

**KNOWLEDGE, ATTITUDE AND PERCEPTION OF HUMAN PAPILLOMA VIRUS
(HPV) VACCINATION AMONG PARENTS OF YOUNG GIRLS (AGED 8 – 12) IN
MBARARA CITY**

BY

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Declaration

I, **Twikirize Bright**, hereby declare to the Senate of Bishop Stuart University, that this dissertation titled “**Knowledge, attitude and perception of human Papilloma virus (HPV) vaccination among parents of young girls (aged 8 – 12) in Mbarara City**” is my original work and has neither been submitted nor being concurrently submitted for a master degree award in any other institution. I further affirm that this dissertation has neither in whole nor in part been previously presented elsewhere for the award of another master degree.

Signature.....

Date.....12/11/2023

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Approval

This dissertation entitled “Knowledge, attitude and perception of human papilloma virus (HPV) vaccination (HPV) among parents of young girls (aged 8 – 12) in Mbarara City” has been done under our supervision and is now ready for submission with my approval.

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13th Nov, 2023
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Signature 

13 11 2023
Date...../...../.....

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(Research Supervisor)

Dedication

I dedicate this report work to God the almighty who makes all things possible, my ever loving parents and the entire family, my classmates, all the authors cited in this project and my friends for their concern, love, inspiration and support to ensure that this project is completed.

Acknowledgement

The researcher wishes to recognize the role played by the entire staff and administration of Bishop Stuart University, the lecturers and all my colleagues in this course who assisted me in one way or the other to achieve the completion of this project. My special thanks go to my supervisors, Dr. Rabecca Kalibwani and Mr. Amanyire Jordan for the time, criticisms, guidance and patience in supervising and correcting every error in this research work to ensure it is up to this standard.

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Table 5: Level of uptake of HPV vaccination amongst young adolescents**Error! Bookmark not
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List of Abbreviations

CC	Cervical Cancer
CDCP	Certified Data Center Professional
DV	Dependent Variable
FDA	Food and Drug Administration
HBM	Health Belief Model
HPV	Human Papilloma Virus
IVs	Independent Variables
KAP	Knowledge Attitude and Perception
LICs	Low Income Countries
MOH	Ministry of Health
NGOs	Non- Governmental Organizations
PATH International	Professional Association of Therapeutic Horsemanship International
SSA	Sub-Saharan Africa
STDs	Sexually Transmitted Diseases
WHO	World Health Organization

Operational definitions

Vaccine; any preparation used as a preventive inoculation to confer immunity against a specific disease, usually employing an innocuous form of the disease agent, as killed or weakened bacteria or viruses, to stimulate antibody production. The administration of vaccines is called vaccination. Vaccination is the most effective method of preventing infectious diseases; widespread immunity due to vaccination is largely responsible for the worldwide eradication of smallpox and the restriction of diseases such as polio, measles, and tetanus from much of the world (Smith-Lindsey, 2016).

Human papilloma virus (HPV): Most commonly sexually genital transmitted infection among adolescents and young adults, causing approximately 70% of all cervical cancer cases (Markowitz et al., 2013).

HPV vaccine: A vaccination series approved by the Food and Drug Administration (FDA) for 9- to 26-year-old females (CDCP, 2016). Human papilloma virus (HPV) vaccines are vaccines that prevent infection by certain types of human papilloma virus. Available vaccines protect against two, four, or nine types of HPV.

Quadrivalent: Vaccine that is highly efficacious in the prevention of persistent HPV infection, cervical cancer lesions, and genital warts due to HPV 6, 11, 16, or 18 (Smith-Lindsey, 2016).

An attitude is a psychological construct, a mental and emotional entity that inheres in, or characterizes a person. They are complex and are an acquired state through experiences.

A perception is the organization, identification, and interpretation of sensory information in order to represent and understand the presented information or environment. All perception involves signals that go through the nervous system, which in turn result from physical or chemical stimulation of the sensory system (CDCP, 2016).

Uptake; In this study uptake refers to an act or instance of absorbing and incorporating a service or practice.

Knowledge; the fact or condition of knowing something with familiarity gained through experience or association.

Young girls; Girl between 10 and 15 years old (or a female child)

Abstract

Introduction: In an effort to reduce cervical cancer burden, many governments have emphasized Human Papilloma Virus (HPV) vaccine as an important prevention strategy. Despite its effectiveness in preventing human papilloma virus (HPV) infection and free HPV immunization programs, vaccine acceptance is not guaranteed as some cultures are still against it due to various reasons. This study was conducted to assess the knowledge, attitude and perception of human papilloma Virus vaccination (HPV) among parents of young girls (aged 8 – 12) in Mbarara City.

Methodology: The study was cross sectional in nature employing both qualitative and quantitative approaches for data collection and analysis. Information was collected from a sample of 288 respondents and 12 key informants using questionnaire and interviews. Data was analyzed using Microsoft Excel and STATA Version 18.0

Results: The study discovered that level of Knowledge on HPV vaccination among parents of young girls was relatively low (41.3%) despite most respondents revealing to have heard about HPV and its associated infections like cervical cancer and genital warts. The study also found out that a large portion of community members (62.1%) still had negative attitudes towards the vaccine which has negatively affected their perceptions. Negative attitudes and perceptions equally played a big role towards vaccination leading to low vaccine acceptability in the area. The study further discovered a wide knowledge gap about HPV infection and HPV vaccine uptake (42%) and this has to be addressed.

Conclusion: In conclusion, the study confirmed that knowledge about human papilloma virus vaccination (HPV) was low and attitude and perception of human papilloma virus vaccination (HPV) was poor among parents of young girls (aged 8 – 12).

Recommendations: Engaging all key stakeholders through improved and increased education will elevate public trust.

There is need to engage health care providers who include Doctors, nurses and public Health specialists in community sensitization on the benefits of the vaccination

Tailored community-based interventions and sensitization programs are a viable means to achieve this for multiple reasons.

CHAPTER ONE: INTRODUCTION

1.0 Introduction

1.1 Background of the Study

Human Papilloma Virus (HPV) is a virus that is spread through skin-to-skin contact that occurs during sexual intercourse (O'Connor et al., 2014). However, in some cases, non-penetrative sexual contact can also lead to HPV infections. There are over 30 strains of HPV that exist and infect the genital area. There are over 39 strains of HPV that exist and infect the genital area.

Human papilloma virus (HPV) is commonly associated with sexually transmitted diseases (STD) and is regarded as one of the major causes of global disease burdens. There are 13 types of oncogenic HPV; types 16 and 18 are the most important causes of cervical cancer and the non-oncogenic types of HPV 6 and 11 are identified as the major causes for 90% of genital warts (Boakye et al., 2016).

Globally, human papilloma virus (HPV) is recognized as a sexually transmitted infection and is conclusively linked to cervical cancer (CC) and genital warts (Blasi & Henrikson, 2015). Multiparity, early sexual debut and infection with other sexually transmitted infections (STIs) are known to be risk factors for HPV and CC. HPV infection is so common that it is suggested that 20 % of sexually active adolescent girls are infected by the age of 18.

Cervical cancer ranks second in the most common female cancers globally, and is the main cause of female cancer mortality worldwide, especially in Sub-Saharan Africa (Fu et al., 2017).

Worldwide, 15% of all cancer cases and nearly 26% of cancer cases in developing countries are attributable to infectious agents, particularly viruses (Van Wormer et al., 2017). Cervical cancer, which is caused by the human papilloma virus (HPV), is the leading cause of cancer mortality among women in sub-Saharan Africa (SSA). The approval and recommendation of two vaccines i.e Gardasil and Cervarix provide a huge opportunity to curb the burden of cervical cancer. As one of the key strategies in preventing cervical cancer in developed countries, providing HPV vaccines in low and middle income countries has been a critical pillar for meeting the global action plan for

closing the cancer divide (Radisic et al., 2017). However, outstanding barriers to achieving this goal in low-income countries remain. These include high cost of vaccine and vaccine delivery, low cervical cancer screening levels, poor health system capabilities, inaccessibility to medical care, low awareness and knowledge of HPV and cervical cancer, and failure of cervical cancer to be recognized as a major health concern (Petrosky et al., 2015).

In Africa, studies have indicated that parents have a limited knowledge pertaining to HPV and CC (Walker et al., 2017). It is argued that limited knowledge, awareness and negative perceptions have invariably affected HPV vaccine acceptability causing low vaccine uptake and refusal. Due to various factors, parents across Africa have poorer uptake of childhood immunizations, falling behind their Asian and white counterparts. In sub-Saharan Africa for instance, CC is perceived as a disease of disparities. Factors such as race, ethnicity, culture, attitudes, beliefs and religion play an important role in the understanding of HPV, CC awareness, HPV vaccine and vaccine acceptability. Religious beliefs dictate no sex outside of marriage, and these beliefs can impact on risk perception, and ultimately vaccine acceptability. Religious values make it difficult for parents to find acceptable any interventions that seem to be linked to sexual behavior. A study by Gordon et al., found that religious beliefs played a pivotal role in the decision-making process in matters pertaining to sexual behavior (Galagan et al., 2013). Another study by Ayissi et al., (2012) on awareness, acceptability and uptake of human papilloma virus vaccine among Cameroonian school-attending female adolescents, found out that culture and values played a pivotal role in the decision-making process on matters of sexual education.

Uganda was among the first east African countries to take advantage of the low vaccine pricing through a partnership with different pharmaceutical manufacturers, achieving a high coverage of HPV vaccination of all adolescent girls in 2011 (Galagan et al., 2013). Through different sources

of subsidized HPV vaccines, 88.9% of girls were fully vaccinated in Uganda using a school-based pilot program supported by PATH International in 2014 (Katahoire et al., 2013). In an effort to continuously reduce the national cervical cancer burden, government established the national HPV vaccination program. Government has continuously given out HPV vaccine free of charge to female adolescents, with the target age group of 8-12 years old (Mwaka, Wabinga, Mayanja-Kizza, 2013). Despite the free HPV immunization, acceptance of the vaccination program is not guaranteed as some of the parents are still against it due to various reasons. Knowledge and attitude have been shown as important determinants for future vaccine acceptance. It has been shown that knowledge of the consequences of HPV infection is lacking and many have misconceptions about vaccination. Extensive studies have been done to assess knowledge and attitude towards HPV vaccine across the world. However, there are limited investigations of HPV vaccine knowledge, attitude and perception among parents of adolescents (Paul et al., 2013). Therefore, this research will be conducted to assess the current knowledge, attitude and perception among parents of adolescents about HPV vaccination practice.

