HPV vaccine and 19 had declined vaccine for their children. Out of these, those who declined had substantial distresses about the safety of the HPV vaccine and they also commonly felt their children were at low risk for HPV or were too young to take the vaccine. The distress of side effects from the vaccine is another generally mentioned cause by parents who have not vaccinated their children against HPV. Sotiriadis, et.al (2012) performed a qualitative study in Greece of 5,249 women who had a 13-year-old son or daughter. The mothers filled out a survey to explore the factors affecting women's acceptability of the vaccine for themselves, their daughters and their sons (Herbert 2013).

A qualitative research piloted in New South Wales, Australia by Bernard, Cooper Robbins, McCaffery, Scott, and Skinner (2011) observed the concept of fear, the response, and features affecting fear in adolescent girls who were going to take the HPV vaccine. Adolescents from 9 schools were either observed on the vaccination days at school or were questioned in focus groups. It was noted that 3 fear responses were recorded which included fear of pain, having needle prick skin, and of vaccine content coupled with possible side effects. The outcomes indicated that the girls fear responses intensified the responses of their peers, for example girls were more strained when waiting in large groups with peers, and the absence of privacy stirred up fear. Furthermore, the outcomes also conveyed that a number of girls knew very little about HPV and why they were receiving the vaccine. The misinformation that most of the girls received about the vaccine came through rumours from friends and family. The 3-dose HPV vaccination proportion fluctuated from 64%-90% among girls from the target schools (Thompson 2006).

Research method

This capstone employed both qualitative and quantitative methods of data collection and analysis. This is where the researcher developed a questionnaire for data collection, the data collected was then statistically analysed and discussed in line with the problem and research question. The research target sample size was 20 Adolescents (male & female) from Kamwala secondary school.

Data analysis/Tables and figures

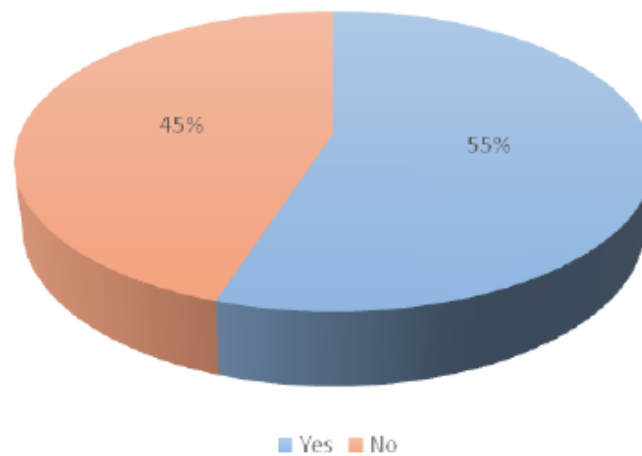
The data collected was analysed using the statistical package for social sciences and excel as follows;

Table 1. Gender

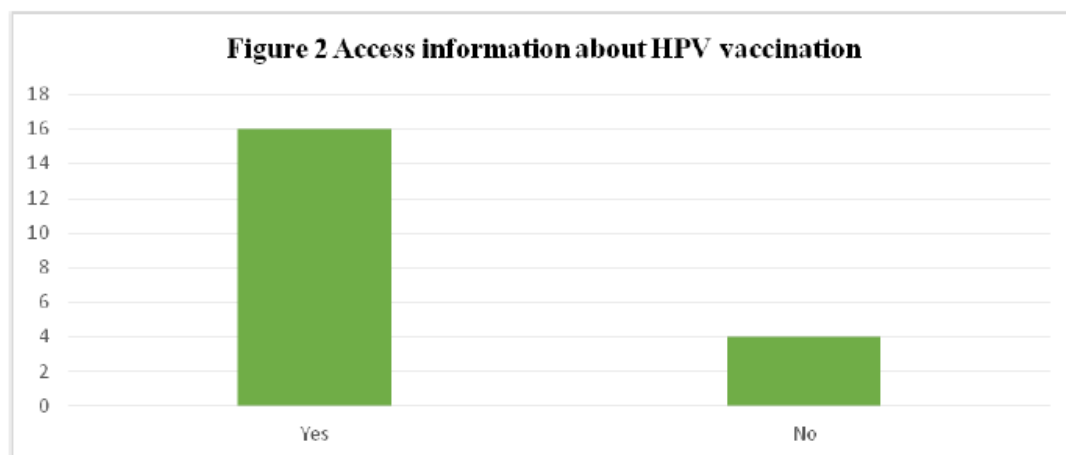
RESPONSE	FREQUENCY	PERCENTAGE (%)
Male	8	40
Female	12	60
Total	20	100

Source: Field data 2018.

Most of the participants were Females (60%) and Male were on a 40% representation. This is a clear indication of an inclusive participation of parties affected by the human papillomavirus.

