SCHOOL OF MEDICINE

DEPARTMENT OF PUBLIC HEALTH

Acceptability of the Human Papillomavirus (HPV) Vaccine among Stakeholders in two selected Schools in Lusaka

FORTRESS KUCHEBA

A dissertation submitted to the University of Zambia in partial fulfilment for the award of the degree of Master of Public Health in Health Promotion

DECLARATION

This dissertation is the original work of FORTRESS KUCHEBA.

It has been produced in accordance with the guidelines for MPH dissertation for the University of Zambia. It has not been submitted elsewhere for a degree at this or another university.

Signature:……

Date:……

CERTIFICATE OF COMPLETION OF DISSERTATION

I……

Hereby certify that this dissertation is the product of my own work and, in submitting it for the degree of Master of Public Health programme, further attest that it has not been submitted to another university in part or whole for the award of any programme.

Signature:…….

Date:…….

I, Dr Joseph Mumba Zulu,

Having supervised and read this dissertation is satisfied that this is the original work of the author under whose name it is being presented.

I confirm that this work has been completed satisfactorily and is ready for presentation to the examiners.

Signature/supervisor:……

Date:……

Head of department:……..

Date:……

Department:……

CERTIFICATE OF APPROVAL

This dissertation by Fortress Kucheba is approved in partial fulfillment of the requirements for the award of a Masters in Public Health (MPH) by the University of Zambia.

Examiner 1:…… Date:……

Examiner 2:…….Date:……

Examiner 3:…… Date:……

Head of department

Signature:……

Date:……..

Department of public health

ABSTRACT

Human papillomavirus (HPV) is the most common STI and major cause of cervical cancer globally. Zambia has one of the highest cervical cancer rates in the world. Approximately 54 cases per 100 000 women are diagnosed with cervical cancer annually with 1,400 dying (SALC Report, 2012). Preliminary results from the pilot vaccine immunization program in Zambia had shown a mixed picture on the response to the vaccine.

A qualitative case study was conducted in two schools (Kings Highway and Kalingalinga Primary) which participated in the pilot for HPV rollout to assess acceptability of the HPV vaccination. Data was collected through Key informant interviews, In-depth-interviews, Focus group discussions and analyzed using Thematic Framework Analysis. Media reports and commentaries from bloggers were also reviewed for triangulation.

The study findings revealed that acceptability of the HPV vaccine was influenced by Individual, Interpersonal and Service factors. Individual characteristics like knowledge of the vaccine, perceived risks and benefits, attitude towards the vaccine, fear of injections and girls being perceived as too young to receive the vaccine, influenced acceptability. Interpersonal processes and primary groups like family, friends, and peers also influenced acceptability by shaping social identity, nature of support, and role definition. Services factors, which included regulations, policies, and informal structures, also influenced acceptability of the vaccine by either constraining or promoting recommended behaviours.

The study identified factors that influenced acceptability at individual, interpersonal and service levels. The findings suggest low acceptance of the HPV vaccine due to low levels of knowledge and awareness of cervical cancer, HPV and HPV vaccine. There is therefore an urgent need to inform the public about HPV, HPV vaccine and cervical cancer if there is to be a high widespread acceptance of the HPV vaccine.

DEDICATION

To God almighty for giving me the opportunity to do this.

To my dear husband for his continued love and support.

To my loving children; Choolwe, Chileleko, Chabota and Chabilo for understanding and endurance when mummy was busy writing the thesis instead of giving you all the attention you needed.

To my brother Japhet Kucheba for believing in me.

To my late mother for her inspiration. Your ‘iron fist’ has paid off.

ACKNOWLEDGEMENT

The design and preparation of this study owes a lot to numerous contributions from many parties:

My supervisors Dr J.M Zulu and Dr M. Makasa for the technical assistance in the development of the research proposal and report. Special thanks go to Dr Oliver Mweemba for providing materials on qualitative research methods and his continued support and guidance.

My research respondents for according their time and entrusting me with their personal information.

Caroline Lungu and Caroline Kunda for helping out in the Focus Group Discussions as note takers.

Last but not the least, my fellow students and my friends for being the support system during my MPH program.

TABLE OF CONTENT

Contents

CHAPTER ONE

1.0 Introduction

Cervical cancer is one of the leading causes of cancer death among women in the world (Jemal, et al, 2011). More than any other cancer, cervical cancer reflects a striking global health inequity. About 529,000 new cases of cervical cancer were diagnosed in 2008, making it the third most common cancer among women worldwide (Ferlay, et al, 2010). More than 85% of these cases and deaths occur in developing countries, with the highest incidence rates being in Eastern, Western and Southern Africa, as well as South-Central Asia and South America (Jemal, et al, 2011). Cervical cancer remains a major public health problem in developing countries. In Africa alone, approximately 53 000 women die of the disease every year (Parkin and Bray, 2006). Zambia has not been spared from the cervical cancer scourge. Estimated at 54 cases per 100 000 women per year, Zambia has one of the highest incidence rates in Africa (SALC Report, 2012). These statistics show that cervical cancer is a major public health problem that needs immediate and long-term interventions.

Human papillomavirus (HPV) is one of the most common Sexually Transmitted Infection (STI) and the major cause of cervical cancer (WHO, 2015). Most HPV infections in young women are temporal and have little long-term significance. While the majority of the known types of HPV cause no symptoms in most people, types 16 and 18 can lead to a range of cancers (Clifford et al, 2003). Early age of first intercourse has proved to be one of the most common risk factors for cervical cancer, coupled with having multiple sexual partners (Louie et al, 2009). Hence, primary prevention of cervical cancer is essentially based on healthy lifestyle. It is therefore important to educate young girls about the Human papillomavirus before they start indulging in sex (WHO, 2009).

Education and other short-term screening procedures such as Pap smear tests have not been enough to reduce cervical cancer (Franco and Harper, 2005). The HPV vaccine presents opportunities to reduce cervical cancer and save many lives. According to Van Krickinge et al, (2014), HPV vaccination has been found to effectively prevent cervical cancer and could lessen its incidence and mortality rates. This is particularly true for developing countries like Zambia, which are especially burdened by cervical cancer (Tracy et al, 2014). Currently the HPV vaccine

is being administered in several other African countries such as Rwanda and Uganda, which have already incorporated the vaccine as part of their routine vaccination countrywide. Other countries also on their way to introducing the vaccine and exploring how to reach eligible girls are Ghana, Kenya, Malawi, Mali, Nigeria, Niger, Sierra Leon and Tanzania (Perlman et al, 2014).

The vaccine is given as an injection in the upper arm. For a girl to be fully protected, she must receive three doses of HPV vaccine. The second dose should be given two months after the first dose, and third dose should be given four months after the second dose (WHO, 2011). The HPV vaccine is administered in adolescent girls and is believed to be highly effective in those who are not yet sexually active. Vaccinating girls before they are exposed to HPV would therefore have the greatest impact on cervical cancer incidence (Ladner et al., 2014).

With the availability of an effective and safe vaccine against HPV, there is real hope for reducing the global burden of cervical cancer (WHO, 2011). Although achieving broad coverage of young adolescents and securing financing can be challenging, it is saddening to realize that with every 5-year delay in bringing vaccination to developing countries, 1.5 million to 2 million more women will die (Agosti and Goldie, 2007).

1.1 HPV vaccine in Zambia

Zambia's cervical cancer burden ranks second in the world next to Guinea with over 1,400 women dying annually from the disease (Ferlay et al, 2002). Because of this, the Zambian government had recently acquired vaccines worth US$11 million in an attempt to save the next generation of women from cervical cancer (WHO, 2011).

The vaccine was introduced on 27th May, 2013 on pilot basis in Chongwe, Kafue and Lusaka districts to pave way for scale-up to the rest of the country. The vaccine program was using a school-based strategy that was targeting all girls between ages 9 and 13 years. It was not compulsory, but like other vaccination services, all the government did was to provide the service and encourage clients to seek these services (Pokeyourmind, 2013).

Preliminary results for the first round of the demo represented a mixed picture on the response to the vaccine as acceptability of the vaccine was not optimal (Zambia Reports, 2014). This situation is similar to other countries like Canada, Mexico, British Columbia, Tanzania and Botswana which also showed mixed response. This mixed picture triggered the need to understand acceptability issues in Zambia. Therefore, the purpose of this study was to explore the acceptability of HPV vaccine among the stakeholders involved.

1.2 Statement of the problem

Over 1,400 women die annually from cervical cancer in Zambia (Parkin et al., 2002). HPV infection is the cause of nearly all cases of cervical cancer. HPV infection, which generally occurs in adolescents after the first acts of sexual intercourse, puts women at a potential risk of developing cervical cancer at some point in their lifetime (Munoz et al, 2003). Though the HPV vaccine has been introduced, preliminary results from the pilot in Zambia and study results from other countries (e.g Tanzania, Canada, Mexico) indicate that there are acceptability issues in the uptake of the vaccine (Agosti and Goldie, 2007).

Little is known about the acceptability of the HPV vaccine in Zambia. There is a need to understand the factors that influence acceptability and HPV vaccine uptake in Zambia as the vaccine was introduced for the first time in the country.

The studies done in Zambia (Kaubi, O., 2011, Liu et al, 2012) concentrated much on cervical cancer prevalence and only mentioned the HPV vaccine as a strategy to combat the cancer. These studies were done prior to the implementation of the HPV vaccine in the country and as such, were just trying to project the acceptability of the HPV vaccine if it were made available. In addition, the samples in these studies were only drawn from women/parents to establish whether the HPV vaccine would be acceptable or not. The target population was not varied and a complex of issues influencing acceptability was not studied in detail. There is need to explore acceptability of the HPV vaccine among stakeholders. This is because the success of the vaccine depends on its acceptability among stakeholders of the society.

1.3 Justification of the study

Having introduced the HPV vaccine on a pilot phase, its acceptability was a contentious issue at community level in Zambia. There was also limited knowledge on the factors influencing acceptability of the vaccine at community level. There was need therefore for a research on HPV vaccine acceptability now that the vaccine was available, to understand how best to deliver this vaccine to adolescent girls among populations who may have little or no knowledge about HPV and cervical cancer, and may be suspicious of vaccines. This study therefore paid more attention to stakeholders of the Zambian society, which included the government, NGOs and community. In so doing, the study identified issues influencing acceptability of the HPV vaccine, which included general understanding of the vaccine and attitude towards the vaccine. From a health promotion point of view, it is important to understand indigenous knowledge and beliefs before implementing a program. With this understanding, implementers can well know how best to integrate the community's perspectives into their own program so as to have a program, which is community-oriented. Only then can an intervention be successful. Otherwise, any program risks failing if it does not fully involve the community. It is hoped that the findings of the study will assist in the preparations of a national HPV program in future.

CHAPTER TWO

2.0 Literature review

2.1 Introduction

Affecting relatively young women, HPV is the largest single cause of years of life lost to cancer in the developing world. HPV has been found to be highly prevalent among women in sub Saharan Africa. There are 15 types of HPV that are described to be the high risk and are associated with 99.7% of invasive cervical cancer cases (Munoz et al, 2003). Worldwide, types 16 and 18 have been associated with 70% of cervical cancer cases (Clifford et al., 2003). Yet within sub Saharan Africa, the overall combined estimate of HPV types 16 and 18 among the cervical cancer cases has varied widely between 43.6% - 90.2% (Clifford et al., 2003).

As a primary prevention method, a vaccine for HPV has been developed for the two common types, HPV 16 and 18. The HPV vaccines Cervarix and Gardasil are being administered in more than 100 countries, including African countries, as a primary preventive strategy (Ladner et al, 2014). Cervarix is an inactivated bivalent vaccine (HPV2) that protects against HPV types 16 and 18. Gardasil is an inactivated quadrivalent vaccine (HPV4) that protects against HPV types 16 and 18, and against types 6 and 11, which are human papillomaviruses that cause genital warts (Clifford et al, 2003). Zambia is using Gardasil in its vaccination programme.