1.2 Statement of the problem

In an effort to reduce cervical cancer (CC) burden, governments across SSA have emphasized Human Papilloma Virus (HPV) vaccine as an important prevention strategy (Banura et al., 2012). Providing free HPV vaccines in these countries has been a critical pillar for meeting the global action plan for preventing cervical cancer. HPV vaccination has been a primary prevention tool against the two most prevalent oncogenic strains of HPV (16 and 18) which are responsible for about 70% of cervical cancer (Galagan et al., 2013). In addition, screening later in life is recommended as HPV types other than 16 and 18 are responsible for up to 30% of all cases. The vaccine appears to have partial efficacy against infections caused by HPV types 31 and 45 which are genetically related to type 16 and 18. Vaccinating girls and women before their sexual debut has had a potential to reduce the burden by 70%. Studies have further shown that if fully implemented, vaccination leads to 66% reduction in pre-cancerous lesions which translate to about 76% decline in cervical cancer deaths. In an effort to continuously reduce the national cervical cancer burden, government of Uganda established a national HPV vaccination program. Since then government has continuously given out HPV vaccine to adolescents at a free cost to female adolescents, with the target age group of 9-13 years old (Galagan et al., 2013).

Despite its effectiveness in preventing human papilloma virus (HPV) infection and free HPV immunization, acceptance of the vaccination (Paul et al., 2013).

Knowledge and attitude have been shown as important determinants for future vaccine acceptance. It has been shown that knowledge of the consequences of HPV infection is lacking and many have misconceptions about vaccination (Mwaka et al., 2013). Understanding the

parental level of knowledge, attitude and perception towards HPV vaccination is paramount in designing strategies to barriers of vaccine acceptance hence promoting acceptance among girls aged 8 - 12. This study assessed the knowledge, attitude and perception of human papilloma virus vaccination among parents of young adolescents and suggested measures for promoting vaccine acceptance with an aim of eliminating CC burden in Mbarara City. This was because Mbarara city has registered a very low vaccine acceptance at 36% despite the available strategies like mass sensitization, health trainings.

1.2 Objectives of the study

1.2.1 General Objective

To assess knowledge, attitude and perception of HPV vaccination among parents of young girls so as to inform the level of uptake of HPV towards cervical cancer prevention and control.

Specific objectives

1. To assess the level of knowledge on HPV vaccination among parents of young girls aged 8-12 years
2. To examine attitude and perceptions towards HPV vaccination among parents of young girls aged 8-12 in Mbarara City
3. To determine the level of uptake of HPV vaccination among young girls aged 8-12 in Mbarara City

1.3 Research Questions

1. What is the level of knowledge of HPV vaccination among parents of young girls aged 8 - 12?
2. What are the attitudes and perceptions towards HPV vaccination among parents of girls aged 8-12 years
3. What is the level of uptake of HPV vaccination among young girls aged 8-12 years in Mbarara City?

1.5 Justification of study

Cervical cancer is the leading cause of cancer deaths in women in Uganda (Paul et al., 2013). There is minimal access to cervical cancer screening services and diagnosis is usually made too late for meaningful intervention. HPV vaccines offer women a means of preventing cervical cancer but these vaccines have remained inaccessible to most women in Uganda (Paul et al., 2013). In 2014, government of Uganda through MOH set out to vaccinate all girls in specific parts of the country to use lessons learnt from the project as a demonstration on how to scale up HPV vaccination to the rest of the country. This initiative was the largest project of its kind in the country. It provided the best opportunity yet, to demonstrate how to effectively roll out a nationwide HPV vaccination program in Uganda. It was an opportunity to identify potential facilitators, barriers and challenges to school-based HPV vaccination and thus enable programmers to design optimal approaches for the rest of the country.

School-based vaccination has proven to be an effective vaccine delivery strategy. In such strategies, parents play a key role in disseminating information and communicating to young girls about the vaccine (Katahoire et al., 2013). The parents' knowledge, attitude and perception towards vaccination are likely to affect vaccine uptake and overall success of the program. Assessing

parents' knowledge, attitude, perception and acceptance of HPV vaccine to identify any gaps that exist is useful to programmers in designing vaccination campaigns. Parents are also well placed to identify facilitators and barriers of vaccine uptake and opportunities that can be used to mount other health promotion interventions during the vaccination campaign (World Health Organization, 2017). The study aimed at assessing the knowledge, attitude and perception of HPV vaccination among parents of young girls aged 8-12 years.

1.6 Scope of the Study

1.6.1 Geographical scope

The study was carried out in Mbarara city western Uganda. Mbarara is a city in the Western Region of Uganda. It is the main municipal, administrative, and commercial Centre of Mbarara District and the site of the district headquarters. As of 2018 Mbarara City was the second-largest city in Uganda after Kampala and also second to Kampala in importance, industry, and infrastructure. The city is about 270 Kilometres (168 mi), by road, southwest of Kampala, Uganda's capital and oldest city. The coordinates of the Mbarara City are 00 36 48S, 30 39 30E (Latitude:-0.6132; Longitude: 30.6582). The city lies at an average elevation at about 1,147 metres (3,763 ft) above sea level. In August 2019, the population of the City was estimated at 235,800.

1.6.2 Content scope

The study was limited to the knowledge, attitude and perceptions among parents of young girls as the independent variable and HPV vaccination as the dependent variable. It specifically; found out the level of Knowledge on HPV vaccination among parents of young girls, explored the attitude and perception towards HPV vaccination and assessed the level of uptake of HPV vaccination among young girls.

1.6.3 Time scope

This study was conducted for a period of 34 months; October 2020 to Aug, 2023. It reviewed literature of a period of 10 years (2010 – 18) to come up with up to date findings on the knowledge, attitude and perception of HPV vaccination among parents of young girls.

1.7 Significance of the Study

The findings will contribute to the body of knowledge available in relation to the knowledge, attitude and perception of HPV vaccination among parents of young girls in the area.

The findings of the study will provide information that can enable the policy makers and public health stakeholders to design appropriate interventions for changing the mindset of parents/caretakers towards HPV vaccination programs.

Information generated from the findings may be further used to provide decision-making and actions that would lead to increased uptake of cervical cancer (CC) screening and vaccination programs.

The findings of this study will be a source of information to non- Governmental Organizations, government and international bodies who are involved in fighting against HPV and cervical cancer. The study will be useful to the policy makers, the Uganda Ministry of Health specifically in charge of women welfare. The information will be vital for designing interventions that will contribute to the reduction of mortality related to cervical cancer.

The findings were compiled into a dissertation report in fulfillment for the requirement for the award of Masters of public health of Bishop Stuart University.

The findings will provide up to date literature for academicians since the findings may be used as a basis for further research. The gaps identified will be explored for further research especially in regard to coverage.

1.8 Theoretical review

The study was anchored on Theory of Reasoned Action in an effort to understand intentions to receive HPV vaccine among vaccine target young girls.

The Theory of Reasoned Action asserts that, “attitudes towards HPV vaccination and perceptions of social support for HPV vaccination are the determinants of intentions to be vaccinated.” (Akther & Nur, 2022) The theory of reasoned action (TRA) explains individual behavior by emphasizing the importance of beliefs in predicting behavior. According to TRA, an individual’s attitude toward the outcome of the behavior and subjective norms (the opinions of the person’s social environment) predict individual behavior intention. Positive vaccination attitudes will increase the rate of HPV vaccine acceptance. Those who intend to receive the HPV see high perceived benefits in doing so for the purpose of protecting themselves and others in their circle, implying vaccination compliance. Raising public and individual awareness is the most important factor in the fight against diseases, crime, and social injustice. People are either unaware of or fearful of the current vaccination program.

However I adopted another theory since the first theory couldn’t inform all the objectives of the study.

Theory of Planned Behavior which also informs knowledge and attitude of parents toward HPV vaccine.

Theory of planned behavior holds that “attitudes toward vaccination, perceptions of social support for vaccination, and perceived ability to get vaccinated are the determinants of intentions to be vaccinated.

Theory of planned behavior is a popular framework and potentially more robust than other theories when explaining understanding, knowledge, and intention to get the vaccine.