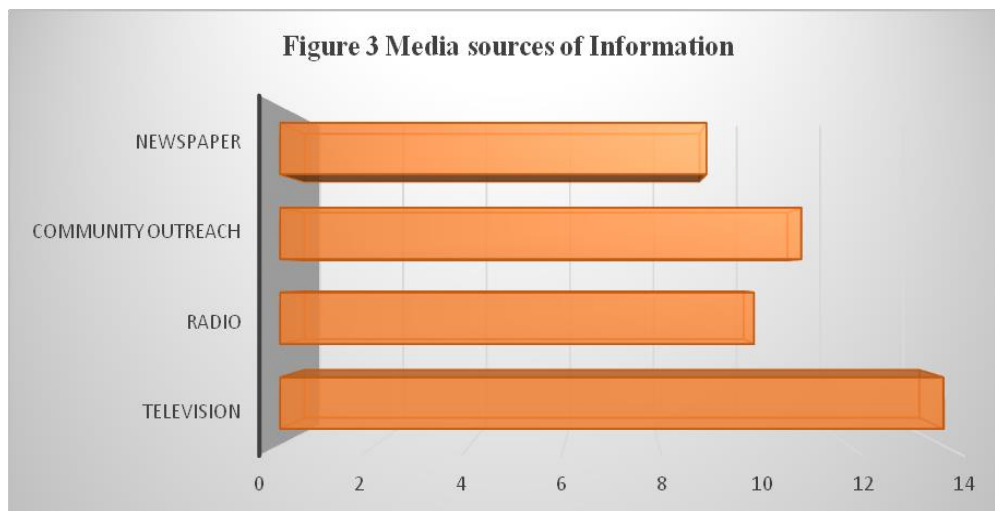


The majority (55%) of the participants stated that they have accessed HPV program at their nearest health centre and 45% indicated that they are not aware of HPV program. This clearly indicates that in as much as there are HPV programs in health centres, there is still much more to be done to sensitize the people.



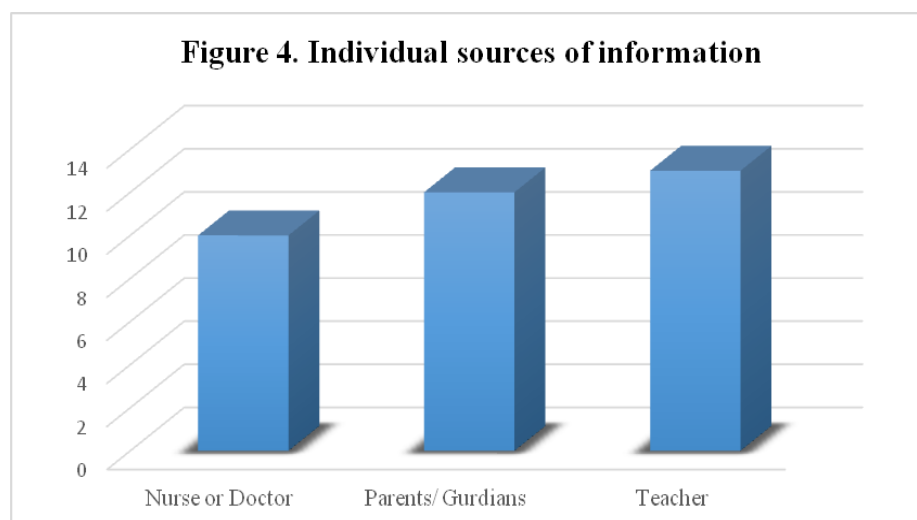
Source: Field data 2018.

80% of the participants indicated that they have had access to information about HPV vaccination while 20% indicated that they did not have access to such information. This clearly shows that there is still much to be done with regards to disseminating information about HPV vaccination as indicated by the 20% who stated not having access.



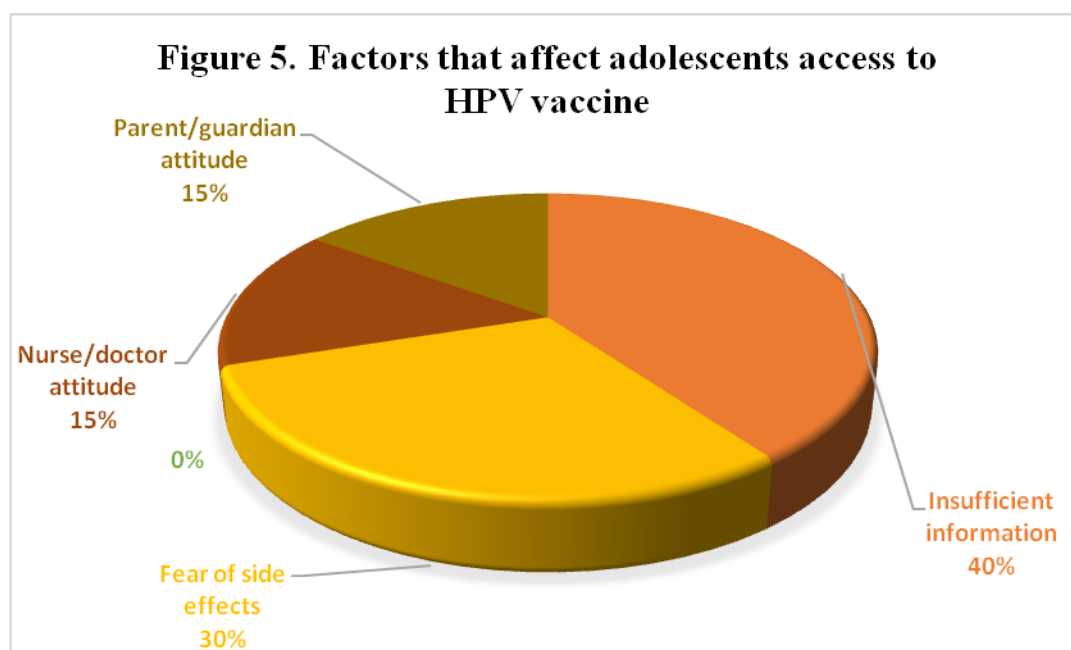
Source: Field data 2018.