The impact of the vaccines on the incidence of genital warts and invasive cervical cancer will be seen only many decades in future (WHO, 2011). Since HPV is acquired typically through sexual intercourse, the main target for the vaccine are adolescent girls who preferably have not started sexual debut (Van Krickinge et al, 2014).

The spectrum of diseases caused by HPV, in particular, precancerous lesions, cervical cancer and genital warts, clearly indicates a significant public and personal health problem, which justifies the vaccine administration as an HPV prevention strategy. However, the success of this vaccine depends on its acceptability by the people in the communities. Therefore, it is important to understand potential barriers and facilitators of HPV vaccination in order to have a successful program that in the long term would bear the intended results of reducing the morbidity and mortality due to HPV infection.

2.2 Factors associated with acceptability of the HPV vaccine

To achieve high coverage in HPV vaccination program, one must examine the factors that influence acceptability of the HPV vaccine (Binagwaho et al, 2012). Several studies in various parts of the world have been conducted concerning acceptability of the HPV vaccine. This section of the thesis reviews the studies that have been conducted on acceptability of the HPV vaccine. Themes, according to major issues surrounding acceptability of the HPV vaccine, have been generated. The main themes generated are knowledge of HPV and HPV vaccine, Health belief, attitude to vaccines, perceived risk, cost of vaccine, risk behaviour associated with the vaccine, religious beliefs, age of administration, decision-making, faith in Doctors and setting.

2.2.1 Knowledge of HPV and HPV vaccine

Some studies report that most parents have no prior knowledge of the HPV vaccine (Bair et al., 2008; Trim et al., 2011; Remes et al., 2012; Perlman et al., 2014; Cunningham et al., 2015) . In these studies, some parents had little or no information about HPV and cervical cancer, but still stated that the vaccine would have a benefit if it did not have a harmful side effect. The little information which they had was gotten from the media. Thus, most women felt that they needed more information about the vaccine, especially regarding its safety and possible side effects before they could make an informed decision whether to vaccinate their children or not.

In Ezenwa's study, HPV awareness increased with increasing level of education. In this study, all respondents with primary or no formal education had no knowledge of the vaccine whereas nearly half of those with tertiary education had heard of the HPV vaccine (Ezenwa, 2013). Her study revealed a low awareness of HPV and HPV vaccines among mothers that participated. In this group, there was high awareness for cervical cancer but little knowledge of its link to HPV. Surprisingly, increasing parental knowledge of HPV and HPV vaccine did not always show increase in vaccine acceptance as Dempsey et al., (2006) noted. Rather, acceptability was determined by non-information based preferences. As observed by Cox, without an understanding of relative risk probabilities, parents may over-estimate extremely low-likelihood risks such as a life threatening vaccine reaction, and under-estimate much higher likelihood events such as contracting the disease the vaccine is intended to prevent (Cox et al., 2010).

Without adequate information on the HPV and HPV vaccine, studies have shown that behavioural factors may influence, to some extent, vaccination acceptability. Therefore, there is need for additional education and provision of information about HPV vaccine, its benefits and risks, before embarking on the vaccination program. Rwanda for example, achieved 93% success rate in its HPV vaccination program due to the national-wide sensitization campaign before delivery of first dose (Binagwaho et al, 2012).

2.2.2 Health Belief

This suggests that people's beliefs about health problems, perceived benefits of action and barriers to action, and self-efficacy explain engagement (or lack of engagement) in health-promoting behaviour (Brocki & Wearden, 2006). Studies have shown that those who practice healthy lifestyle are more willing to receive a personal vaccination against disease for themselves and their children. For instance, in Marlow et al (2008) and Liu et al (2012) studies, regular attendance at cervical cancer screening was an important predictor of HPV test acceptance (Marlow et al, 2008; Liu et al, 2012). In another study investigating health behaviour correlates of vaccine acceptability, Fang observed that vaccine acceptability was higher among physically active individuals. On the contrary, in the same study, smokers reported greater acceptability of the HPV vaccine. This could be that these had a heightened awareness of cancer/ cancer related risks of second hand smoke and therefore were more willing to vaccinate or accept interventions that protected their daughters. In addition, participants with a strong belief that cancer can be cured if it is caught early reported a greater acceptability of the HPV vaccine (Fang et al., 2010).

Most parents that accepted the vaccine for their daughters were motivated by the prevention of disease and the protection of their child. Latina mothers for example, expressed their desire to provide ‘security’ for their daughters considering their daughters belonged to the ‘risky youth of this generation’ (Bair et al., 2008). These were the kind of people that held their health in high esteem and would do anything to safeguard it. Therefore, they were also concerned about the health of their adolescent daughters and wanted to protect it.

The HPV vaccine benefits such as ability for HPV vaccine to prevent future health problems such as genital warts and cervical cancer, and its ability to reduce worry about a daughter’s

health, was viewed positively by more than half of the African American parents' population (Thompson et al, 2011). The majority felt that the vaccine was a good way to protect their child's health. Remes, in his study, noticed that almost all adults interviewed said they would allow their daughters to be vaccinated, citing prevention to be better than cure. Similar sentiments were echoed by the school girls interviewed, who said that they would like to be vaccinated to avoid a dangerous disease like cervical cancer (Remes et al., 2012). This indeed qualifies the notion that health is a derived good.

2.2.3 Attitude to vaccines

Another emerging aspect from the literature, which is probably tied to the health belief, was the general attitude towards vaccines. Studies have shown that the HPV vaccine acceptability is also affected by the parental attitudes towards vaccines and the uptake of childhood vaccination (Ogilvie et al., 2007). In this study, parents who had a positive attitude towards vaccines were more likely to intend that their daughters undergo HPV vaccination. In a study by Trim, parents who had previously vaccinated their children against meningitis or had a general belief in the efficacy of vaccines were more likely to vaccinate their daughters. Parents who had refused previous vaccines for their children and had concerns about too many vaccinations were less likely to vaccinate (Trim et al., 2011). In Liu, et al study, familiarity with vaccines and trust of vaccination was found to be high (Liu et al, 2012). These findings were confirmed by data published by UNICEF reporting vaccination rates from 77% to 92% of childhood vaccines in Zambia (UNICEF, 2012).

Some parents shunned the HPV vaccine because they believed that their child experienced great discomfort or danger when receiving immunization (Dempsey et al., 2006). This is probably why other parents did not consider cervical cancer as much of a worry and felt that the pap smear tests provided adequate protection (Waller et al., 2006). On the other hand, some parents that had undergone Pap smear tests, especially those who found the Pap tests unpleasant, saw the HPV vaccine as an end to the smears. An injection would save their daughters a lifetime of smears. They were particularly keen to spare their daughters this experience. This is evident in Waller's findings on 'Mothers' attitude towards preventing cervical cancer through HPV vaccination'. In

her study, women were keen to prevent their daughters from developing cervical cancer, particularly those who acknowledged experience of abnormal Pap smear results and treatment for Cervical Intraepithelial Neoplasia (Waller et al., 2006). These studies have shown the role of experiential knowledge in influencing the acceptability of the vaccine. These parents had a feel of the issue at hand and were ready to protect their daughters from experiencing the same. From these studies, it is clear that parents had a high concern for health and at the same time, a good number of them had less confidence in vaccines.

`

2.2.4 Perceived risk

Parents' notion of perceived risk of their adolescents acquiring a disease influenced their decisions to vaccinate their children. Parents who had experience with chronic illness, either in themselves or in a family member were more likely to be accepting of the HPV vaccine (Dempsey et al., 2006; Thompson et al, 2011). These parents perceived their children to be susceptible to STIs and/or HPV infection, having had a personal experience with genital warts or cervical cancer. Therefore, not wanting their daughters to experience the same, these parents were more likely to vaccinate their daughters (Dempsey et al., 2006; Trim, et al., 2012).

Closely tied to this is the safety of the vaccine. Most women felt they needed more information about the vaccine, especially regarding its safety and possible side effects before they could have a view (Waller et al., 2006; Ogilvie et al., 2007; Bair et al., 2008; Thompson, 2012; Cunningham et al., 2015). In these studies, mothers needed to prove the efficacy of the vaccine and if it were not risky before accepting vaccination on their daughters. Similarly, in Mali, parents were afraid of side effects of the HPV vaccine and felt it was risky to do so before all the vaccine's risks were known (Poole et al., 2013).

The major effects that were feared were infertility and cancer. For instance, in a qualitative study done in North West Tanzania, 35% of the male teachers that participated in the study said they would not allow their own daughters to be vaccinated because of the potential effect of the HPV vaccine on future reproduction. They claimed vaccinations linked to issues of reproduction had had very bad results later on, and that the vaccine could disorder and destroy the eggs that a girl had, resulting in difficulties in reproduction. In the same study, an aunt of one student was suspicious of the vaccine and told her niece that the health care providers were coming to

implant cancer in people and to reduce reproduction (Remes et al., 2012). In these studies, there was a very high mistrust of the vaccine. As Agosti noted, in environments characterized by mistrust of governmental health care initiatives, vaccination programs targeted towards young women may be misunderstood as attempts to control fertility (Agosti and Goldie, 2007).

However, in other studies, participants trusted the vaccine since it had been approved by their government. They assumed their government would not offer something that was not safe. Some participants that declined the HPV vaccine were willing to change their minds if more detailed report on safety and effectiveness of the vaccine were given (Owonikoko, et al., 2013).Yet others would only vaccinate their daughters if it were available with other childhood vaccines. At least this way, they would be assured of its safety (DiAngi et al., 2011). The thinking here is probably that if it is made available and common just like any other childhood vaccine, almost all children would access it, reducing the likelihood of it being dangerous.

It is clear from these studies that parents were highly concerned about their daughters' health and were ready to safeguard it.

2.2.5 Cost of vaccine

Cost had proved to be a barrier to the introduction of the HPV vaccine. The three dose series of the vaccine had cost an estimated $360 in the United States (Agosti and Goldie, 2007). The Global Alliance for Vaccines and Immunizations (GAVI), a partnership of national governments, the World Health Organizations (WHO), the World Bank (WB), the Bill and Melinda Gates Foundation, the vaccine industry, public health institutions and Non Governmental Organizations, provided technical assistance and financial support for vaccines in countries with a gross national income of less than $1000 per capita. With subsidies from GAVI, HPV vaccine could be brought to the poorest parts of the world (Agosti and Goldie, 2007).

Despite this, in some studies, cost was a barrier, though not commonly stated by parents, for the adolescents receiving the HPV vaccine (Thomas, 2008; Allen et al., 2010; Trim et al., 2012; Poole, et al, 2013; Ezenwa et al., 2013). For instance, in Lagos, Nigeria, 22.8% of mothers were worried about the vaccine's cost (Ezenwa et al., 2013). The cost of vaccination was an issue to both the health care providers and parents. In Mali, the majority of the participants would only

accept the HPV vaccine if it were available at no cost to participants (Poole, et al., 2013). In another study by Ports, (Ports et al, 2013), perceived costs associated with the vaccine was the major barrier to vaccination mentioned by most Malawian women. These perceived costs were also identified in Biellic's study such as insufficient human resources and capacity of staff, which were reported as a challenge to vaccine delivery (Biellic et al., 2009). In other studies, some parents would only accept the vaccine if there was availability of health insurance to cover vaccine cost (Trim, et al, 2012). In addition, many wanted to know the prevalence of cervical cancer and to weigh up the costs and benefits of the vaccine (Waller, et al., 2006).

In Zambia however, there was no out of pocket cost to the patient as the health care costs were borne by government. Nevertheless, it would be important to inquire what indirect costs were incurred as a result of the vaccination process.