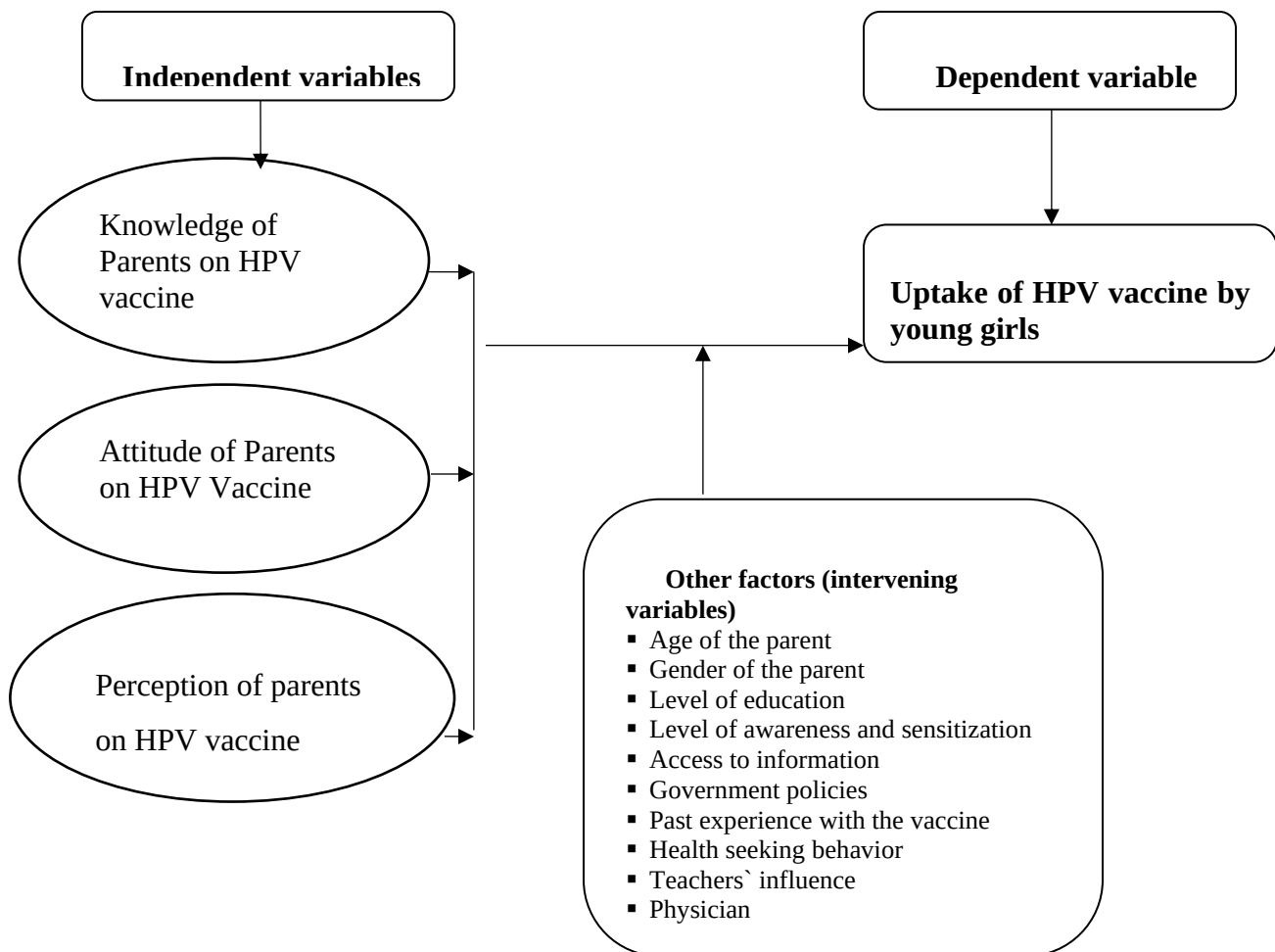
The attitude parents have towards the vaccination determines whether to accept the vaccine or to decline the vaccine. The perception of the social support for vaccination also matters when it comes to HPV acceptance, the social support given to parents can be perceived negatively or positively.

The perceived ability to get vaccinated, some parents claim that they are not able to get the vaccine hence refuse their girls to get vaccinated.

1.9 Conceptual Framework

The study looked at HPV vaccination uptake among young adolescents as the dependent variable and knowledge, attitude and perception as the dependent variables. The dependent variable (DV) measures the outcome of the independent variables (IVs). The observed variations in the DV resulted from the effect the IVs had on the dependent. However the two sets of variables worked through intervening variables as below.

Figure 1.1: Conceptual frame describing the knowledge, attitude and perception of HPV vaccination among parents of young adolescents



According to figure 1.1above, the knowledge attitude and perception a person carries, affect the actions, decision and behavior of that person. With a greater understanding of these components, the information and intervention can be better suited to the specific population based on what they need. As shown in Figure 1, KAP is used, in this study, as a way to explain how the knowledge of HPV, attitudes and perception towards the HPV-vaccine might affect the behavior and decision to accept HPV-vaccine. The knowledge attitude and perception a person carries is determined by factors like age, gender, level of education, level of awareness and sensitization, access to information, past experience with the vaccine and health seeking behavior.

The knowledge, attitude and perception affects the uptake of the vaccine, parents who have knowledge about the vaccine are likely to allow their girls to be vaccinated whereas parents with limited or no knowledge about HPV are likely not to allow the children to be vaccinated. Attitude has an effect on the uptake where by the parents with poor attitude towards Human Papilloma virus Vaccine will not allow their children to be vaccinated whereas parents with good attitude towards the vaccine will allow their children to be vaccinated. Perception also has an effect on the uptake of HPV; parents who perceive the vaccine to be dangerous are likely not to allow their children to be vaccinated whereas parents who perceive the vaccine to be effective in prevention of cervical cancer are likely to allow their children to be vaccinated. Intervening variables like age of the parent, education level of the parent have an effect on the uptake of the vaccine.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This chapter explores literature on the knowledge, attitude and perception of HPV vaccination among parents of young adolescents. It specifically examined the key concepts and reviews secondary information on the level of awareness on HPV vaccination among parents of young adolescents, attitude and perception towards HPV vaccination, level of uptake of HPV vaccination amongst young adolescents and other barriers and facilitators to HPV vaccination.

2.1 Level of Knowledge on HPV vaccination among parents of young girls

According to Colón-López et al., (2012) there are a variety of researches examining the level of knowledge about cervical cancer HPV vaccination among various communities. Together with the development of modern communication, the spread out of information has become wide, In the early 21st century, more than half of women had not heard of HPV as well as an association between HPV infection and cervical cancer. In recent time, an overwhelming percentage of people, however, had an awareness of cervical cancer as cited in various researches.

Marchand and Bastani, (2013) argued that the variability of knowledge levels then has been reported depending on each single study location and population. While health professionals tend to attain high CC/HPV vaccines knowledge levels, adolescents, students, female parents and low-income citizens have limited understanding about these issues.

The same situation was witnessed when HPV vaccine was initially approved in 2006, Most people were not aware of this vaccine even in industrialized nations (Blasi and Henrikson, 2015). After that, however, awareness about the presence of the vaccine increased dramatically together with the propelling of introduction of HPV vaccination worldwide.

Nevertheless, the average level of knowledge of HPV vaccine is still extremely low in most developing nations. Remarkably, the poor knowledge levels of cervical cancer and HPV vaccination was underscored among women who mainly play as gatekeepers of the family's health

and a key source of health information (Itty et al., 2014). As others had cited, mothers are an important source of psychosocial and instrumental support in adolescents' vaccine uptake, and they serve as the primary decision-makers on the HPV vaccine receipts for themselves and their children as well (Miller-Ott & Durham, 2011). In addition, the limited knowledge about cervical cancer and its prevention was observed even among the high-risk group for HPV infection like female sex workers. Therefore, their knowledge, attitude, willingness and ability to pay for vaccination meaningfully impact the vaccine uptake for their whole family members (Petrosky et al., 2015).

Various factors also found to be associated with poor knowledge levels. Several researches have shown significantly differences between age, ethnic and education level and the level of cervical cancer knowledge. (Btoush et al., 2011), (Wong, 2011), (Lindau et al., n.d.) In contrast, other findings were of an opinion that young women tend to have poor knowledge level of CC, HPV vaccines and low perceived susceptibility as well. Furthermore, HPV vaccines knowledge difference was also found in the disparities of education and health insurance in previous researches (Fernández et al., 2014).

Lack of HPV knowledge, its health hazards and awareness of HPV vaccine among parents of adolescents is one of the reasons for low HPV vaccination rates in United States. (Oldach et al., n.d.) The literature suggests, most frequently reported reasons by parents for not vaccinating their children with HPV vaccine are lack of knowledge about the HPV vaccine, potential concerns for vaccine side effects, fear of vaccination increasing sexual promiscuity and also the belief that their adolescent children were not sexually active and were too young to receive HPV vaccine (Smith-Lindsey, 2016). Studies show, specifically parents of low socioeconomic and racial /ethnic minority parents have significantly lower odds of knowing about the vaccine (Radisic et al., 2017).

In research conducted post-licensing of the HPV vaccine, overall HPV knowledge has still remained low (VanWormer et al., 2017). Gerend and Shepherd, (2011) found that HPV knowledge has increased since the vaccine has been on the market, though most of the female participants still did not believe they were at risk for HPV. Results were similar to those for a study on men only, which was done before the vaccine was available to them (Fu et al., 2017).

Various studies have demonstrated that knowledge and awareness about HPV is associated with vaccine acceptability (Holman et al., 2014). In a study by Jones & Cook, intent to receive the vaccine was significantly greater among those answering two or three HPV knowledge questions correctly compared to those getting none or only one question correct.(Liu et al., 2018) Their conclusions regarding this study observed that knowledge about HPV varies by gender and certainly affects interest in the vaccine. Although knowledge is not a direct predictor of health behavior in regards to the HBM, Shipman et al., (2011) consider it to be an underlying factor.

Other researchers have reached this conclusion (Galagan et al., 2013). Therefore, measuring knowledge about HPV is an important step towards increasing uptake in the HPV vaccine.

While the above studies have surveyed knowledge regarding HPV, fewer studies have assessed knowledge about the vaccine itself. In a pilot study performed by Schmotzer and Reding, (2013), women on the U.S.-Mexico border were asked if they were aware of the vaccine in addition to its benefits and disadvantages. While 86% of the women had not heard of the vaccine, 63% could name some benefits of being vaccinated against HPV. Only 8% said the vaccine would truly protect them against the virus.

2.2 Attitude and perception of parents towards HPV vaccination

Despite the high prevalence of HPV and risky sexual behavior among primary pupils, limited research has specifically examined vaccine acceptance in this high-risk group since the licensure of the vaccine (Remes et al., 2012). The following studies found on vaccine acceptability were rendered either before the HPV vaccine was released prior to 2006 or after the vaccine was made available for women only. These studies utilize a hypothetical vaccine scenario in their assessments, which certainly suggest the need for updated research regarding the current HPV vaccine.