The participants stated that they accessed information about HPV through media sources that included newspaper, Television, Radio and health community outreach programs. However, despite the availability of these sources, the participants stated that they were not very effective and consistent in delivering the needed information. The media that were rated ineffective included Radio, Television and Newspapers.



Source: Field data 2018.

On the other hand, participants in this research indicated that they also obtain information and knowledge about HPV vaccine through individual sources who included Nurses/Doctors, School Teacher and Parents/Guardians as shown in Figure 4. However, the Nurse/Doctor and parents/guardians were rated to be ineffective sources of information.



Source: Field data 2018.

The factors that affect adolescents from accessing knowledge about HPV and its vaccine include, insufficient information, side effects, nurse/doctor and parent/guardian attitude towards HPV vaccine. The participants indicated that nurse/doctor and parents/guardians show a reluctant attitude towards discussing the benefits of the HPV vaccine and the effects of HPV if not treated early.

Results/discussion

From the data collected and presented, it can be argued that HPV vaccine uptake has been associated with higher HPV knowledge, more perceived benefits of vaccination, fewer perceived barriers to vaccination, greater perceived susceptibility to HPV-related disease, and belief that influential individuals would recommend vaccination. Therefore, determining factors associated with HPV vaccine knowledge and perceptions among adolescents is of interest as interventions affecting change in knowledge and perceptions are needed to increase uptake.

Individuals, especially parents and clinicians, are likely to influence adolescent's vaccine knowledge and attitudes. Adolescents tend to have positive attitudes about HPV vaccination when their parents intend to vaccinate them and when adolescents perceive that their parents think vaccination is important. Likewise, provider recommendation for vaccination is a critical factor in terms of vaccine acceptability for parents as well as adolescents. However, the influence of adolescents' social networks and media on knowledge and perceptions toward the HPV vaccine among adolescent girls have not been examined, to our knowledge.

While mass media is useful in providing information and helping people construct knowledge about the vaccine, the interpersonal interactions of the social network have the potential to be more effective in forming and changing health behavior perceptions. For example, if the HPV vaccine is perceived to be risky by parents and adolescents, information provided through websites, presentations, printed public health materials, and one-on-one counselling may lack the required components needed to persuade parents and adolescents to accept and obtain the HPV vaccine. Additionally, family members and friends as sources of information have been documented to negatively influence vaccination behaviours; for example, if they share negative experiences of the influenza vaccine making them sick. Therefore, HPV vaccine acceptance may be dependent on parents and adolescents obtaining accurate information and positive messages from multiple sources including mass media and people within their social networks.

Conclusion

In summary, this project demonstrates that sources of information about HPV vaccines, including media and individuals, are associated with greater knowledge and more positive perceptions among adolescent girls who received the first HPV vaccine dose. The findings from this study should be used to create culturally appropriate HPV vaccine interventions by disseminating medically accurate information through the most common reported sources of information. Professionals developing interventions should consider the sources of information that were associated with higher knowledge and perceptions, and utilize these avenues to increase adolescents' HPV vaccine knowledge, improve the appropriateness of their perceptions, and increase vaccine uptake. Furthermore, to maximize the impact of future vaccine campaigns, these findings suggest the need to assess the accuracy of HPV vaccine messages and to heightened awareness of those involved in health care to provide accurate HPV vaccine messages given the associations between media and individuals as sources of information and adolescents' knowledge and perceptions about the HPV vaccine.

Recommendation

- Parents/ guardians and Teachers should be engaged consistently in formulation of HPV vaccine sensitisation programs
- Both media and individual sources should be fully utilised to ensure effective dissemination of information and knowledge about HPV and its vaccine
- Health professionals should ensure that they are actively involved in HPV vaccine sensitization as they are one of the key influencers in health behaviour change

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