2.2.6 Risk behaviour

Most studies have shown the possible complacency effect of the HPV vaccine (Dempsey et al., 2006; Waller et al., 2006; Bair et al., 2008; Thomas, 2008; Allen et al., 2010; Remes et al., 2012). In these studies, there were concerns about the vaccine giving the girls a false sense of protection and engaging in behaviours that would threaten other aspects of their health. This concern was particularly so with clinicians (Sussman et al., 2007). Parents believed that having a child vaccinated against an STI would equate to condoning precocious sexual behaviour. Mothers expressed concern about the implicit encouragement of sexual activity, as the girls would not have to worry about HPV but have more sexual relations without protection, since they would be vaccinated. Some mothers worried about an increase in promiscuity and risk of pregnancy, HIV and other STIs (Waller et al., 2006). However, there were still parents with positive attitude towards vaccines, i.e. those that believed it to be safe. These were less concerned about the potential behavioural effects (Allen et al., 2010). This was similarly so with parents who felt that the vaccine had limited influence on sexual behaviour (Ogilvie et al., 2007). Similarly, in Cunningham's study, the concern of complacency effect was insignificant and was more so among the rural participants (Cunningham et al., 2015).

As observed from these studies, there were mixed opinions about parental concerns for increased or more risky sexual activity if child was vaccinated. Whereas some parents expressed concerns that the HPV vaccine might encourage earlier sexual activities, other parents were not concerned that their children would be sexually active if they were given the HPV vaccine (Bair et al., 2008; Trim, et al., 2012).

2.2.7 Religious beliefs

This notion of religious beliefs came out in some studies. In one study for instance, one Latina mother pointed out that she did not perceive her child as susceptible to HPV in her teenage years due to the education she hoped to give her and the religion she followed, which discouraged having sex before marriage (Bair et al., 2008). In another study, there was a concern of whether the vaccine was in conformity with religious beliefs (Cunningham et al., 2015). In other studies however, religious affiliation and the role of religious beliefs in daily decisions were not associated with the intention to vaccinate.

2.2.8 Age of administration

A major barrier that emerged from the literature was the age at which the HPV vaccine should be administered. In general, parents disagreed on the age of administration. There were several reasons to this. One reason that emerged was that before the age of 12, the girls were not mature enough to understand vaccine information. They thus believed it would be important to consider 12 year olds or older girls for vaccination, who they claimed would be mature enough to understand the vaccine information and could help to educate parents (Waller et al., 2006; Remes et al., 2012). It is hence not surprising that mothers whose youngest daughters were 13-16 years were more likely to be acceptors of HPV vaccine than those with younger daughters (Marlow et al., 2008). The later felt their daughters were not at risk of sexual activity at that age, but might when they were older (Ogilvie et al., 2010). Other parents compared the vaccine to the oral contraceptive pill, which they said was best to invest in only when you became at risk, i.e. sexually active (Trim et al., 2012).

2.2.9 Decision-making

Another aspect that arose from literature was that of decision-making. Much of the debate on age was centred on the child being unable to make decisions at that age at which they were vaccinated. As such, it was parents that made decisions to vaccinate or not vaccinate their daughters. For instance, in a case control study done in Tanzania, among pupils' controls, one of the reasons given for accepting the HPV vaccine was parental wishes. This means some girls were driven to receive the vaccine by their parents, even if it were not their wish (Watson-Jones et al., 2012). It is no wonder some parents felt a child should make the decision to vaccinate against HPV on her own when she becomes an adult.

Another interesting aspect that arose from the 'young age' concern was that HPV vaccine condoned sexual activity. Some parents felt their daughters were too young to start engaging in sexual activities (Ogilvie et al., 2010). These agreed that children should be older and sexually active to receive the vaccine. On the contrary, in some studies, there was a presumption that adolescents engage in risky sexual behaviour by the age of 13 or 14 years. It is no wonder mothers of older daughters perceived their daughters to be at greater risk of infection than did mothers of younger daughters (Bair et al., 2008). Therefore, it was advisable to vaccinate these girls before they become sexually active (Sussman et al., 2007; Remes et al., 2012). In a study by Thomas, most parents (82%) preferred to vaccinate their children before they matured and understood about sex (Thomas, T.L., 2008). This also emphasizes the readiness of parents to protect their children against STIs.

From these studies, it appeared that most parents did not understand the reason for vaccinating at a young age. Rather, they viewed the vaccination as a license to sexual debut. There is need for provision of key information to ensuring that parents and guardians understand the rationale for vaccinating at a young age.

2.2.10 Faith in Doctors

Another important theme that emerged from the literature was faith in Doctors (Ogilvie et al., 2007). Some parents felt the HPV vaccine should not be accessed anyhow but should be recommended by their doctors. Therefore, having their doctors recommend the vaccine increased

the likelihood of vaccination (Trim et al., 2012). In a study on 'African-American parents' attitude towards HPV vaccine', 70% of parents indicated that they generally do what their child's doctor recommends (Thompson et al, 2011). Such parents probably look up to the doctor to recommend the appropriate age for the vaccine as well.

2.2.11 Setting

Setting was another factor that affected acceptability of the HPV vaccine. From the literature reviewed, schools were identified as the best place to do the vaccination from (PATH, 2009; Brabin et al., 2011; Fregnani et al, 2013). The popular argument for this was that it would be easy to reach a large proportion of the target girls in schools (Fregnani et al., 2013). In addition, girls would be more comfortable in a familiar school setting (PATH, 2009). The vaccination in schools was mostly done by grade because vaccinating by age would be logistically challenging. In Brazil for instance, it was the grades 6 and 7 that were targeted in private and public schools (Fregnani et al., 2013). In Rwanda (Binagwaho et al, 2012) only grade 6s were considered. In Tanzania (Watson-Jones et al, 2012), it was the grade 5s that were considered.

Setting however seemed to have its own challenges. Teachers complained of wrong timing of vaccination in schools. They felt the health workers were wrongly advised to come at certain times of the school calendar, especially the early months (PATH, 2009). This could be that the schools were disturbed in their operating hours. We can infer from this that grassroot teachers were not actively involved because if they were, they would be better placed to advice on such logistics. Surprisingly, in Brabin's study, nurses expected schools to take some responsibility for ensuring good uptake and were frustrated when help was not forthcoming (Brabin et al., 2011). Teachers were also displeased that health workers were paid for their involvement in vaccination outreach while teachers were not. This to some extent made them to be irritable even on issues such as littering the school compound after vaccination (PATH, 2009). Some parents and girls, in a research by PATH, were not supportive of the school setting as a vaccination site for safety reasons. They preferred the hospital because hospitals were well equipped in case something went wrong such as a needle breaking in one's arm (PATH, 2009).

As has been seen, there seemed to be a lack of cooperation between schools and health workers. It is this lack of synergy in the school setting between the health workers and the teachers that to some extent made acceptability of the HPV vaccine difficulty.

Summary

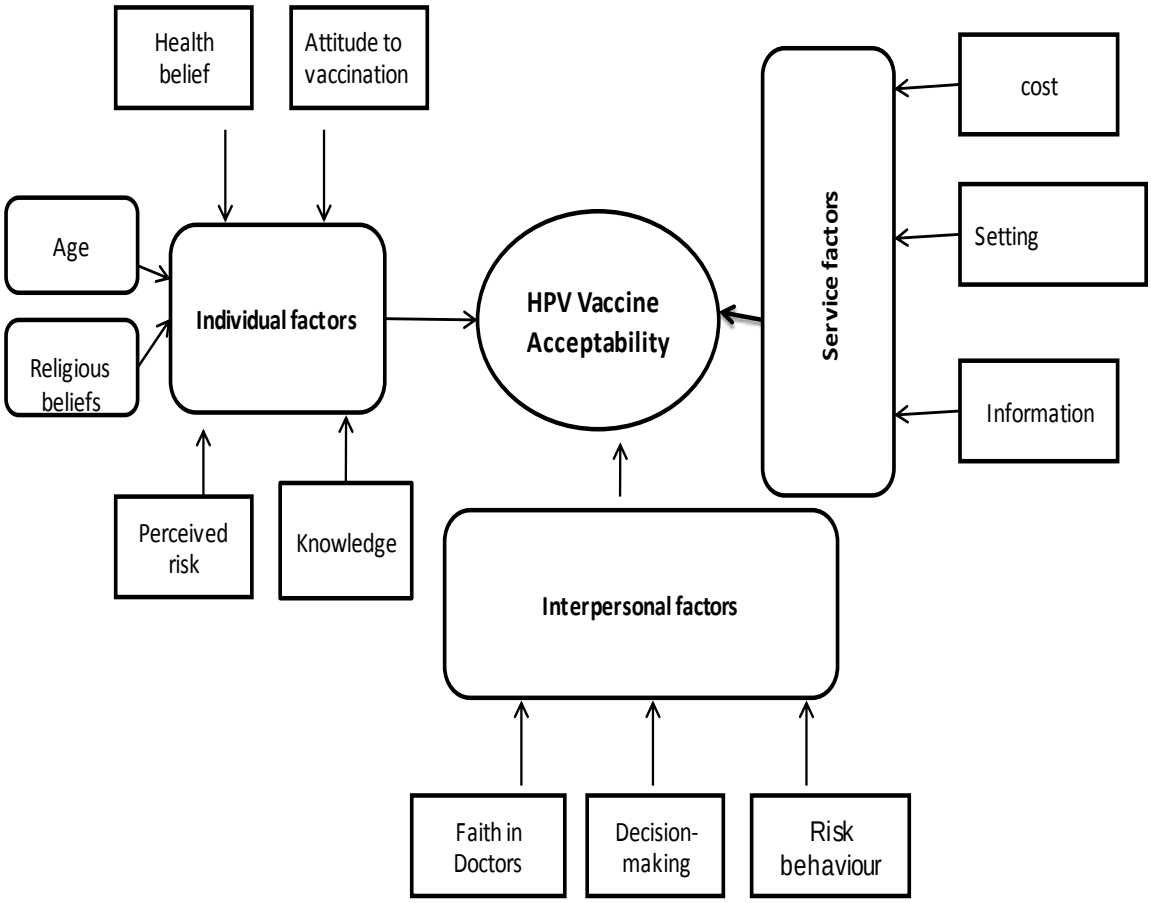
From the literature reviewed, it is clear that without adequate knowledge on HPV and its vaccine, people are bound to make decisions based on behavioural factors. Thus participants from the studies were basing their decisions of vaccinating against HPV or not on factors such as age, beliefs, attitude etc. it is thus important to avail the needed knowledge to the public so that they are fully prepared before embarking on such programs.

The HPV vaccine is currently available for international distribution. There is need for a research on HPV vaccine acceptability and delivery to understand how best to deliver this vaccine to adolescent girls. In so doing, there will be an increased uptake of this prophylactic prevention to reduce STIs and cervical cancer in adolescents worldwide.

2.3 Conceptual Framework

This is an illustration of the main issues highlighted in the literature concerning factors influencing acceptability of the HPV vaccine. From the literature reviewed, three broad factors were observed into which the different themes identified could be categorised. These are: individual factors, interpersonal factors and service factors. Individual factors comprise knowledge, health belief, attitude to vaccination, religious beliefs and perceived risks (Dempsey et al, 2006; Bair et al, 2008; Trim et al, 2011; Remes et al, 2012; Cunningham et al, 2015). Interpersonal factors include faith in doctors, decision-making and complacency effect (Waller et al, 2006; Ogilvie et al, 2007; Thomas, 2008; Allen et al, 2010; Thompson, 2011). Service factors include cost, setting and information (Agosti and Goldie, 2007; Brabin et al, 2011; Fregnani et al, 2013; Ezenwa et al, 2013). These, as observed from the literature, affected acceptability of the HPV vaccine. It is from these factors and themes that the conceptual framework was derived.

Fig.1: Conceptual framework on the acceptability of the HPV vaccine



2.4 Research Question

What are the factors that influence acceptability of the HPV vaccine in Lusaka, Zambia?

2.5 Study objectives

2.5.1 Main objective:

To assess acceptability of the HPV vaccination of Zambian primary school girls in Lusaka.

2.5.2 Specific objectives

1. To determine individual factors that would influence HPV vaccine acceptability.
2. To describe the interpersonal factors that may affect acceptability of the HPV vaccine.
3. To assess service related factors in the delivery and access of the HPV vaccine.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study design

This study employed a qualitative research approach. Qualitative research employs an interpretive and naturalistic approach, which emphasizes the understanding of the meanings people attach to the phenomena under study. Qualitative research employs a range of disciplinary perspectives, approaches, methods and techniques to better understand and interpret the phenomena under study (Denzin & Lincoln 1998; Creswell 2013). Qualitative researchers have generally perceived 'reality' as socially constructed and could not be understood by simply measuring remotely and independently from phenomena (Denzin & Lincoln 1998; Creswell 2013). A qualitative research was thus the most appropriate for this study because it aims to explore participants' perceptions.