A few studies have evaluated acceptability of a vaccine depending on how the purpose of the vaccine is marketed. Acceptability of a hypothetical HPV vaccine that protects against both cervical cancer and genital warts was high in studies conducted among college students ranging from 74%–78% (Walker et al., 2017). Males tended to prefer a vaccine that protected against more

types of HPV and that provided direct protection for males. For instance, only 34% of college males would accept a vaccine that protected against cervical cancer alone, whereas 78% would accept a vaccine that protected against both cervical cancer and genital warts (Jones & Cook, 2008). In contrast, when presented with benefits of partner protection in addition to self-protection, acceptability did not increase “over and above” in a study done by Ziemer and Hoffman (2012). One study evaluated both male and female participants before the HPV vaccine was on the market. The results concluded that there was no difference in acceptability between the sexes. Yeganeh and Kuo, (2010) suggest in their review of the literature that future studies should evaluate acceptability in the context of a licensed vaccine and not hypothetical situations.

In 2008, Ferris, Waller & Miller performed a study to assess reasons for men wanting or not wanting the vaccine. The most frequently cited reasons for vaccination included the desire to stay healthy, prevention of cancer in sexual partner, prevention of anal, penile, and head and neck cancer, fear of cancer, and prevention of genital warts. The most common reasons for not wanting to receive the vaccine included being in a monogamous relationship and not at risk, not generally interested, and insufficient evidence to prove benefit of the vaccine to men.(Ferris et al., n.d.) Another study that measured college males’ perceptions of HPV and cervical cancer demonstrated that men did not acknowledge HPV to be serious for themselves. Yet the men did indicate that they felt HPV infection was severe for their partners (Sandfort, 2009).

Studies have suggested that sexual orientation of men has an effect on vaccine acceptability. In a national study done by Brawner et al., (2013), more gay and bisexual men were willing to receive the HPV vaccine (73%) compared to 37% among heterosexual men in the study. They also had higher awareness and anticipated regret if they had decided against the vaccine. Smith et al., (2014) studied only gay and bisexual men due to their higher rates of HPV infection and anal cancer. The study found that interest in the HPV vaccine was significantly high. Another study recruited only heterosexual college males in their research (Trad and Caraveo, 2013). The reasoning behind this criterion was that the researchers predicted that acceptability of the HPV vaccine would be higher among males with female partners. Contrary to the researchers’ predictions, presenting men with the benefits of the HPV vaccine for their female partners did not increase vaccine acceptability

significantly compared to presenting them with the benefits to men alone; nor did effects of this manipulation depend on whether men were currently in a committed relationship.

In the conclusion of Boakye et al., (2016) study, the point was presented that current HPV vaccination campaigns typically highlight the benefits of the HPV vaccine for women, as Gardasil is known as the “cervical cancer vaccine” and publicity materials always illustrate young women or girls. Currently, the effect this message has on men’s interest in the HPV vaccine is uncertain. The researchers suggest that future research is needed to examine if men consider HPV infection to be a primarily female health problem. Essentially, this point also justifies the need to discover males’ attitudes toward the vaccine that is now licensed for them.

During the years after the first vaccine got approved internationally in 2006 (WHO, 2017), there have been several studies exploring women’s attitude towards the vaccine. Many studies (Markowitz et al., 2013) show that higher education is significant to a positive attitude towards the vaccine and to a higher level of knowledge of HPV. Studies also show that knowledge of HPV is significant with acceptance of vaccine, meaning that knowledge gives a more positive attitude towards taking the vaccine.

In a study conducted among university students in Malaysia (Maher and Unwin, 2012) only 10.3% had heard of HPV vaccine, half of them got information from the newspaper and only 1.5% from health professionals. About 60% of those who had heard of the vaccine, knew that it is a protection against cervical cancer. Only 48% of participants in this study had intentions to receive the vaccine. The other half were mostly concerned about safety and efficacy (50.9%), some did not think they had any risk of receiving HPV (41.5%) and some felt embarrassed to receive an STI vaccine (11.3%).

2.3 Uptake of HPV vaccination among young girls

Globally, the findings of both qualitative and quantitative research strongly suggest that most women have positive attitudes about receipt of a HPV vaccine (Chauke-Moagi and Mumba, 2012). The highest rate of acceptability (96%) was found among urban Turkish women aged 17 to 35 years, recruited from an obstetrics and gynecology clinic (Lee and Cho, 2017). The lowest rate

was found among urban women in Belgium, where only half of the respondents (also sampled from obstetrics/gynecology clinics) indicated intention to be vaccinated.

HPV vaccines have proven to be cost-effective when offered to women before infection with HPV, especially in countries where screening strategies are sub-optimal (Wamai et al., 2012). In 2008, a population survey in 15-49 year old Kenyan women showed that 48% of them had their sexual debut before their 18th birthday and 11% before they were 15 years old (Ayissi et al., 2012). This underpins the need to vaccinate girls at puberty (8-12yrs) before they are exposed to HPV at coitarche. Many HPV vaccination campaigns in sub-Saharan Africa and elsewhere in the world target school girls in a particular grade or age group, usually between 9 and 13 years (Chan et al., 2012).

Adolescent vaccination is a relatively new practice in LICs and has presented formidable challenges. Reaching young girls is a challenge, especially where school enrolment or attendance is low (Coleman et al., 2011). This is further complicated by the fact that three doses of the vaccine are required for complete immunization. HPV vaccine delivery challenges can be summarized as sociocultural and political barriers, inadequate health systems and logistical challenges. Sociocultural barriers are largely due to lack of knowledge on HPV and the vaccine, concerns about HPV vaccine safety and stigma. Political challenges are due to lack of political will, involving and coordinating diverse stakeholders and competing health priorities. Religion has also been shown to influence vaccine uptake in some settings. Health system challenges include poor infrastructure, inadequate human resources, financing mechanisms, cost of vaccine delivery, reaching girls who are out of school as well as transport and cold-chain logistics (Sheaves, 2016).

For example, Kenya is faced with several of these challenges in vaccine delivery. Nevertheless, as of the year 2012, she had achieved and sustained immunization coverage of above 80% for childhood vaccines: BCG, three doses each for DPT, Hepatitis B vaccine, Haemophilus influenza serotype b vaccine, Pneumococcal Conjugate Vaccine, Measles Vaccine and Oral Polio Vaccine (WHO, 2017). However, there has been no routine country-wide vaccination of adolescents so the strategies that have worked before may not guarantee similar results in this special group. In addition, health care facilities are stretched, health care workers are much fewer than required

(Sheaves, 2016) and the introduction of the HPV vaccination is likely to cause further strain on the health system.

Although the introduction of free primary education in 2003 has increased school enrolment, from 62% in 2002 to 86% in 2006, there still is a significant population of girls not in school especially in nomadic communities where as many as 4 out of 5 girls may not be enrolled in school (WHO, 2012). In the political scene, there's no over high-powered support for the vaccine or negative political push against it.

To achieve optimal results, project planners and implementers should tap into proven strategies such as educating and engaging the public to create awareness and a sense of ownership (Bynum et al., 2011). Involvement of stakeholders and partners such as the ministry of education; to pool resources and mitigate some of the logistical challenges such as school timetabling and dose timing (O'Connor et al., 2014). Community Health workers should be used to reach out to school girls for vaccination at nearby facilities or schools (Lee and Cho, 2017).

At the international level, efforts to obtain a vaccine that can be administered in a single dose and with minimal cold-chain requirements should continue. Strategies to reduce vaccine delivery costs are also required (WHO, 2012).

2.3.1 Vaccine uptake and acceptability among individuals

Attitudes regarding HPV vaccine acceptance can be assessed based on acceptability of previous vaccines and surveying patients, parents and health care providers. Kahn and colleagues surveyed 52 young women who were attending medical clinics in the US regarding HPV vaccination, and they found that most viewed vaccination positively (Boakye et al., 2016). Most of the respondents (98%) reported intention to receive the vaccine for themselves and their hypothetical daughters. The same study found that knowledge of HPV and the vaccine, personal beliefs about vaccination, beliefs that others would approve of vaccination, higher number of sexual partners, and perceived support of provider, partner and parents, were all significantly associated with the intention to receive the vaccine.

In another study of 256 college students, 74% endorsed HPV vaccination (Smith et al., 2014). Of those surveyed, acceptance was significantly correlated with higher number of sexual partners, parental support, endorsement of universal HPV vaccination, low cost, and vaccine safety. Similar findings were reported by a study which examined the attitudes about hypothetical HPV vaccines in adolescent ($n = 20$) and adult women ($n = 20$) attending two urban STI clinics in Indianapolis, United States (Bynum et al., 2011). The study found that the idea of an HPV vaccine was favorably received. Several factors affected potential acceptance, including vaccine efficacy, physician endorsement as well as cost.

2.3.2 Vaccine acceptability among parents

Vaccine acceptance among parents is not universal. Concern over potential side-effects from vaccines is a common barrier to vaccination (Bynum et al., 2011). Parents may also object to vaccination for religious or philosophical reasons (Sheaves, 2016). The sexual nature of HPV infections may introduce unique barriers to parental consent not previously encountered with other vaccines. For instance, parents may feel that consenting to a vaccine for an STI may inadvertently encourage their adolescent children to engage in sexual intercourse (Smith et al., 2014). Concomitantly, some parents might think that vaccination at an early age will encourage earlier sexual debuts.

Contrary to the above mentioned findings, other studies suggested that the sexually transmitted nature of HPV may not pose a major obstacle to HPV vaccine acceptance. In one study conducted by Mays and workmates, 70% of parents approved of vaccination for STIs (Wamai et al., 2012). The same study found that desire to protect their children, concern about specific disease characteristics, and personal experience with an STI were directly correlated with vaccine acceptance. It also reported that rejection of the vaccine was associated with the perception that their child was at low risk for infection or with the parent having a low concern about severity of the disease. It is worth noting that both of these reasons for refusal of the vaccine are codified in the concepts or constructs of the Game theory and Health Belief Model (HBM).

In a similar study, Zimet and colleagues questioned 278 parents about their attitudes towards adolescent vaccination, incorporating nine hypothetical STI scenarios defined along four different

dimensions: mode of transmission (STI vs non-STI), severity (curable/chronic/fatal), vaccine efficacy (50%, 70%, 90%), and behavioral method for prevention (available/not available) (Ayissi et al., 2012). Interestingly, the study reported that whether a disease was sexually transmitted or not, did not affect the parents' decision. Instead, severity of the hypothetical disease and vaccine efficacy predicted vaccine acceptance, which is in agreement with the HBM constructs of perceived severity and perceived benefits respectively (Ayissi et al., 2012).