Of the various types of approaches to qualitative research, a case study was used in this study. This method involved an up-close, in-depth, and detailed examination of a subject of study (the case), as well as its related contextual conditions (Creswell, 2013). A case study was used because the study aimed at exploring causation in order to find underlying principles on acceptability of HPV vaccine (Mills et al., 2010). The study employed Focus group discussions, In-depth-interviews and Key informant interviews. The interviewer outlined a series of open-ended questions and encouraged research participants to explore the issues of importance to them, in their own vocabulary, generating their own questions and pursuing their own priorities.

3.2 Study setting

The study took place in the district of Lusaka. The district was selected purposively considering the introduction of the HPV vaccine in the district on a pilot basis. Two schools, Kalingalinga primary school and Kings Highway School were selected purposively for the study because they were part of the pilot study. Kalingalinga primary school is a government school having most pupils from the local community of Kalingalinga. King's Highway SDA School is a private school with most of its population drawn from Seventh Day Adventist members.

3.3 Study Population

Maximum variation was used in coming up with the study population. This involved searching for individuals who covered the spectrum of positions and perspectives in relation to the phenomenon- HPV vaccine acceptability. This spectrum of individuals consisted of pupils, being the target group of the vaccine; teachers, because these interact with the pupils concerned; parents, because of their influence at home which can work for or against acceptability of the vaccine; Health workers of health facilities (Kalingalinga, Mtendere health centres and Lusaka District Medical Office), as these were involved in administering the vaccine. In addition, media discourses (Online media) from anonymous bloggers were used. Online media was used because of its interactive nature with anonymous bloggers. Lusaka Times was chosen in this case because it covered the HPV vaccine story. The bloggers' comments on the stories on HPV vaccine were reviewed within a space of time of eight months. Online media data was not necessarily limited to Lusaka but it provided powerful triangulation data. This population was chosen because it has key stakeholders in implementing the HPV vaccine. Table 1 summarizes the participants in the study.

Table 1: Study participants

Source	Method	Number of persons	Category of participants
Kings Highway School	KII IDI IDI FGD	2 3 2 10	Teachers Parents (1 father; 2 mothers) Vaccinated girls Non-vaccinated girls
Kalingalinga Primary School	KII IDI FGD FGD	1 3 10 8	Teacher Parents (1 father, 2 mothers) Vaccinated girls (morning class) Vaccinated girls (afternoon class)
Kalingalinga Clinic	KII KII	1 1	Sister-in-charge- MCH Community Health Worker
Kalingalinga Community	KII	1	Community leader
Mtendere Clinic	KII	1	Sister-in-charge- MCH
Lusaka District Medical Office	KII	1	Officer in-charge of immunization programs
Online media (Lusaka Times)	Social Media analysis	52 comments	Bloggers

3.4 Sampling procedures

Purposive sampling was used to select participants that had characteristics that were relevant to the study objectives. Pupils who accessed the HPV vaccine as well as those that did not, were purposively recruited from the two schools (Kalingalinga and Kings Highway Schools) with the help of teachers. Parents of girls in the target group were also purposively selected with the help of teachers in the case of Kings Highway School, and the clinic in the case of Kalingalinga primary school. Being a qualitative study, both those pupils who accessed the HPV vaccine as well as those that did not were included in the study in order to have a comprehensive view of the factors that shape acceptability or non-acceptability of the vaccine. However, pupils who were new and were less than three months in school were excluded together with their parents, as chances were that they had little or no idea of the HPV vaccine dynamics in these schools. In addition, nurses and Community Health Workers directly involved in the provision of the HPV vaccine were interviewed to get their views on the acceptability of the HPV vaccine.

3.5 Data collection

The data was collected using In-depth interviews, Focus group discussion, Key informant interviews and Social media. The first site where data was collected from was King's Highway SDA School. Here, a Key informant interview with a grade 4 teacher was first conducted to hear the issues and concerns of the girls that were in the target group. This provided a foundation for a Focus group discussion with the concerned girls. The same procedure was followed at the other site, Kalingalinga primary school.

3.5.1 Focus Group Discussions

Focus group discussions were chosen because they have a way of revealing social processes and the ways in which these processes are collectively shaped (Denzin, N. K. & Lincoln, Y. S. (Eds.), 1998a) The participants were the girls that were in the target group. Three FGDs were held; two with Kalingalinga primary school (one with a morning class and another one with the afternoon class), and one with King's Highway SDA School. The FGDs at Kalingalinga Primary School were with the vaccinated groups as all the grade four girls had received the HPV vaccine

at that school. The FGD at King's Highway SDA School was with the non-vaccinated group as the majority had not received the HPV vaccine at that school. Only three girls from Kings Highway SDA school had received the HPV vaccine, out of which two were interviewed for the study.

Each Focus group discussion was conducted by one moderator. This was digitally recorded. The moderator led the discussion and ensured that all topics were covered in the interview guide. A note-taker assisted with the facilitation of the group as necessary. The note-taker also took general notes on the content of the discussion, which helped in determining emerging themes. Each Focus group discussion lasted about an hour.

The FGDs were held at the school premises. At King's Highway school, the FGD was held in the school computer room. This was the most conducive place at that moment. One FGD at Kalingalinga primary school was held in a classroom that was not in use at the time. The classroom was quiet and conducive. The other FGD at the same school was however held outside on the school premises as all the rooms were in use. This brought a challenge of the participants not concentrating as some of their friends (who were not in the FGD) were watching them from afar. This was handled by shifting to a secluded area within the school premises, away from the other pupils' stare. Other challenges faced with the FGDs included pupils not being too free to talk about issues of sex. This was handled by reminding them that the interviewer, note-taker and the pupils were all 'girls' and no boy was nearby to eavesdrop. They were also assured of confidentiality. The interviewer also tried to be as friendly and open-minded as possible. As a result, the pupils eventually began to open up and talk freely. Another challenge faced with the pupils was that of attention span and level of participation. These reduced towards the end of each interview. The level of participation was handled by constantly reminding the pupils that the information they were providing was of utmost importance to the nation, and thus were urged to actively participate. The aspect of attention span was dealt by reassuring them that the interview would finish soon. In addition, the girls seemed to be ignorant on the subject matter and this to a greater extent compromised their participation. This was handled by intermittently educating them on areas they lacked knowledge.

3.5.2 In-depth-interviews

In-depth interviews were chosen because they give detailed information on factors influencing acceptability of the vaccine. The participants under this method included the two of the three vaccinated pupils at King's Highway SDA School; three parents from Kalingalinga community, of which all of them had their daughters vaccinated; and three parents from King's Highway SDA School community, of whom their daughters were not vaccinated. Questions were asked around the HPV vaccine acceptability and participants were free to express themselves.

Focus group discussions with girls and In-depth interviews with parents helped to guide the interview questions for Key informants.

3.5.3 Key informant interviews

These were with people who have a concern on HPV vaccine. They were useful in the understanding of community perspectives. The participants under this method were drawn from different disciplines ranging from schools, health organisations and communities. The idea was to have varied views from experts in trying to understand HPV vaccine acceptability. In this light, concerns from parents (in the IDIs) and girls (in the FGDs and IDIs) were incorporated in a quest to get clear information.

In all these methods, a semi-structured guide with mostly open-ended questions was employed to aid the collection of data. Data collection and preliminary data analysis was a cyclical process: data collected informed ensuing interviews and data collection was concluded when no new information emerged, a stage called data saturation. In this process, interview transcripts, field notes and tape recorders were used as tools.

3.5.4 Social media

Media discourses from online media, specifically Lusaka Times, were used. This is because the media had been publicizing this issue and it had attracted comments and reactions from the public, which hinge on acceptability issues. All the comments were included in the analysis and these helped triangulate the findings obtained from the FGDs, KIIs and the IDIs to assess

similarities and differences. This involved a new review to ensure the integration and synthesis of data from the different data collection sources through examining and comparing the different data sets with the aim of exploring the material's validity.

3.6 Data Management and Analysis

All interviews were recorded digitally and later transcribed verbatim. Analysis was manually done and started while in the field. Thematic Framework Analysis, which involved identification of common themes and issues, was used to analyze data. Thematic Framework Analysis was used because it is good for implementation research or programs that are being rolled out, as it is less theoretical (Huberman and Mile, 2002).

The first stage was familiarisation. This was the process of gaining an overview of the collected data. It involved immersion in the data through reading and re-reading of transcripts.

After familiarisation came the generation of codes. A code is a word phrase or sentence that represents aspects of a data or captures the essence or features of a data (Saldana, 2013). The coding process involved matching of codes with segments of text/informant statements selected as representative of the code (Ritchie, 2003). During the coding process, substantial emphasis was placed on retaining the original meaning of what was communicated by the informants.

The next level involved searching for themes among codes. The first step in this level was categorisation. This involved grouping the coded segments into 'subthemes' based on similarity of content. This was done in order to reduce the number of different pieces of data in the analysis. In this light, similar codes were grouped together to form categories.

The categories of content were evaluated to assess if generalizations could be made. Thus, major themes were developed by interpreting the categories for their underlying meaning. Themes in this case were the higher level of categorisation that were used to identify a major element of the entire analysis of the data. A theme can thus be said to be an outcome of coding, categorisation and analytic reflection (Saldana, 2013). Interview excerpts were used to illustrate the themes.

By using this analytical strategy, participants' perceptions were explored as well as the broader social environmental context that may influence them. A summary of the relevant concepts is shown below.

Table 2: Factors and themes

Major factor	Themes
Individual	The role of knowledge in shaping acceptability of the vaccine
	Perceived risks and benefits of the vaccine
	Attitude towards the vaccine and compatibility with personal values
	Fear of injections and acceptability of the vaccine
	Girls perceived as too young to understand the vaccine
Interpersonal	Faith in doctors/God and acceptability of the vaccine
	The role of parents in shaping acceptability of the vaccine
	Fear of cervical cancer and uptake of the vaccine
	The role of peers in shaping acceptability of the vaccine
	Community influence and uptake of the vaccine
	Concerns about the vaccine and acceptability of the vaccine
Service	Eligibility to the vaccine
	Compliance and vaccine acceptability
	Affordability and uptake of the vaccine
	Provision of the vaccine
	Fear of injections and acceptability of the vaccine
	Setting for providing the vaccine and its acceptability

Although, the analysis is presented like a linear process, it should be emphasized that it involved a continuous shifting back and forth between the different data sets as well as between the participants' narratives and the researchers' interpretation of the meanings of the material (Chapman, 2002).

3.7 Ethical considerations

The study was submitted to Excellence in Research Ethics and Science (ERES) for ethics clearance and the reference number is 2014-May-017.

3.7.1 Respect for persons and confidentiality

A written consent was given to key informants and the parents of the pupils concerned. Only the pupils whose parents/guardians gave consent were interviewed. In addition, assent was obtained from the concerned pupils. Both the consent and assent forms had an information sheet attached. In the case of pupils, consent and assent were sought a week or two prior to the interview. This was done to give them ample time to make an independent decision without pressure. Obtaining consent and assent was important in this study for the sake of treating the participants justly; respecting the participants' basic right to autonomy; as well as encouraging active participation of participants (Levy et al., 2003).

Permission to use the tape recorder was sought from the respondents. Participants were assured that all information they gave would be treated with utmost confidentiality and that they would remain anonymous. In this regard, it was ensured that minimal personal data was collected on the participant especially geographical description. In the analysis and writing of the thesis, no names were used. To maintain privacy, all electronic data in a computer were stored on a password- protected computer with access only restricted to the researcher (MPH student).

3.7.2 Beneficence

Respondents were assured that no harm would be done on them as there were no risks from this study, apart from the likelihood of sharing confidential or personal information by chance or feeling uncomfortable talking about some topics, in the case of the pupils. These risks were

tackled by encouraging and assuring the participants that all information from the interview would be kept confidential and that they had the right to withdraw from the interview or not talk about things they were not comfortable with. In the case of the pupils, apart from being assured of confidentiality, they were also urged to be as free as possible as the researcher was a female like them. The researcher also tried to be as friendly and open-minded as possible. This helped to remove the social barriers that the pupils might have anticipated. In terms of benefits, the girls were educated on the subject matter as they had little or no knowledge about the HPV vaccine and cervical cancer. As such, the interviewer, after finding this inadequacy, began each session by educating the girls on HPV, HPV vaccine and cervical cancer to create a platform for the interview questions.

There were no direct benefits for the other participants but rather, their participation contributed to scientific knowledge.

3.7.3 Justice

All respondents were availed with information of how they had been selected. This helped in reducing uncertainties and answering questions such as 'why me and not him/her?' which the respondents may have had. Respondents were given information regarding their right to quit the study anytime and to submit their complaints to the authority and even to the researcher.

In the case of the pupils that participated in the FGDs, the participants were selected fairly. There were a variety of children that represented the distinct realities of the more powerful and less powerful groups (Schenk, 2005).

Ethical clearance was sought from Excellence in Research Ethics and Science (ERES). Approval was also obtained from the District Education Board Secretary (DEBS) office, Lusaka District Medical Office and health facility authorities.

3.8 Dissemination of results

These results will be disseminated to the Ministry of Community Development Mother and Child Health (MCDMCH) and the two schools where the study was conducted. In so doing, confidentiality will be considered.

CHAPTER FOUR

4.0 Findings of the study

This study set out to assess acceptability of the HPV vaccine. The term acceptability in this study is defined as willingness to use the vaccine, support of its use, procedures, processes and context. The study identified individual, interpersonal and service related factors that might influence HPV vaccine acceptability.

4.1 Individual factors

The first objective of the study was to find out the individual factors that would influence acceptability of the HPV vaccine. The themes that emerged from the data under individual factors were the role of knowledge in shaping acceptability of the vaccine; perceived risks and benefits of the vaccine; attitude towards the vaccine and compatibility with personal values; fear of injections and acceptability of the vaccine and girls perceived as too young to understand the vaccine.

4.1.1 The role of knowledge in shaping acceptability of the vaccine

Knowledge about cervical cancer and HPV vaccine affected acceptability of the vaccine in that people made decisions to either accept or reject the vaccine based on the knowledge that they had on the subject matter. Generally, there seemed to be a lack of knowledge on cervical cancer and HPV vaccine among the people interviewed. This lack of knowledge influenced acceptability as people either blindly accepted or shunned it altogether.

Whereas key informants had some knowledge about cervical cancer and HPV vaccine, there was little or no knowledge of cervical cancer and HPV vaccine among the pupils and parents. There were many misconceptions among the pupils interviewed on the transmission and prevention of cervical cancer as evidenced from this part of the conversation,

M: How is cervical cancer transmitted?

R3: Sharing one injection with one who has cervical cancer.

R5: Touching blood of one with cervical cancer.

R9: When you don't have blood in the body, at times they confuse by getting blood with cervical cancer and then they give you [blood transfusion].

Similarly, most pupils knew neither HPV nor HPV vaccine as shown below,

M: What is HPV?

(Silence)

M: What is the name of the injection which you were given?

(Silence)

M: What was it for?

All: For cervical cancer.

Most parents and pupils did not know what the vaccine was called apart from knowing that it was a vaccine to prevent cervical cancer. For example, one of the parents to the pupils eligible for the vaccine indicated that, "*I don't really know, I just hear HPV, HPV. I don't even have interest in that" (parent).* Some parents knew cervical cancer was common in the sexually active; hence, wondered why it was being given to girls that young who were not sexually active yet. This influenced acceptability as some of these parents completely shunned the vaccine due to ignorance. Others decided to try it because they knew cervical cancer as a deadly disease and feared to experience it.

Others had some experiential knowledge having had somebody from their family suffer from cancer. These knew how cancer affects a person and so they willingly accepted the HPV vaccine.

Ok like on age, me I got surprised. Because I thought it were just we the elderly ones who like sleeping with men. But since them they said no, it's to protect the children, meaning they know why. However, it really surprised me. So now, after asking around, I learnt that it protects (parent).

One parent thought cervical cancer was hereditary and that if a child got it from the mother, it would manifest itself by age 9/10. This parent did not understand why her child should be vaccinated when she showed no signs of cervical cancer.

> If it is to say they got the infection from you the mother, meaning it is a long time ago. If it were showing, it would have shown (parent).

As has been shown, people seemed to lack accurate knowledge on cervical cancer and HPV vaccine. This affected their decisions to accept the vaccine or not as these decisions were based on what they knew.

4.1.2 Perceived risks and benefits of the vaccine

Perceived risks and benefits also played a role in the acceptability of the HPV vaccine. Generally, those who perceived some benefits found the vaccine acceptable compared to those who perceived some risks. Parents were of the view that the girls had equal chances of having cervical cancer or not having cervical cancer. They attributed this to the times that they said had changed as girls started indulging in sex at an early age, hence the need for the vaccine. As this parent put it,

> These days' girls get sexually active at a very early age. Of course, it is wrong for them to indulge in sex at a very early age but this is where we are. So, if we prevent it, the better (Parent).

Based on the concerns of early puberty and potential early sexual debut, some parents decided to have their daughters vaccinated against HPV. Despite this, other parents and girls were not willing to access the vaccine as they were not sure of it. As one parent said, "*It's just a trial. It may work, it may not work. So it is not safe (Parent).*

On the other hand, there were perceived benefits of the HPV vaccine such as prevention of cervical cancer, which was considered to be deadly, as well as strengthening immunity to diseases. It is these perceived benefits that made girls to be willing to access the HPV vaccine. Here is part of conversation from an FGD with girls, which illustrate the point,

M: How can HPV vaccine help someone like you?

R3: So that you do not fall sick anyhow (10-year-old vaccinated pupil).

R2: For us not to get sick of cervical cancer (9-year-old vaccinated pupil).

R1: Not to have cervical cancer because it is a deadly disease. When we start getting sick, we will be dying (10 year old vaccinated pupil).

People seemed to have perceived risks of cervical cancer. This determined their accepting or not accepting of the HPV vaccine.

4.1.3 Attitudes towards the vaccine and compatibility with personal values

Attitude towards vaccines played a big role in the acceptability of the HPV Vaccine. People who were positive towards vaccines easily accepted the vaccine compared to those that were negative to vaccines. Those against vaccines were mostly because of a bad experience with vaccines. These said vaccines had adverse effects and worsened one's health. Reference was often made to the previous measles vaccine which left a number of children with measles; Polio vaccine which made many people to be disabled; Bilhazia intervention which saw children vomiting, developing red, watery eyes, feeling weak e.t.c. One key informant had this to say,

> And you know, there was a time when these health people came here to vaccinate children against…was it measles or something? And after that a number of children developed rash, there were a lot of problems. They developed rash, you know they had complications. That's the time when my daughter had a rash. That rash was not infectious, it wasn't contagious, but you know it troubled her, for over 6 months. And from that time, a number of parents have withdrawn because they are saying; whoever wants to try comes to Africa to try their vaccines and so on and so on, so we would rather not be a part of it. And I think that has affected this one, the HPV (Teacher).

Similar sentiments were mentioned by pupils that did not receive the HPV vaccine. Most of them still had unpleasant memories of the past measles vaccine which was given to them at school.

They claimed the vaccine left them with Measles, and feared the HPV vaccine might also leave them with HPV. Here is a part of the conversation from the FGD with the non-vaccinated girls:

> M: Why did you not get vaccinated against HPV?
>
> R6: At my old school they gave me a vaccination for measles. Then some few days when I closed school, I got sick of the same measles. That's why my dad refused me to get vaccinated.
>
> M: Ok. So you think it can be the same with HPV?
>
> R6: Yes.

It was such experiences that made some people to be negative about vaccines. These people thought vaccines were sent to Africa to be tried on blacks before validating them to be safe. They further argued that Africa was a dumping ground for all things that had been rejected in the West. One blogger on online media brought out this issue,

> As usual using Africa as a dumping ground. I still remember in the 80′s how they sent us expired baby formula and expired birth control pills (Lusaka Times, August 16, 2013, 15:19 pm).

Parents were also negative about vaccines and termed the HPV vaccine as 'just a vaccine'. The same was the case even among some medical practitioners, who shunned the HPV vaccine saying they were just trials being done on Africans. One parent who was a nurse cautioned people not to trust anything coming from the Western countries. However, there were still others [nurses] who supported the rollout of HPV vaccine and made sure that their girls received the HPV vaccine.

On the other hand, there were some parents whose attitudes towards the HPV vaccine changed after receiving more information about it. These started accessing the screening services and encouraged their daughters to seek the HPV Vaccine and their sons to go for Male circumcision, in a quest to protect their families from cervical cancer.

> …even themselves they've now come up to, like bring themselves to come and test for cervical cancer and then they are also encouraging their men and their boys to come for

> male circumcision. So actually there where they do cervical cancer screening, they've also seen a huge turnout of mothers coming forward, yeah, as well as we are giving the babies their vaccine and then others those ones who didn't, who had initially refused their babies to come, we have seen them trying to come back saying can't you give my child now (Nurse).

Depending on one's personal values, attitude towards the vaccine differed among the people interviewed. This affected acceptability of the HPV vaccine as these people would only accept the vaccine if it was compatible with their values.

4.1.4 Fear of injections and acceptability of the vaccine

Fear of injections was another thing that affected acceptability. Some pupils, despite being eligible to get the vaccine did not access it because of the fear of pain from the injection. Most of these girls absented themselves from school to avoid the injection.

> Because some children do not like injections, they just absent. So we need to make a strategy. If we inform them, they do not come. Find out from the parents, 'No, she refused because she doesn't want to come for injection' (Community Health Worker).

This fear of injections was worsened by seeing their colleagues who were receiving the vaccine cry from the pain of the injection, and by the experiences of injections, which some pupils referred to as having needles that were big and sharp, as this girl said, *"Because I imagine it very big and the needle is very sharp (colleagues agree) (9 year old non-vaccinated pupil)"*.

Some children however, after being talked to and being educated on cervical cancer, had braved themselves and stepped up to the challenge. As one parent narrates,

> My child had asked, 'Now mummy, we were told they want to vaccinate us against cervical cancer, what and what', she had brought the paper. So, first day she ran away. Then her teacher called me saying, 'You daughter here has run away.' 'Why?' 'It's the injection'. So I told her to say, 'I'll talk to her. Tomorrow, she'll come.' So I sat her down and told her. She had agreed and went to be vaccinated.

All these things worked together and either affected or enhanced provision, ultimately influencing acceptability of the HPV vaccine.

4.1.5 Girls perceived as too young to understand the vaccine

Despite some people being in support of the age at which the HPV vaccine was being administered, there were also some people who were concerned about exposing the girls to the information of cervical cancer and HPV vaccine. They argued that the girls were too young to understand it, and in an effort of trying to make them understand, one risked insulting which was not morally right.

Other parents however, argued that the girls needed to have this information for them to be aware of HPV and cervical cancer because they reached puberty and became sexually active at an early stage.

> ... except that you know these are young girls, again as you are trying to go in detail, you start mentioning things which they are not supposed to hear. So it's really tricky. And then, this is a low class community compared to these other residential places. So you find that here, for you to make them understand, you end up insulting (Health worker).

Some parents worried about the possible risk behaviours resulting from the vaccine, that is, the vaccine giving the girls a false sense of protection thereby making the girls to start engaging in behaviours that would threaten other aspects of their health. These parents argued that there was an implicit encouragement of sexual activities when educating girls of that age about sexual matters, as they would feel they have been protected. Such parents believed preaching abstinence was the better option.

> ...when you look at that age group, and you are explaining to them, you do not know what you are putting into those children's minds. Are you telling them that it is ok; you can go ahead and be active sexually because there is this preventive measure that the ministry has put in place? Or how then in terms of morals of the children? Are you going to help them to realize that look, this is not right. I do not need to be sexually active because I am not supposed to except the time I am married. (Teacher).