When parents who were undecided about HPV vaccination were provided with a basic information sheet about HPV and HPV vaccines, they became significantly more likely to support HPV vaccination (Chan et al., 2012). This may imply that failure to take up the HPV vaccine due to lack of knowledge may be overcome by giving potential recipients adequate information about the vaccine before asking them to be vaccinated. Physician endorsement and school requirements have also been identified as important catalysts for parental vaccine acceptance (Ayissi et al., 2012).

2.4 Findings from literature review

There is low knowledge on Human Papilloma virus (Gerend and Shepherd 2011)

It was found out that knowledge about HPV is associated with vaccine acceptability (Holman et al. 2014)

There are few studies that have been done on cervical cancer and Human Papilloma Vaccine

The few studies that have been done on college students not on primary pupils who are the target group for HPV vaccine since they are perceived to be non exposed to the virus

The literature shows that there are other barriers affecting vaccine uptake which includes religion, Health system challenges and political challenges

It was noted that since HPV is a school based programme, most girls who are not school going may not get access to the vaccine

It was found from literature that cultural beliefs play a big role in vaccine acceptability

Most parents perceive the vaccine to be hazardous to the children and that affected the uptake

2.5 Knowledge gap

A big number of parents had heard about cervical cancer though they didn't know the causative agent and the transmission

Very few parents had heard about Human Papilloma Vaccine

Many studies have been done on college students who are not the target population for HPV vaccine

Knowledge of young girls on HPV who are the recipients of the vaccine is still lacking

Still very few parents understood the importance of the vaccine

Since the HPV is a school based programme, most of the girls who are not school going didn't get information about the vaccine

2.6 How this review influenced the study

The literature review opened the mind of the researcher to get more insights on the vaccination and this influenced the design of the study where the researcher was able to know what other researchers have found out about HPV and the knowledge gap. Comparing the different designs used by different researchers, I was able to come up with a research design that was able to bring out clearly what other researchers didn't not explore. This helped the researcher to mostly concentrate on what has not been explored by other researcher.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter consists of the research design, area of study, study population, sample size, sampling technique, data collection methods and instruments, research procedure, data processing and analysis and ethical considerations.

3.2 Study design

The study was cross sectional in nature employing both qualitative and quantitative methods to capture data from respondents. The design was chosen because it helped the researcher to generate basic knowledge, clarify relevant issues and to break grounds about the knowledge, attitude and perception of HPV vaccination among parents of young girls. The qualitative methods were used to capture respondent's views, feelings, knowledge and opinions on the knowledge, attitude and perception of human papilloma vaccination (HPV) among parents of young girls (aged 8 – 12).

Qualitative Research is also used to uncover trends in thought and opinions, and dive deeper into the problem. Some common methods of qualitative research includes focus groups (group discussions), individual interviews, and participation/observations.

3.3 Study Area

The study was carried out in Mbarara City, western Uganda. Mbarara City is a city in the Western Region of Uganda and the second largest city in Uganda after Kampala. The city is divided into 6 divisions which include Kakoba Division, Kamukuzi Division, Nyamitanga Division, Biharwe Division, Kakiika Division, Nyakayojo Division. It is the main commercial Centre of most of south western districts of Uganda and the site of the district headquarters. In May 2019, the Uganda's cabinet granted Mbarara a city status, which started on 1 July 2020. The city is about 270 kilometres (168 mi), by road, southwest of Kampala, Uganda's capital and oldest city. The interest in City was developed after realizing increasing cases of cervical cancer and yet HPV vaccination has been promoted in the area. In selecting respondents, parents of young girls aged 8 – 12 and the parents/caretakers were considered the focal people.

There were 1152 parents of which 650 were women and 502 men. These were parents of 700 girls who were in the age bracket of 8-12 years, some had two parents and some had single parents.

Table 1. Selected Divisions and Parishes

Divisions	Selected Parishes/Wards
Kakoba	Kakoba and Nyamityobora
Kakiika	Rwemigina ,Bunusya,Kakiika,Kakoma, Nyarubanga and Kyahi
Nyakayojo	Bugashe,Katojo,Kicwamba,Nyarubungo and Rukindo and Rwakishakizi
Biharwe	Rushozi,Bigaaga,Kitooma,Kibuga and Nyabuhaama

3.4 Study population

The study population included parents of young girls aged 8 – 12; parents were selected since they are able to provide information regarding girls 8-12 years and they influence the uptake of Human Papilloma Virus Vaccination acceptance by girls aged 8-12 years. The total populations of parents who had girls aged 8-12 years from the 4 selected divisions were 1152. 650 were women and 502 men. These were parents of 700 girls who were in the age bracket of 8-12 years, some had two parents and some had single parents. Using simple random sample **288** parents of young girls aged 8-12 years were selected. These were parents of 200 young girls. The justification for 200 young girls of the 288 parents is that there is when two parents (father and mother) of one young girl were selected to participate in the study. Though there were parents who had more than one young girls aged 8-12 years (Single parent selected 164 young girls, both parents selected 62 young girls). Both parents (mother and father) of 62 young girls that were selected were 124. (164+124 = 288)

I selected 12 key informants who included Nurses that were involved in Vaccination, VHTs and Division leaders. These were considered to provide supplementary information that was not

provided by the parents. With this category of respondents, the researcher got the most reliable and up-to-date data.

3.5 Inclusion and exclusion criteria

Participants eligible to participate in the study were parents/caretakers who had young girls aged 8 – 12 years. Parents with girls less than 8 years and more than 12 years were excluded from participating in the study. Non VHTs, non Health workers and non division leaders were excluded from participating in the study. Only those who that provided consent were eligible to participate.

3.6 Sample determination and size

The study sample was determined using a proportional sampling formula at 95% level of confidence, with 5% as the tolerable error. In this case the study considered 25% of total population. Therefore the sample was determined as follows;

$$n = p \times q \times \frac{(Z_{\alpha/2})^2}{e}$$

$$n = \frac{Z_{\alpha/2}^2 \times (p) \times (1-p)}{e^2}$$

Where:

n = Sample size

p = Target population = 25% = 0.25

q = non- target population = 75% = 0.75

e = Standard error = 5% = 0.05

$Z_{\alpha/2}$ = Z value of 95% confidence level = 1.96 from the Z-table

Substituting the values into the formula: $n = \frac{0.25 \times 0.75 \times (1.96)^2}{0.0025} = \mathbf{288 \text{ respondents}}$

This together with 12 key informants totaled to 300 as a final sample size

Table 2: Population and sample size from the study area

Population Category	Sample size (n)	Sampling technique
Parents of young girls aged 8-12 years	288	Simple random sampling
Key Informants (Health workers,VHTs and Division leaders)	12	Purposive sampling
Total	300	

3.7 Sampling strategy

The study adopted multistage sampling techniques. The first stage involved a purposive selection of four (4) divisions from the six divisions in the City. Each division had an estimated number of eight (8) cells. The second stage involved a purposive selection of three (3) wards' from each of the four divisions to make a total of 12 target wards. In the third stage, the research further applied purposive selection to come up with four cells from each of the twelve (12) selected wards to make a total of forty eight (48) cells. It was from the 48 selected cells that researcher purposively selected six respondents (6 parents) from each cell. The fourth stage involved a purposive selection of key informants including VHTs, health workers and cell leaders. I selected participants from Kakoba division, Nyakayojo division, Kakiika Division and Biharwe division

Procedure

There are six divisions in Mbarara City, I purposively selected 4 divisions that include Kakoba, Nyakayojo, Kakiika and Biharwe. The justification for selecting these four divisions was that these had many parents who had girls aged 8-12 years, I selected 3 wards from each division that also have many parents of young girls of 8-12 years. These became 12 wards. I selected four cells from each of the 12 wards which totaled to 48 cells. Using simple random sampling, I selected 6 parents

from each cell. These parents totaled to 288. I also selected 12 key informants that were very versed with HPV Vaccination.

3.8 Data sources

They study sourced information from both primary and secondary sources. Secondary information was collected from different sources like; text books, internet, newspaper, magazines, and journals. This information was reviewed by visiting places like libraries and internet cafes and was used to supplement the collected data from different categories of the respondents.

3.9 Data collection methods

The study used interviewer administered questionnaires with (closed and open ended questions) to collect quantitative data, and interview guide to collect qualitative data.

3.9.1 Questionnaires

An interviewer administered questionnaire with both (both closed and open ended questions) was designed in English and later translated into the local language (Runyankole) since most of the respondents understood Runyanyole .This method allowed a selected number of respondents to answer questions related to the study phenomenon in the language they understand. The questions answered in the questionnaire were in line with the study objectives. **Appendix II page 55**

3.9.2 Interview guide

Interviews were conducted using an interview schedule that was administered to key informants. This involved oral or vocal questioning where the researcher became the interviewer and the respondents were interviewees. The interview schedule constituted open ended questions. Interviews were preferred because majority of the key informants were busy with their work schedules. Again some respondents were illiterate and hence not able to read and write as it would be required with the use of questionnaires. This method was suitable to capture data on such groups of people. **Appendix III page 59**

3.10 Quality Control Methods

3.10.1 Validity of Instruments

To ensure validity of the instruments, various copies of the instruments were given to Research Supervisors for further analysis to point out areas in which the instrument was deficient and on the basis of their expert opinion various changes were made to the instruments so as to increase their validity.

3.10.2 Reliability of Instruments

Reliability of the instruments were tested by use of test-re-test method. The questionnaires were administered to 2 respondents from each group selected. The same questionnaires were administered after a week to the same group. The answered questionnaires were scored manually again and a comparison of the results was made. Pearson's correlation coefficient was computed to establish the extent of reliability.

3.11 Data analysis

3.11.1 Qualitative data analysis

Qualitative data was analyzed by content analysis after transcribing and developing themes.

Content analysis is a research method used to determine the presence of certain words, themes, or concepts within some given qualitative data. I used content analysis to quantify and analyze the presence, meanings, and relationships of such certain words, themes, or concepts.