This however was ruled out by those supporting the vaccine saying that the vaccine could not have complacency effects on the girls unless they were not given full information about it or rather were not told the truth. They argued that girls, in any case, were supposed to be even more careful. As this parent argued,

> Ah, no. then that's, I do not think it would. In fact, it is supposed to even protect them even more. They are supposed to be even to be more alert to say oh, so I do not think so.

Other parents thought risk behaviours depended on how a parent raised his/her children. These parents thus encouraged their fellow parents to be educating their adolescent girls on matters of sexuality, telling them the dos and don'ts of life. One parent said it was important to preach abstinence to children because things could still go wrong even after receiving the HPV vaccine, as was the case with HIV/AIDS and condoms.

> It depends with the way you have raised your children, that is what I can say. Because that cannot be an advantage to say I am now protected, so now let me start doing this, no. it depends with the way you have raised the children. For example, AIDS, you cannot say as long as I use rubber (condom), with a woman I have sex with. That one is not safe because you never know who else is sleeping with that woman. Because once you know that in future these things will be a problem, you just have to take care of yourself, what they call abstinence, you just take care of yourself until you grow up and have your own home (Parent).

When asked what they thought about the age at which they were vaccinated, most girls said it was ok as the vaccine was protecting their health and preventing them from acquiring a deadly disease in future, as exemplified below:

> M: Do you think the HPV vaccine should be given to young girls like you?
>
> All: Yes.
>
> M: Why?
>
> R1: Because it can help us.
>
> How can it help you?

R5: By not getting sick of cervical cancer

R3: So that we don't get sick of diseases… of cancer

R1: Growing up healthily

R2: Not growing up sickly

R7: To prevent cervical cancer so that when we grow up, we won't get sick.

There were different concerns on the age at which the girls were to be vaccinated. These concerns mainly hinged on individuals' beliefs that ultimately affected acceptability of the vaccine.

4.2 Interpersonal factors

The second objective of the study was to describe the interpersonal factors that may affect acceptability of the HPV vaccine. From the findings of the study, the following were the themes that emerged as affecting acceptability of the HPV vaccine at an interpersonal level: faith in doctors/God and acceptability of the vaccine; the role of parents in shaping acceptability of the vaccine; and fear of cervical cancer and uptake of the vaccine. Others included the role of peers in shaping acceptability of the vaccine; community factors and uptake of the vaccine; and concerns about the vaccine and acceptability of the vaccine.

4.2.1 Faith in doctors/God and acceptability of the vaccine

Faith in doctors affected acceptability. Some people were of the view that doctors are people entrusted with their lives, second from God. They had a lot of faith in doctors and said vaccines were needed to prevent diseases and keep healthy. As such, they were positive towards the HPV vaccine. As one parent said,

> We can say it is safe according to the doctor who knows well, because I cannot know in detail where and how it was manufactured. Because you cannot question a doctor to say,

> why are you bringing such things because he is a doctor! He has studied these things, he knows very well. So what he says is what to follow (Parent).

Another parent was of the view that it is better to listen to a doctor than to people because a doctor has knowledge on health issues and thus cannot bring something that can harm people. However, this was opposed by another parent who said that doctors have no much knowledge especially about patients. She said it were nurses, who interacted often with patients, that knew the patients very well and that could prescribe proper medication. She thus cautioned people not to trust in doctors very much.

> Doctors do not know patients very well. It's us the nurses who know what's good for a patient because we are with the patient throughout. Doctors just come to check and prescribe medicines. So, do not take everything that a doctor says as correct. Most of the time, they are wrong (Parent).

On the other hand, there were some people who believed that as long as one had faith in God, she would not suffer from any illness, including cervical cancer. As said by this pupil in an FGD, "*Some say that they are fake, others say that if you just have faith in God, you can't get sick" (10 year old vaccinated pupil).* This however was counteracted by one participant who said faith alone was not enough but one needed to act in order to see the results, as she said,

> We need vaccines. When I am sick, I should go to people who can help me. For example, when I encounter a lion, God will give me speed to run away. If you want to be rich for example, but you are just seated and not acting, it cannot happen. Or you want to pass exams but you are not studying, it won't work. Without effort, faith cannot work. Prayer without action is dead (Community leader).

As has been seen, people had different beliefs that influenced their decisions on HPV vaccine.

4.2.2 The role of parents in shaping acceptability of the vaccine

Decisions to either accept or not accept the HPV Vaccine were rooted in parents' beliefs and attitudes. Only a few girls went against the wishes of their parents by accessing the HPV vaccine without their parents' consent. Parents' decisions prevented some girls from being vaccinated

despite them wanting to be vaccinated. However, there were cases where a child would still go ahead to get vaccinated, as recounted by one of the health workers,

> No reasons, children were just saying that my parents said no. Then afterwards you start giving them. Then you will see even… if there is one, she could come and start whispering, 'No, my mother said don't give it to me'. Then you would say, 'What do you feel yourself?' 'No, me I want to have it, it is only that my mother was saying do not go and get it. Now I will go and tell her that no, I do not want to have cancer of the cervix (Health worker).

There were also situations where parents pushed their daughters to get vaccinated against their daughters' wishes as illustrated by this pupil:

> Some girls do it because their parents push them to do it, you know the way parents are, 'you should do this, you should do that; don't do this, you should do that'. So, they are scared inside they don't want to do it but because of their parents, they decide to do it (Non vaccinated pupil).

In addition, there were some parents who gave conflicting views to the child over the HPV vaccine, whereby one parent would allow the child to be vaccinated while the other would discourage them from getting the vaccine. This made it difficult for the child to decide whether to get the vaccine or not. One pupil narrated,

> My aunty came to our place and said that her children got vaccinated, but me I never got and my young sister. Then my mum said do not, when someone gives you a letter, like for vaccinating, do not give your dad. Your dad does not know about this, so you should come and give me because your dad thinks that this is just something for playing. My mum was very annoyed. So she told me that you should always be giving me (9 year old non-vaccinated pupil).

Parents played a crucial role in deciding whether their daughters should receive the vaccine or not. This affected acceptability of the vaccine as these decisions were usually dependant on parents.

4.2.3. Fear of cervical cancer and uptake of the vaccine

After receiving more information about cervical cancer and the HPV vaccine from the health personnel, most parents were willing to let their girls be vaccinated because they saw cervical cancer as a health problem. The girls testified that their parents used to tell them that cervical cancer was deadly, no wonder they were allowed to get vaccinated. As one girl said,

> Our parents used to tell us that cervical cancer is a deadly disease, that is why they allowed us to get vaccinated, because it is a deadly disease (10 year vaccinated pupil).

Other parents wished to be given the HPV vaccine too. When they were told they could not, they accessed the cervical cancer screening services in large numbers. They also encouraged their daughters to be vaccinated. This informant had this to say,

> …even the mothers now, we are asking them to come for screening. Because, the older ones were saying, 'Why can't you vaccinate even us?' We said, 'No. You what you can do is to come for screening. If we find that you have some cells, then we will treat you. We'll treat you according to whatever findings that we'll have.' So we are seeing more women going for cervical screening in our facilities, meaning they've gotten the information and they appreciate it (Key informant from Lusaka District Medical Office).

One key informant pointed out that cervical cancer was indeed seen as a health problem in Kalingalinga community. This was evident from the long queues of women that were going for cervical cancer screening at the clinic. She said this could have contributed to the high turn-up of girls accessing the HPV Vaccine in the community as assumedly; these girls were encouraged by their mothers.

> I think they are seeing it. Why I have said that, last time cervical cancer screening had started for the women. I was seeing queues here [at the clinic] for cervical cancer, to go and be checked. So I think that one is also contributing for them to be encouraging their children, go for this, get this. I think they are encouraging their children (Teacher).

Even the girls seemed to see cervical cancer as a health problem. As most of them disclosed, they were vaccinated because they did not want to have cervical cancer because it is a deadly disease. One of them said cervical cancer is worse than swelling of an arm (an effect of

injection), which most people fear, because an arm can swell and get back to normal but cervical cancer cannot be normalized. As she said,

> Cervical cancer is worse than the swelling of the arm. Because your arm can swell and get back to normal but cervical cancer cannot be normalized (9-year-old vaccinated pupil).

The fear of cervical cancer saw some women and girls accepting the HPV vaccine. This increased the turn-up of girls receiving the vaccine.

4.2.4 The role of peers in shaping acceptability of the vaccine

Peers' attitudes played a role in the acceptability of the HPV vaccine. Boys for instance were teasing girls that received the vaccine, perceiving them to be a lesser sex. In addition, these boys were mocking the girls saying they had been injected with Ebola (the HPV vaccine was given at a time when there was an outbreak of Ebola in West Africa) as this girl said,

> They laugh at us, that hahaha, she has been injected, she has been injected with Ebola, especially boys, they would be mocking you that they have been injected, us we do not get injected (10-year-old vaccinated pupil).

In addition, these boys used to mock the vaccinated girls that they would not conceive in future because of the HPV vaccine. This worried the girls to an extent that some girls decided to stay away from the subsequent vaccination days. This teacher reported,

> That is why some of them when they hear that we are going to have the vaccine, because we announce. They bring a letter today then you announce to them, 'You're going to receive vaccines on such a day.' The third one I announced, so they knew. Some were absent because the boys were teasing them: 'You won't conceive, you won't conceive'. The same misconceptions- you will not conceive. So as a result, even they are afraid. 'I shouldn't conceive?' (Teacher)

The vaccinated girls said after the vaccination, people treated them differently. Those who were not sure of the vaccine seemed frightened and thought the girls might die. Others avoided

fighting with the vaccinated girls for fear of hurting them on the arm. One vaccinated girl observed that there was a difference in the way her classmates treated her after receiving the vaccine. At home also, they were exempted from doing house chores as they were considered 'unable to' due to the numb arm. As one girl said,

> They used to say that stop I will do the chores for you. You will resume after your arm gets better (9 year old vaccinated pupil).

As can be seen above, acceptability of the HPV vaccine also depended on the treatment the girls got from their friends.

4.2.5 Community factors and uptake of the vaccine

The newness of the HPV vaccine precipitated rumours among people. These rumours also influenced acceptability of the vaccine. Some of them were rumours that the vaccine contained cervical cancer and that it caused infertility in girls that accessed it as evident from these participants. Here is what one parent said,

> Of course, like a girl child, she will not be able to bear children. In addition, she may have some side effects, like getting sick of the same cancer.

Some people associated the HPV vaccine with rumours about the Microbicide gel conducted in the Microbicide Development Program (MDP) 301 trial. The MDP 301 trial, as reported by the media, was rumoured to have caused the infection of trial participants with HIV (McCormack et al. 2010). Based on the rumour from the media, some people thought the HPV vaccine program was just a trial like MDP trial. Therefore, they were afraid of the end results as this community leader said,

> They want to kill our children, as they did in Monze/Mazabuka [MDP trial]. Of course it won't be immediately but after some years (Community leader).

Community or society has the power to influence decisions either positively or negatively. The people interviewed agreed that acceptability of the HPV vaccine was to a larger extent attributed to societal influence. The vaccinated girls interviewed, for instance, attributed the refusal of their

friends to access the vaccine to their parents and outside influence. Below is the excerpt from one of the FGDs held with the vaccinated girls:

> M: What prevents girls from being vaccinated?
>
> R8: They are afraid. They don't want because they believe the vaccine is fake. Some tell them that it is real, others that no it is not real.
>
> R6: Others are told to say, "oh, you should go, it is painful! Your arm will be swollen"
>
> R8: They lie to their friends that your arm will be swollen, you will have rash, you'll be sick.
>
> R7: That vaccines are not good, they just bring diseases.
>
> R3: Some don't believe that the vaccines are real since they are not told
>
> M: Told by who?
>
> R3: Their parents. If they were told, they would have agreed.
>
> R1: Others it is their parents that tell them that the vaccines are not real because when they vaccinate you, at times it's the ones that give you cervical cancer.
>
> R4: Others are told that don't get vaccinated, if you get vaccinated I'll beat you, you'll get sick.
>
> R8: They say that, "if you receive the vaccine, we'll beat you, you won't sleep in this house. You want to bring for us diseases."

Some parents learnt from the experiences of their friends who had their girls vaccinated against HPV and decided not to follow suit, as there were adverse effects. As this parent said,

> For me it is from the experience of the friends and they really influenced me not to go ahead and accept it.

Other parents said they could not be swayed by opinions or experiences of other people in the community because they have the information about cervical cancer. Instead, they said, they

could be the ones to positively influence people by telling them the dangers of cervical cancer so that they seek the vaccination. One of the parents said,

> No. Me they cannot influence me because I do learn at work from what happens and what I see, I know. So my friends can't tell me anything. I tell my friends to say people these things you are claiming to be bad are in fact good. Moreover, its benefits are these and these.

One parent pointed out that community or societal influence was rampant among women as they were the ones that remained at home, chatting, thereby influencing each other either positively or negatively. As he said,

> …us men it's not often that we find time to start chatting. It is women who are fond of chatting a lot. Maybe in some way, they are the ones who can have words of either encouragement or discouragement, with some saying you can take your child and others saying you should not, because the women are the ones that remain in homes. We men are often times away.

On the other hand, one parent (housewife) said her decision to get her daughter vaccinated was personal as she never discussed it with anyone nor sought anybody's advice.

Those in support of vaccines were not swayed in their decisions even after hearing negative rumours about the HPV vaccine. They maintained that vaccines were good as they protected people from different diseases. They therefore thought it was a good idea for the government to bring such a vaccine to protect the girls from cervical cancer. They said they had not experienced any adverse effects of any vaccine like some people claimed. This was a hot debate on online media as some people thought vaccines were poisons. Those in support counteracted as shown below,

> …saying "Vaccines are poisons" is just wrong. Some have worse side effects than others, or higher rates of side effects, or are less efficacious, but millions of lives have been saved through vaccines (Lusaka times, August 18, 2013 at 6:53).

4.2.6 Concerns about the vaccine and acceptability of the vaccine

A number of concerns were raised over the HPV vaccine. There were some participants, especially parents who did not understand why such a vaccine should be given to girls in grade four, who had not even started indulging in sex yet. From what they knew, cervical cancer was common in women that were sexually active.

> They are not really sure why it [HPV vaccine] should be given to a girl and how you can expect a girl that age to have cervical cancer. Because from their understanding and my understanding also is that it's only one who has been sexually active. And you know sexually active in an extent where you are talking of maybe the married people or those people that are actually, you know sexually active on a, more like their livelihood kind of, you know. But for a 9 year old child, you are wondering, how active will this child be to be subjected to this vaccine? (Teacher)

Some participants were also concerned about girls who were already sexually active but received the HPV vaccine. They wondered what would happen to such girls.

> Our children seem to be hyperactive with these, they are just driven anyhow carelessly with sex. What will be the result of that vaccine? Is it going to work or not work? I don't know their combination, if somebody has been already indulging into sexual activities, and then is vaccinated against it. I do not know what would be the result of that to a child who has been or may be already engaging themselves in sexual activities (Community leader).

This concern also came-up on online media by bloggers who claimed that the HPV vaccine increased the risk of cancer among other effects, as this person wrote,

> Incredibly, the so-called cervical cancer vaccine Gardasil may actually increase risk of cancer for those who are previously infected with HPV and then get vaccinated (Lusaka Times, August 16, 2013, 6:42pm).

Some bloggers thus cautioned others to be careful,

> Warn your families, this vaccine is deadly. Just teach the young girls to abstain and practice safe sex. This vaccine has killed innocent children in the US (Lusaka Times, August 16, 2013, 2:36 pm).

Concerns were also raised for administering the HPV vaccine to girls without proper taking of medical history. This concern was also reflected on online media, as one person wrote,

> Why is it then that when vaccinating our children, we don't take each child as an individual case and find out more about them before giving them medicine [vaccines] just like it is when a child is brought with a headache or with stomach pains for example (Lusaka Times, August 16, 2013, 11:27 am).

Some people also questioned why they began this vaccine [pilot] on their girls and whether the vaccine had been tried elsewhere to prove its effectiveness before administering it on their children. As this Community Health Worker reports,

> They say that, 'Why did you start on our children? Did you start it somewhere else in other developed countries?'

Despite being explained to by the health personnel, there were still some people who did not know the criteria used in choosing Lusaka province as the pilot site rolling out HVP vaccine They thought if the vaccine was for the good of every girl child in that age range, then all eligible girls were to receive it, unlike confining it to Lusaka province. Such people were also suspicious of anything from the West, as one parent said,

> Why should they only be interested in Lusaka? There are also other kids elsewhere. So that is what brings in a little bit of question mark on the part of the parents. Why is it only being done in Chongwe? Then it means there is a donor who's interested in certain things. Because it is for the good of any child between the age of, is it 9-11? Then any child in Zambia is bound to have it. Then maybe it should be spread the whole country. Then, we would accept it.

Parents also questioned how the girls would get the feedback on the vaccine because by the time the girls started engaging in sex, they would have forgotten that they had received such a vaccine. To this, the health personnel assured them that that was why the girls were given a card,

showing that they had been vaccinated against HPV. The card was for reference purposes as one key informant put it,

> They are also querying on how it will reflect. How really are they going to get the feedback because by the time these kids will be growing up, maybe they will have even forgotten that they received such (Health worker).

One key informant was concerned about the lack of expiry date on the vaccine vials.

> … Then, we had asked why there was no expiry date on the vial because we were a bit concerned. Every vaccine is supposed to have an expiry date as well as manufacturing date indicated on the vial but this one [HPV] had no dates. So they told us that the dates were indicated on the boxes in which the vaccines came and not on the bottles (Health worker).

Amidst all these concerns, a health worker explained that vaccination of HPV was not mandatory. Girls that refused were not forced to accept. However, such girls were counselled.

> If the child says, 'I don't want to get the vaccine', we will not force because they have the right to refuse. We will respect their choice. However, we will counsel the girl (Key informant from Lusaka District Medical Office).

As has been shown, there were various concerns about HPV vaccine and these mostly hinged on safety.

4.3 Service factors

The third objective was to assess service related factors in the delivery and access of the HPV vaccine. From the findings, the following were the themes at service level that came up as having an effect on acceptability of the HPV vaccine: Eligibility to the vaccine; compliance; affordability and uptake of the vaccine; provision of the vaccine; setting for providing the vaccine and its acceptability.

4.3.1 Eligibility to the vaccine

Eligibility to the vaccine affected acceptability. To receive the HPV vaccine, there was a criterion to meet. A girl had to be in grade 4 and in the age group of 9-13 years. In addition, these girls needed not have had sex before if the vaccine was to be effective (WHO, 2011). To see to this, the health workers were advised to interview the girls before vaccination to find out if they had had sex before. If that was the case, such girls were supposed to be left out of the vaccination program as this teacher put it,

> They said, you interview them, though they cannot agree, to find out if they have not started having sex. If they have started indulging in sex, you have to leave them out. But if they haven't yet started having sex, that's the right time. A lot of grade four girls have not yet started having sex so you vaccinate them (Teacher).

This however was not strictly followed as the health workers vaccinated any grade 4 girl without establishing whether they had had sex before or not. Age also was not regarded much. What mattered was for the child to be in grade 4. This was especially so in government schools where a parent's consent was not always sought.

> ...But us we didn't detect somebody to say no we have a machine we want to find out whether you're a virgin or not. As long as you are in grade 4, whatever happened we don't know it but us it's just a matter of injecting every child who is in grade four (Community Health Worker).

In a private school however, parents were strict on the age and did not allow their girls to receive the vaccine if they were below the required age despite being in grade four. Age was thus a constraint in this private school as most of the girls were below nine as this teacher said,

> They are very few because of the age within those classes. When you look at that, the introductory letter, it is clear on the age, the minimum age that the girl should be. Therefore, it is only those parents whose children are that age and above that were given in that particular class.

This became a concern to some parents who wished for their daughters to be vaccinated. One key informant reported,

> Some parents were concerned, like in private schools. Because the grade 4s we had found in private schools, some were eight years, seven years. By the time they will reach nine, they will be in grade 5 or 6, meaning they will not get the vaccine. So their parents were asking, 'Can't we come to the clinic when the girl is 9 years to be given?'(Health worker)

Since it was not everyone that qualified to receive the HPV vaccine, acceptability was affected, as there were a good number of girls that wished to be vaccinated but could not because they were not eligible.

4.3.2 Compliance and vaccine acceptability

Compliance affected acceptability of the HPV vaccine. The HPV vaccine was a three-dose vaccine. For a girl to be fully protected, she had to receive all the three doses. However, not all girls received the three required doses. This was especially so with children who had transferred from schools where they received the first dose, to other schools. This was not much of a problem if the child was still within the catchment area as she would be followed-up. Problems arose if the child went outside the catchment area as no follow-up was made, as reported,

> You find that the number, you have maybe 10, the other time you go there, it's maybe less by two. You find that the child has been transferred to another school. If it's in our catchment area, we might locate the child. If they say that maybe this child is in another school maybe within the community we would follow them up and vaccinate them. Unfortunately, if those parents/guardians move out of the community, it was very difficult for us to locate them (Community Health Worker).

There were cases where some girls missed the second dose but still accessed the third dose. There was no follow-up made on the first and second doses, only on the third dose. As this key informant mentioned,

> They come termly, and to me it is not ok. Like the way I said, a pupil may come, first dosage she receives it, then the second one, she misses. Some missed the second. It is just this third one that I'm seeing them make a follow-up. For the second and even the first one there was no follow-up (Teacher).

One key informant also noticed this inconsistence and said they were advised to administer the third dose even to those that missed the second dose. As he said,

> We asked, what if this person comes for the first dosage, she misses the second dosage, then the third dosage. They said no, she could get the third dosage. If a child missed the second dose, then we will just capture her during the third dosage. Like the one we did last, we did the third dosage despite one missed the second (Community Health Worker).

This inconsistence was also evident among those pupils who came on transfer from other schools. These were given the HPV vaccine in the second round, despite missing it in the first round or given in the third round despite missing the dose in the second round. This was somehow attributed to the vaccine being restricted to Lusaka province. As such, there were concerns raised on whether every child would afford the three required doses if the vaccine were to serve the intended purpose. As this parent said,

> If the child is transferred? Then it will come to it not spreading to other provinces. Because if by now it had spread to other provinces, if the child took it in the second term in Lusaka, then the child will be able to meet it in the third term wherever the child is.

Absenteeism was another factor that made accessibility difficult. This was recorded more in private schools. This inconvenienced the health workers as they were made to go back now and again to capture the children that missed. One key informant complained,

> It is a very tiresome exercise especially in government schools, there is too much absenteeism. You could go in class, you are expecting to inject twenty girls, and you only inject maybe five or ten. Then you have to be going back every day to capture those who are remaining (Health worker).

In community schools especially, accessing all children for the second dose was difficult as some of the children stopped schooling due to family issues. This was more so with orphans. This delayed the vaccination process, as these children had to be sought out to complete the doses. The Community Health Worker illustrated,

> …you find that you are detained, second term you find that no, these two, the grandmother stopped bringing them to school. Maybe there is an issue of family problem

there, they stop coming to school. Yes. Maybe the caretaker used to be a grandmother, now she is unable to support, somebody takes them away, such things.

As can be seen above, compliance to the HPV vaccine proved to be a challenge due to a number of factors at play. This affected acceptability of the vaccine.

4.3.3 Affordability and uptake of the vaccine

Affordability of the HPV vaccine had an impact on the acceptability of the vaccine. The vaccine was offered free of charge to the pupils, as it was being funded by World Health Organization (WHO). As such, there was no cost of the vaccine on both the girls that received the vaccine and their parents. As one parent said,

> She just went there, they never said you bring that, no, you pay anything, no, I would lie. Or you do this or maybe after the vaccine she had maybe a temperature or what, nothing.