Respondents' views were quoted verbatim to give their actual feeling about the issues being raised. The above methods of data analysis ensured proper and efficient computation of collected data and produce standard work.

3.11.2 Quantitative data analysis

Information obtained from the structured questionnaires was corroborated during data analysis. Data was captured in Microsoft EXCEL version 16.0 and then exported to STATA Version 18.0 to generate descriptive and inferential statistics. Techniques for summarizing data for continuous

variables were used such as mean, variance and standard deviation while frequencies and percentages were generated for categorical variables. Inferential statistics was applied where necessary to generate and interpret any significant associations between variables at both bivariate and multivariate level. Data outputs were presented in tables, pie-charts and graphs.

Thematic analysis was also performed to capture the association amongst the attitudes and perceptions generated from key informants. This was used to analyze qualitative data.

3.11.3 Analysis per objective

Objective One

Objective one was to find out the level of knowledge on HPV vaccination among parents of young adolescents. Descriptive statistics with the aid of STATA computer software were analyzed to determine the level of awareness using frequency counts and percentages.

Objective two

Objective two was to explore perception towards HPV vaccination. Descriptive statistics (such as mean, variance and standard deviation) were performed using STATA version 18 and presented in a table. Thematic analysis was also performed to capture the association amongst the attitudes and perceptions generated from key informants.

Objective three

Objective three which was to determine the level of uptake of HPV vaccination among young adolescents in Mbarara City. This objective was achieved using the descriptive statistics. The outcome of the analysis was presented in form of frequency and percentages.

3.12 Ethical considerations

Ethical approval was obtained from the Research and Ethics Committee Bishop Stuart University. Permission was also sought from Mbarara City authorities before commencement of the study. Participation in the study was voluntary, and written informed consent was obtained from each

participant at the time of the study after explaining to them the objectives of the study and how findings would benefit them.

3.13 Plan for dissemination of study findings

During data collection, participants gave given information about Human Papilloma virus vaccination and report from the study shall be given to the key informants that will have participated in the study as a form of feedback to the community

The study findings will be presented to the directorate of graduate studies, research grants and publications Bishop Stuart University.

The findings will be published in a reputable journal

3.14 Limitations of the Study

Since the research topic was about sensitive issues surrounding Vaccination status of young girls some respondents concealed factual information concerning related issues, a factor that tended to compromise the quality of the findings.

3.15 Remedies to the limitations

I explained to parents the purpose of the study and how the study will do no harm to the girls

For the participants that were too busy, I rescheduled time that was convenient to them

CHAPTER FOUR: RESULTS

4.0 Introduction

This chapter presents the analysis and interpretation of the results obtained from the field. The study was particularly interested in the assessment of knowledge and perception of human papilloma virus vaccination (HPV) among parents of young adolescent's girls (aged 8 – 12) in Mbarara City. Questionnaires were administered to two hundred eighty eight (288) respondents. All the two hundred eighty eight respondents ably answered questionnaires giving a response rate of 100%.

4.1 Socio-economic characteristics of respondents

This sub-section presents the socio-demographic features of 288 respondents sampled. The key demographic characteristics captured for the study included; gender, age, education level, religion, marital status, and occupation. These features were found to be of great help in clearly depicting the diverse background of the respondents.

Table 1: Socio-economic characteristics of parents of young girls aged 8-12 years

Variable	Category	Frequency (n=288)	Percentage
Age bracket	15-35	115	39.9
	36-50	153	53.1
	50 and above	20	6.9
Sex	Males	122	42.4
	females	166	57.6
Education level	None	26	9
	Primary	60	20.8
	Secondary	140	48.6
	Tertiary	62	21.5
Source of income	Farming	87	30.2
	Employed	64	22.2
	Business	137	47.6
Marital status of the parents	Married	160	55.6
	Single	41	14.2
	Separated	34	11.8
	Widow	38	13.2
	Widower	15	5.2
Religious Affiliation	Anglicans	134	46.5
	Catholics	105	36.5
	Moslems	49	17

As shown in table 1 majority 53.1% of the respondents were aged 36-50 years, 39.9% were aged 15-35 years, while 6.9 were aged 50 and above. Majority 57.6% were female parents, 42.4% were male parents. In terms educational level, majority of the parents 48.6% had secondary education, 21.5% had tertiary education, 20.8% primary whereas 9% had never attended school. Majority (47.6%) parents depended on Business as a source of income, 30.2% depended on farming and 22.6% formal employment. Majority (55.6%) parents were still married, 14.2 were single, 11.8% were separated, and 13.2% were widows while 5.2% parents were widowers. In terms of Religion, majority 46.5% of the participants were Anglicans, 36.5% were Catholics and 17% were Muslims.

4.2 Level of knowledge on HPV vaccination among parents of young girls

This section of the study addresses research question one which sought to find out the level of knowledge on HPV vaccination among parents of young girls. The gathered information was analysed using both qualitative approach to generate frequencies and percentages as presented in tables 2 and 3 below;

Table 2: Knowledge HPV infection and vaccination among parents of young girls

Variable	Values	Frequency	Percentage
Have you heard about HPV infection	Yes	184	63.9
	No	104	36.11
Risk factors for HPV Infection	Unprotected sex with partners	82	44.6
	Multiple sexual partners	38	20.7
	Sexual intercourse at an early age	30	16.3
HPV Related Disease	Cervical cancer	70	38.0
	Penile cancer	43	23.4
	Genital warts	25	13.6
	Oropharyngeal cancer	22	11.9
	Anal cancer	24	13.4
Preventive measures for HPV infection	Condom use in sexual intercourse	78	42.4
	Vaccination	45	24.5
	Late start of complete sexual activity	28	15.2
	Late start of incomplete sexual activity	33	17.9

As shown in table 2 above, more than a half (63.9%) reported that they had heard about HPV infection compared to the 36.1% who had not heard. of those who had knowledge on HPV infections(184), 44.6% reported that the infection was caused by having unprotected sex with multiple partners, 20.7% multiple sexual partners whereas 16.3% talked of sexual intercourse at

an early age and high frequency of sex partner exchange respectively. 38.0% revealed that HPV Infection resulted in cervical cancer, 13.6% genital warts, 13.4% anal cancer while 23.4% and 11.9% revealed that infection results in penile cancer and oropharyngeal cancer respectively. 42.4% revealed that the infection could be prevented by use of condom during sexual intercourse, 24.5% vaccination, 17.9% late start of incomplete sexual activity and 15.2% late start of complete sexual activity.

Table 3: Knowledge on HPV vaccine and vaccination among parents of young girls

Variable	Values	Frequency	Percentage
Knowledge on HPV vaccine	Yes	119	41.3
	No	169	58.6
Vaccines known	4-valent HPV vaccine	26	21.8
	9-valent HPV vaccine	54	45.4
	2-valent HPV vaccine (cervarix)	39	32.8
Knowledge that HPV vaccine can prevent cervical cancer	Yes	55	46.2
	No	64	53.8
Source of information	Nurses	66	55.5
	Physicians	10	8.4
	VHTs	43	36.1

According to the results in table 3 above, only 41.3% of the respondents had knowledge on HPV vaccine compared 58.6% who didn't know the HPV vaccine. Of those who had knowledge on HPV vaccine, Majority (45.4%) knew about 9-valent HPV vaccine, 21.8% 4-valent HPV vaccine (cervarix) and 32.8% 2-valent HPV vaccine. 46.2% of the respondents had knowledge about HPV vaccine role in preventing cervical and others HPV related infections whereas 53.8% did not. Most respondents (55.5%) of the respondents got HPV vaccine related information from Nurses, 36.1% from VHTs and 8.4% got information from Physicians.

4.3 Attitude and perception towards HPV vaccination in Mbarara City

This section of the study addresses research question two which sought to assess the attitude and perception of parents of young girls towards HPV vaccination in Mbarara city. The gathered information was analyzed using both qualitative and quantitative approaches as below;

Table 4: Attitude and perception towards HPV vaccination

Variable	Values	Frequency(119)	Percentage
Attitudes regarding HPV vaccine	Effective in preventing cervical cancer	60	50.4
	Effective in preventing penile cancer	22	18.5
	Effective in preventing oral cancer	16	13.4
	Effective in preventing the spread HPV to other partners	21	17.6
General attitude towards HPV vaccination	Positive	45	37.8
	Negative	74	62.1

Results on respondent's attitudes towards HPV vaccine were presented in table 4, most (50.4%%) respondents reported that the vaccine was effective in preventing cervical cancer, 13.4% effective

in preventing oral cancer, 18.5% revealed that it was effective in preventing penile cancer whereas 17.6% reported that it was effective in preventing the spread HPV to other partners. In general, 37.8% had a positive attitude compared to 62.1% who had a negative attitude towards the vaccine.

Table 5: Perception towards HPV vaccination

Variable	Values	Frequency(119)	Percentage
Perceptions towards HPV vaccine	It is safe and effective	17	14.3
	It has side effects	34	28.6
	It increases the risk of getting HPV	16	13.4
	HPV vaccine protects against cancers	20	16.8
	It is only useful in women	18	15.1
	It causes swelling of the arm	14	11.8
General perception towards HPV vaccination	Positive	40	33.6
	Negative	79	66.4

Results on respondent's perceptions towards HPV vaccine were presented in table 5, 28.6% perceived the vaccine to have side effects, 16.8% said it protects against cancers, 14.3% reported that it is safe and effective, 15.1% perceived the vaccine to be only for women whereas 11.8% and 13.4% reported that it caused the arm to swell as well as increased the risk of getting HPV respectively. The general perception towards vaccine was negative at 66.4% compared 33.6% positive. In an interview with one of the parents;

“.....some parents reported that their daughters complain that their arms got swollen because of the HPV injections but it did not stay long. We thought it was just like other injections where the pain would later disappear”

4.4 Level of uptake of HPV vaccination amongst young adolescents in Mbarara City

This section of the study addresses research question three which sought to determine the level of uptake of HPV vaccination amongst young girls in Mbarara City. The gathered information was analyzed through a qualitative approach to generate frequency counts and percentages as below;

Table 5: Level of uptake of HPV vaccination amongst young girls

Variable	Values	Frequency(200)	Percentage
Is your daughter(s) vaccinated against HPV	Yes	84	42
	No	116	58

As shown in table 4 above, parents reported 58% of the girls were not vaccinated against HPV and 42% had been vaccinated

‘.....there are some (parents) who could come and ask us about it, and we would explain to them why the vaccine is given, and then after explanation, they would accept that their children be given the vaccine.’

In another interview with one of the parents;

“.....most of us encourage our daughters to be vaccinated... We normally tell our girls get vaccinated because no one has seen any adverse side effects of the vaccine”

CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter discusses the findings, draws conclusions and makes recommendations based on the study findings. The section further provided the areas that are suggested for further research.

5.1 Discussion of results

5.1.1 Level of knowledge on HPV vaccination among parents of young girls

In this study, level of awareness on HPV vaccination among parents of young girls was assessed. A big number (63.9%) of the respondents reported to have heard about HPV infection revealing that it was caused by aspects like having unprotected sex with multiple partners and having sexual intercourse at an early age. It was reported that HPV Infection resulted in cervical cancer, genital warts, and several other infections like penile and oropharyngeal cancers respectively. However, HPV was being confused with other sexually transmitted infections, such as the human immunodeficiency virus (HIV) and herpes simplex virus.

The study determined Knowledge on HPV vaccination among parents of young girls in Mbarara City. Although knowledge on HPV infection was relatively high in some areas, the proportion of respondents who had heard of HPV vaccine was as low as 41.3%. This implies that most parents didn't know about the vaccine. Very few parents knew about HPV vaccine and this affected the acceptability of the vaccine. This finding is comparable with (Ezenwa et al., 2013) who revealed that there is a high level of awareness for cervical cancer but little knowledge of its link to HPV.

This disagrees with (Allen et al., n.d.,2010) that reported a high level of knowledge on HPV vaccine

4-valent HPV vaccine, 2-valent HPV vaccine (cervarix) and 9-valent HPV were the vaccines commonly known to the respondents. Poor awareness of HPV vaccination was attributed to a general lack of knowledge about HPV among the respondents. This is in agreement with the research that was done among parents of young girls in Mysore, India that found low level of knowledge among parents.(Madhivanan et al., n.d.).

Less than half of their participants knew about the HPV vaccination even when it had been accepted and promoted in area for good number years. This could be a result of insufficient information about HPV infection and vaccination among young girls. Therefore greater efforts in health education are needed to improve the knowledge. This could be achieved through campaigns, mass media, school visits and community outreaches. This study finding is comparable to findings by Itty et al., (2014) who in their study revealed that average level of knowledge of HPV vaccine still extremely low in most developing nations. Remarkably, the poor knowledge levels of cervical cancer and HPV vaccination was underscored among women who mainly play as gatekeepers of the family's health and a key source of health information. As other had cited, mothers are an important source of psychosocial and instrumental support in adolescents' vaccine uptake, and they serve as the primary decision-makers on the HPV vaccine receipts for themselves and their children as well. In addition, the limited knowledge about cervical cancer and its prevention was observed even among the high-risk group for HPV infection like female sex workers. A study done in China also found low knowledge of HPV vaccine among high risk group like female sex workers.(Hong et al., 2013) Therefore, their knowledge, attitude, willingness and ability to pay for vaccination meaningfully impact the vaccine uptake for their whole family members.

5.1.2 Attitude and perception towards HPV vaccination

According to the study results, HPV vaccine was reported to effectively prevent different cancers (including, oral, penile) as well as prevent the spread of HPV to other partners. Although HPV vaccination was widely understood to prevent cervical cancer (and not necessarily HPV), a big number (62.1%) of the respondents generally had a negative attitude towards the vaccine citing its associated side effects. This is in agreement with the study done among parents that found poor attitude of parents towards HPV vaccination.(Chan et al., 2012) Attitude towards vaccinations in general was largely based on perceived side effects and ability to prevent against HPV diseases, which somehow contributed to low HPV vaccine acceptability and it is in disagreement with (Jaspers et al., n.d.) that revealed that parental acceptance of the vaccine was 96.1%.

This study also found that a few community members, who generally supported HPV vaccination, supported the idea based on the perception that it may prevent HPV and related conditions. This

disagrees with the study by (Dahlström et al., 2010) that reveal parents, 76% were willing to vaccinate their child if the vaccine is for free and 63% were willing to vaccinate even if the vaccine comes with a cost.

The contribution of positive attitudes about vaccination in general and of perceived severity of cervical cancer towards HPV vaccine acceptability have been previously reported (Blasi and Henrikson, 2015). These findings suggest that effective promotion of vaccination against HPV ought to make clear reference to the success profile of other vaccinations. They also underscore the need to provide as much information as possible about the nature of cervical cancer targeting especially the adolescents who appear to be less concerned about severity of cervical cancer in our study so as to enhance acceptability of HPV vaccination.

Although HPV vaccination was widely perceived as prevention strategy against cervical cancer, some parents were uncertain about the long-term protection by the vaccination citing that it had side effects, caused swellings as well as increased the risk of getting HPV. This concern has been cited in other studies (Petrosky et al., 2015) yet all available evidence shows that the HPV vaccinations do prevent cervical cancer and does not create any side effect (VanWormer et al., 2017). The concern underscores the need for future vaccination programs to incorporate messages emphasizing the ability of HPV vaccination to provide long-term protection based on proven long-term effectiveness of other vaccines. Some parents in this study also questioned the usefulness of vaccinating girls who are already sexually active and pointed out that some eligible girls missed vaccination for that reason. Sections of the community also variously misunderstood the protection provided by HPV vaccination. Some perceived the vaccination to offer other protections including prevention against pregnancy and uterine cancer as well as protection from other virus infections such as HIV and the influenza virus. HPV was often mistaken with other sexually transmitted viruses such as the HIV and herpes simplex virus.

Furthermore, some of the misconceptions were said to have inadvertently enhanced acceptability of the HPV vaccination. Misconceptions about safety of the HPV vaccination were largely based on previous experiences of adverse effects of other vaccinations. Some parents were reported to believe that the vaccine in general cause illness of children and they initially feared that the HPV

vaccination would be dangerous. This finding is in line with findings by Chauke-Moagi and Mumba, (2012) reported that in the early 1990s, many children died in the villages following a polio vaccination program. After being vaccinated, children who had previously been well would develop high temperatures, fever and other illnesses sometimes culminating into death. It is suspected that an expired vaccine was used. Some sections of the population believed that a defective vaccine was deliberately used to kill the children for unexplained reasons as explained by some of the parents.

5.1.3 Level of uptake of HPV vaccination amongst young adolescents

Uptake of HPV vaccination was low (42%) as only few girls had received it due to lack of knowledge about it. A few girls that had received the vaccine were individuals whose parents who knew the importance of the vaccine. Therefore one can infer that good knowledge translated to increased uptake and vice versa. The low vaccine uptake among the young girls was partly because the vaccine was introduced and awareness was not yet optimal as evident by the poor knowledge. This was in agreement with the findings of (Dempsey et al., n.d.,2009) who revealed that most parents refused their daughters from being vaccinated due to low knowledge about the vaccine. This disagrees with the study by (Yan Yuen et al., 2018) that reported a high level of uptake of that was at 81.4%.

The observed knowledge gap in the study was a setback to HPV vaccination programmes. More reasons for low vaccine acceptability were cited including, girls being too young and not sexually active; girls not being at risk to HPV infections, fear of side effects, fear of the unknown, and controversies surrounding the vaccine. This study finding is comparable to findings by Galagan et al., (2013) who stated that despite the effectiveness of HPV vaccine in preventing human papillomavirus (HPV) infection, acceptance of the vaccination is not guaranteed as some of the parents are still against it due to various reasons. Knowledge and attitude are important determinants for future vaccine acceptance.

The study further captured several misconceptions and concerns regarding safety of HPV vaccination which explain the low uptake of the vaccine. Some concerns such as; adverse effects of previous vaccinations, fear of unknown side effects, pain and swelling experienced during and

after vaccination, and fear of possible long term physical harm to the vaccinated arms are realistic concerns but seem to have been exaggerated and misinterpreted by sections of the public to discourage uptake of the vaccine. However, there were also several misconceptions fuelled by outright rumor and misinformation for unclear motives. These include misconceptions that vaccination against HPV; causes reproductive health problems (including life-threatening childbirth complications, alteration of menstrual cycle, birth of twins, and infertility), can cause cervical cancer, can worsen pre-existent illnesses, can cause death and alien diseases, is still experimental, and can cause mental retardation. These misconceptions suggest lack of information about HPV vaccination and they tended to foment negative attitudes about it. This finding supports results of other studies showing lack of information as a factor for low acceptability of HPV vaccination (Marchand and Bastani, 2013). They pointed out the need for HPV vaccine promotional activities to gather and disseminate adequate information to plug the suggested information gaps. In all, concerns and misconceptions regarding safety of HPV vaccination were reported to have initially undermined uptake of the vaccination, which is in agreement with numerous studies that report concern about safety of HPV vaccination being a disincentive for vaccination against HPV (Fernández et al., 2014). These findings suggest that efforts to promote vaccination against HPV should clearly articulate the non-serious nature of the vaccination's known adverse effects, their remedies, and brevity. They should also include deliberate strategies to neutralize the negative rumors and misinformation about the vaccination.

5.2 Conclusion

In conclusion, the study confirmed the level of knowledge on HPV vaccination among parents of young adolescents to be low despite most respondents revealing to have heard about HPV and its associated infections like cervical cancer and genital warts. A fraction of community members still have poor attitudes towards the vaccine which has negatively affected their perceptions. Negative attitudes and perceptions have equally played a big role towards vaccination leading to low vaccine acceptability in the area. A wide gap in knowledge still exists about HPV infection and uptake of HPV vaccination and this has to be addressed. There is need for more intense educational

intervention as regards to HPV infection and vaccination as well as its relation to cervical cancer so as to improve knowledge which will in turn improve uptake and successful implementation of HPV vaccination programmes in the area. The study further confirmed that age, religion, parent's marital status, parent's educational status, knowledge about the vaccine, traditional beliefs and medicine, experience with HPV related conditions and healthcare provider recommendation are other barriers limiting HPV vaccination amongst parents of young girl

5.3 Recommendations

There is need to engage health care providers who include Doctors, nurses and public Health specialists in community sensitization on the benefits of the vaccination

District Health management Team needs to promote tailored community-based interventions and sensitization programs which are viable means to achieve this for multiple reasons. They have the potential to curb concerns about safety and effectiveness of the vaccine while dispelling negative myths or controversies. This can be using religious leaders and local leaders

Ministry of Health needs to consider training of healthcare workers, the first contact point for patients, will provide them with the accurate knowledge and information necessary to discuss cervical cancer, HPV and HPV vaccine with their patients as well as the ability to properly detect, screen and test for HPV and cervical cancer.

Health information with short story lines focusing on religion and HPV vaccination may also improve HPV health literacy, where the target group are able to identify with the characters portrayed in the short skit; identifying with the source of the message, or persons portrayed in the

message has been proven to enhance effective communication, and consequently service uptake. Involving key influential people e.g. church leaders from within the targeted community in health campaigns may influence vaccination uptake.

Community representatives should be involved in designing a message that serves the needs of the study population. The use of celebrities in health messages may also be beneficial, especially male celebrities, as this might influence vaccine acceptability for fathers, who in the African context are the ultimate decision makers.

5.4 Areas for further research

Findings from this study indicate that since uptake was low among the respondents, HPV vaccination to young girls aged 8-12 years will be unlikely and this may be attributed to the poor knowledge observed in this study. Further study is recommended to identify other factors influencing uptake. This low uptake of HPV vaccination predisposes girls to HPV infection which can otherwise be prevented by vaccination. This could in the long term lead to an increased prevalence of HPV infection and its consequences.

Future studies may explore the effects of knowledge levels, sexual activity and having more sexual partners on vaccine acceptability.

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Appendix II: A questionnaire for Parents of young girls aged 8-12

Dear respondent

I am Twikirize Bright, a student of Bishop Stuart University carrying out a study titled **“Assessment of knowledge, attitude and perception of human papilloma vaccination (HPV) amongst parents of young girls (aged 8 – 12) in Mbarara City”**. As one of respondents you have been selected to provide information that could be used to assess the knowledge attitudes/perceptions about Human Papilloma Vaccine. I assure you that, all the information you provide is for academic purpose and not otherwise. Therefore, you are kindly requested to respond truthfully to the following questions. I thank you in advance. Respondent Address

Division..... Ward

Cell Village.....

Date of Interview Time of interview

Name of the interviewer

1. Gender

Male ()

Female ()

2. Age bracket a. 15-35 () b. 36-50 () c. 51 and above

3. Marital status

a. Married () b. Single () c. Separated d. Widow e. Widower

3. Religious Affiliation

a. Anglicans () b. Catholics () c. Moslems ()

4. Level of education

a. none () b. primary () c. secondary () b. tertiary ()

5. Source of income?

(a) Business () (b) Employed () (c) Farming () (d) None ()

6. Monthly income

7. Family size..... a. boys b. Girls

8. Have you heard of cervical cancer?

a. Yes () b. No ()

10. If yes, what is it?

.....
.....
.....

11. Where did you get information on it?

a. Social media () b. radios/TV () c. Health workers () d. others

12. What causes it?

.....
.....
.....

13. Have you heard of HPV vaccine?

a. Yes () b. No ()

14. Where did you get information?

a. Social media () b. radios/TV () c. Health workers () d. others

15. Is your girl(s) vaccinated?

a. Yes () b. No

15. If yes, when was she vaccinated?

.....
.....

16. Type of vaccine received

a. 4-valent HPV vaccine ()

b. 9-valent HPV vaccine ()

c. 2-valent HPV vaccine ()

e I don't know ()

17. How many vaccines has she had.....

18. Where was she vaccinated from?

a. School () b. home () c. hospital () d. others.....

19. Who vaccinated her?

a. nurse () b. teacher () c. parent () d. others.....

20. What do you generally know about HPV vaccine?

.....
.....
.....

21. Would you recommend your daughter(s) to be vaccinated with HPV?

If yes, why

.....

.....

.....

If no, why

.....

.....

.....

22. What is your attitude towards HPV vaccine?

- a. Effective in preventing cervical cancer ()
- b. Effective in preventing penile cancer ()
- c. Effective in preventing oral cancer ()
- d. Effective in preventing the spread HPV to other partners ()

23. How do you generally perceive HPV vaccine?

- a. It is safe and effective ()
- b. It has side effects ()
- c. It increases the risk of getting HPV ()
- d. HPV vaccine protects against cancers ()
- e. It is only useful in women ()
- f. It causes swelling of the arm ()

24. What could the other barriers/facilitators that limit girls aged 8 -12 from receiving HPV vaccine?

.....
.....
.....

25. What can be done to address the very barriers restraining adolescent girls from getting vaccinated?

.....
.....
.....

26. Any last remarks

.....
.....
.....

Thank you for your participation

Appendix V Translated Data collection tool

EBIBUZO BYABAZAIRE

Ahari orikugarukamu

Ninye Twikirize Bright omwegi wa Bishop Stuart University orimu nacondoza aha kumanya kandi nentekateka yabazaire biine aha kugyema nokusirika abashiki be`myaka munaana kuhika aharikumi nibiri ekokoro yanyinda. Nkomwe ahabatorine kugarukamu kuhereza amakuru agakwatirine nokumanya kandi nentekateka,ninkuhamiza kimwe ngu amakuru agoratuhe nagebwokwega konka tihariho kindi.

Nahawekyo noshabwa kugarukamu omumazima kandi nokuraturira ebibuzo ebyorabuzibwe. Webare

Oburiigo bwowagarukamu

Eishaza.....

Omurika.....

Ekyanga.....

Ekyaro.....

Eizooba rwokubuzibwa..... Eshaaha
zokubuzibwa.....

Eiziina rwowabuza.....

1. Obuhangwa

a. Omushaija ()

b. omukazi ()

2. Emyaka

a. 15 – 31 ()

b. 31-50 ()

c. 50 and above

3. Obushere

a Nshwirwe b ndinyenka c.nkatana nomushaija/omukazi c. Efakazi Efashaija

4 Ediini

a Abakurisitayo b abanyakaturiki c abasiramu

5 Obwegyese

a. tashomireho () b. Primary () c. Secondary d. amatendekyero agahiguru

6. Obwegyese bwasho

a. tashomireho () b. Primary () c. Secondary d. amatendekyero agahiguru

7. Entasya

(a) Omushubuzi () (b) omukozi womurimo (c) Omuhingi () (d) tayiine ntasya

8. Entasya yaawe yaburikwezi neyinganaki.....

9. Oine abaana bangahi

a Aboojo..... b abaishiki.....

10. orahurero ekokoro yomunwa gwanyinenda

(a) Ego () (b) Ngaha ()

11. yaberi yego nemanyisa ki

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(a) ahampurizangana () b. aharediyo/tivi () (c) kuruga ababiki bangyenzi bangye
(d) kuruga ahabazaire (e) kuruga nahandi

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(a) Ego () (b) ngaha ()

(a) ahampurizangana () b. aharediyo/tivi () (c) kuruga ababiki bangyenzi bangye
(d) kuruga ahabazaire (e) kuruga nahandi

(a) Ego () (b) Ngaha

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18. akagyemwa omubazi gwakikaki?

a variant yakana

b Varianti yamwenda

c Varianti yakabiri

19. Akagyemrwa Nakahi

a Ahaishomero b Omuka c Omwirwariro d nahandi.....

20. Nomanyaki aha mubazi ogurikugyemwa kusirika ekokoro

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21. Noha owokutetateka ngu ashemerire kugyemwa kandi ahabwaki?

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22. Omubazi ogokugyema nogutekatekahoki?

a nugurinda ekokoro yanyinda

b nugurinda eko yobushija

c nugurinda ekokoro yomukanwa

d nugurinda Kujanjaza akakoko

23. entekateka yawe aha mubazi ogu neha?

a nimurungi kandi nigukora

b gwaine akabi

c nigongera kyangi yokunga akakoko

d nigurinda ekokoro

e nigukora omubakazi bonka

f nigureta okuzimba omukono

24. Nibintu ebizibire abahiki bemyaka yanyu kugemya?

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25 Nihabasa kukorwaki kurebuka ngu harigaho ekirikuzibira banywani banyu kugyema?

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26 Hariho ekindi

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Webaare Kwejumbira omukumbira omumushomo ugu

Appendix III: Interview schedule for key informants

Dear respondent

I am Twikirize Bright, a student of Bishop Stuart University carrying out a study titled “Assessment of knowledge, attitude and perception of human papilloma vaccination (HPV) amongst parents of young girls (aged 8 – 12) in Mbarara City”. As one of respondents you have been selected to provide information that could be used to assess the knowledge attitudes/perceptions about Human Papilloma Vaccine. I assure you that, all the information you provide is for academic purpose and not otherwise. Therefore, you are kindly requested to respond truthfully to the following questions.

Division.....

Ward

Cell

Date of Interview

Time of interview

What is your gender?

What is your level of education?

Do you have girls aged age 8 -12, if yes how many are they?

Have you heard of cervical cancer? If yes, what do you know about it?

Where did you get information about it?

What causes it?

Are your aware of the HPV vaccine? If yes, what do you know about it?

Who should get the vaccine?

How many vaccines should they get?

Where should they be vaccinated from?

What have you heard about HPV vaccine?

Whom do you recommended to be vaccinated and why?

What is the general attitude towards HPV vaccine?

What is the general perception towards the HPV vaccine?

What could the other barriers/facilitators that limit girls aged 8 -12 from receiving HPV vaccine?

What can be done to address the very barriers restraining adolescent girls from getting vaccinated?

Any last remarks

Thank you for your participation