However, as one key informant cautioned, this (vaccine being free) might not be the case if it were to be rolled-out country-wide as there would be a number of costs to be covered. These costs would likely have to be covered by the government alone.

> So the roll-out of this program, they are making strategies to say how do we do it? Because even this program, it is being funded, because the teachers, people who are supposed to do this work are supposed to be paid. Community, the nurses, even the teachers. So they are making new strategies how to go about it. Because the nurses need to get an allowance to do it. Us also the community, we need to get an allowance. Now if we were to roll the whole country, they would use what amount? (Community Health Worker)

The study further revealed that despite bringing in this new program which offered the vaccine freely, there was no manpower employed to help in administering the HPV vaccine. It was the same health workers in the health facilities, in addition to their routine work, that were assigned to go to vaccination centres to sensitize and administer the vaccine. This proved to be a challenge as one health worker said,

> The provision can be improved if we can improve on human capital. Human capital is very important because we are straining the few who are there with too much work. They have to get to the centre, go to a school, go and vaccinate, come back and continue with the routine work. So, if we can improve on human capital, I think that will be very good. That will do us some good because right now we are limping (Key informant from Lusaka District Medical Office).

In addition, the study suggested that the pilot program cost some health workers, as they had to spend their own resources to make progress in the program. As revealed from the study, health workers administering the HPV vaccine faced challenges of transport and talk time. Below is the narration:

> When we were giving the first dosage, we had a bit of some challenges because you know, we are just being provided with fuel and then by the end of the day we need to use our own vehicles. So our challenge has been the transport. If we had transport from the district itself, not just providing fuel, that would have made our work easy. And then also communication, you find that during the first time and the second time, there was no airtime which was being provided. At least now, airtime was provided, though little but it helped (Health worker).

This impacted negatively on both health personnel and parents who attributed communication breakdown or delay in service provision to magic.

> If you don't have transport and then you delay a bit, as long as you told them, 'Oh your child will be vaccinated on a Monday,' then you don't show up on a Monday, they will start querying maybe they are trying to play magic, now how come they haven't come or how come they are changing dates. So there is that mistrust afterwards. But if you make an appointment then you go there, everything is usually ok (Health worker).

Affordability of the vaccine impacted negatively on the health workers especially, who had to use their own resources to make the vaccination possible. This in turn affected community acceptance of the vaccine as any breakdown in the provision of the vaccine was usually misinterpreted.

4.3.4 Provision of the vaccine

Provision of the vaccine influenced acceptability of the HPV vaccine. To provide the HPV vaccine, the Ministry of Health collaborated with the Ministry of Education. The study however showed that this liaison seemed to be only with school management as the grass root teachers were not incorporated at the beginning. As this study revealed, in as much as letters from the Ministry of Health were sent to the schools, these letters ended with the administration who never sought the advice of teachers actually dealing with these pupils. One teacher had this to say:

> Yes, they communicated there, with the administration, not us teachers. So they were supposed to communicate with me the teacher so that I know. Those people [health personnel] just came to inform me. Me I cannot refuse to say now you cannot vaccinate. They should have asked me as a class teacher, 'What time are you free or what time are you proposing for them to come and vaccinate your children?' I would have proposed my own time. Not whereby you get surprised that they are coming. You cannot send them back. The letter is received that side [administration] and you are just informed (Teacher).

The study further suggested that this poor communication had a negative effect on the program as the first time the health personnel went in schools, it was towards the end of the term. This resulted in missing a number of children to be vaccinated. However, as evidenced from the study, this was controlled in the second year of the pilot by going early in schools. This Community Health Worker reported,

> The first time when we did those dosages, we did not realize that we did those dosages two weeks when the schools were about to close so we had to miss some children. But the second year we realized that we need to do this immediately they open the school, we do the first dosage. Before they close, we have to do the second dosage. Also the third dosage before they close the third term.

In addition, the study pointed out that protocol was not followed as these health workers just went straight in classes where these girls were learning, unannounced, and started giving out the

vaccine in full view of others. This affected the concerned girls as no privacy was given. As this teacher complained,

> The other time it was not very conducive because we were not expecting them, I was in the middle of the lesson, then they just came. So we had to pause. They gave them that vaccine in full view of everyone else, the other pupils. Yeah and, I think they were a bit uncomfortable.

The study also pointed out that in the beginning, the health personnel thought the teachers were not being helpful, when the fact was that the teachers had no idea of what was going on. As such, they did not know what role to play. This health worker had this to say,

> On the schools at first the teachers were not helpful until when they were involved, that's when they started cooperating with us in our program. Um the time when you go in classes you find the teachers will go out then you will remain the health workers. Now you start, you know how girls can behave- noise, they will start jumping up and down. So when we complained, they said no, let us involve the teachers. Now we have a coordinator of HPV at schools. When you go, you talk to that teacher, then the teacher goes in class and collects all the girls. So we are with her until we finish our program (Health worker).

The Ministry of Health, as revealed by the study, realized that the teachers on the grassroots needed to be involved if the program was to work. The study further pointed out that teachers were given the necessary information and were integrated in the program. These helped prepare the girls for vaccination by educating them on cervical cancer and the HPV vaccine, as said below,

> At first last year, there were no, they didn't have enough information so, we said if they can incorporate the teachers, so that they can also know about the HPV vaccine, then start teaching in schools so that by the time us nurses are going there, the girls already have the information. So now we are working hand in hand with the grade 4 teachers (Health worker).

The study suggests that the ministry's liaison with schools differed in terms of sensitization. As mentioned in this study, brochures containing information on cervical cancer and prevention were given to girls in private schools. In addition, assent was sought from the parents of these girls.

> For the private schools also, because private schools are very few, we give them a consent so that parents should sign there after going through (Community Health Worker).

This however, as the study showed, was not the case with the government school. One key informant said this could be attributed to lack of stationary to cater for all government schools as they outnumbered private schools.

> Government schools, it is a bit challenging, but we are supposed to do it for every child despite, I know, maybe because of the stationary or the information (Community Health Worker).

This affected acceptability in the sense that parents that received some information had the opportunity to say yes or no, having weighed the costs and benefits.

> They gave us the information but it was not convincing enough (giggles). I think we already had preconceived ideas about it, so… (Parent to a non-vaccinated girl).

This finding was confirmed by this pupil who when asked why some parents still refused their girls to access the vaccine had this to say,

> …because they have seen these things that happened. Some of them watch CNN. So they have seen that these, um a nurse pricked this one and got sick, what about, they worry too much. What about if it happens to me? What will my parents do? (vaccinated pupil).

On the other hand, those without the information took the vaccination as a compulsory government program, and saw no harm especially after hearing of its benefits as said by this parent,

> It's a preventive vaccine, a prevention of cervical cancer…. it is safe since they are protecting them [the girls] (Parent to a vaccinated girl).

Most key informants were of the view that the vaccinating team was a competent team as they were trained prior to the vaccination. Therefore, they felt the girls were in safe hands.

> We were trained before we started giving, we went for a one day training and they also told us the importance of the HPV, the prevention, the type of cervical cancers, and so now we came here and started giving. At each clinic we were two nurses who were trained and then the environmental technician, so there are three- The one who when we give the injections will be doing the disposing of the syringes, and us the two nurses who went for training (Health worker).

However, this claim was subject to debate as there were still some health personnel who felt that some of their colleagues were not being professional because they were discouraging community members from accessing the HPV vaccine. As this health worker complained,

> ...the rumours which are there is that it starts from the community, also it comes from us as health personnel. There are some health personnel who are in the forefront again discouraging the communities saying, 'No, me if I were you, I wouldn't bring my child forward.' So if the community people also hear that, you find that they are also withdrawing their babies from coming to receive the vaccine (Health worker).

In addition, as the study revealed, some pupils did not have a good opinion about the health workers. Some pupils feared the facial expressions of some health workers. This scared them off as they feared the health workers might do some harm on them. As this girl said,

> Some girls are scared because of the way the doctors look. Some doctors on their faces, they will look like, you will get this vaccination and you will get sick. The faces just show that he is really going to prick a very big….with some doctors, it is just the faces (9-year-old non- vaccinated pupil).

To this, one parent said it was important for health workers to have soft hearts for children because children are very sensitive. He said,

> A child is very sensitive. A child needs to be properly handled. Children do not need to be shouted at all the time, they need to be well persuaded for you to do your job that you have gone to do.

On the other hand, as the study showed, there were still some people who were happy and satisfied with the providers due to the fact that they were familiar with them. They were the same set of people they interacted with at the clinic and in the community. Therefore, they felt safe.

> They are ok, since they are the same nurses that we find at the clinic when you are sick, they are the same people that give us the injections, so it is ok (Teacher).

For some parents, the fact that it was health professionals administering the vaccine gave them an assurance that their children were in safe hands. As this parent said,

> They are ok. It is a right group. I mean, who else can administer it? It is the health personnel. So that just there and then as they administer, if they see anything strange happening, they can quickly again administer another medicine, yeah. So it is ok.

Provision of the vaccine affected acceptability of the vaccine as people were either encouraged or discouraged from accessing the vaccine depending on how the vaccine was offered.

4.3.5 Setting for providing the vaccine and its acceptability

Setting for providing the vaccine affected acceptability as it determined the turn-up of girls to access the vaccine, as well as the effect it bore on girls. The program was mainly school-based. Therefore, accessibility to the vaccine was not a problem as it was the health workers that were following these girls in schools.

> They [Health workers] are actually the ones who are following all the school-going children. Maybe those that do not go to school may be disadvantaged, but at least the school-going children have access (Teacher).

How they went about the vaccination process was entirely up to the individual schools. Some schools (government) preferred to use the same classes where the girls were learning from, to administer the vaccine. In this case, boys were sent out leaving girls to receive their vaccines. As said,

> We release the boys. For me, I release the boys. I leave them to go out and play. Then I remain with the girls in class. That is what I do (Teacher).

This brought in a lot of disturbance from the released boys, as these would start playing thus making a lot of noise for the other grades that were learning. As this teacher complained;

> The boys when you set them free, they make noise, a lot of noise. Maybe in other schools where they have a lot of rooms, you take them to this room. But with us… you have seen. And the way the school is built, so they come and play here at the centre. Which means when they are here at the centre, there's noise everywhere (Teacher).

Other schools (private), preferred to remove the girls from classes and take them somewhere private.

> …we were in the library; whoever was there was asked to leave. So it was just eh the two teachers and the nurses that came plus the pupils (Teacher).

While some people were of the view that the school environment was the best place to give the vaccine from, others were not in support of this view. Those in support of the environment maintained to say they are used to such programs from the Ministry of Health, as this was not the first time they were doing school health programs. Therefore, they saw nothing wrong with it, only that this time the Ministry of Health was going there with an emphasis on cervical cancer and thus targeting the girls in a certain age group only.

> Because initially, we were doing school health. So it is not a new thing. It is just like part of school health. But now, we've just removed a certain age group and we are just looking at the girls (Key informant from Lusaka District Medical Office).

Another key informant mentioned that making the program school-based was helping the girls to get to know more about cervical cancer, as they would be inquisitive, thereby learn more about it including how it can be prevented.

> I think it is also helping in schools like they'll have, as they are wondering why they are giving those injections, I'm sure it will even be clicking in them to know more about it especially that they are school girls, so they'll be knowing more about the cancer. And then they'll become more aware and then they'll be able to even know how to prevent themselves (Health worker).

Some pupils were also in support of the school environment as a vaccination site, saying if they were followed in homes, their parents would not allow them to be vaccinated. They added that some parents would even lie that their children already received the vaccine just to put the health workers off. As one pupil said,

> It is a good thing because some when they are followed in homes, the parents don't allow them. Yes, that do not vaccinate them. Others even lie that they [girls] already got vaccinated (9-year-old vaccinated pupil).

Another pupil said that if they were followed in homes, their siblings would laugh at them if they cried from the pain of the injection, unlike at school where they could not see them.

> It is a good thing because they follow us in schools because if they follow us in homes, others their siblings would start laughing at them that you're crying (10 year old vaccinated pupil).

One pupil was of the view that if it was administered from the clinic, some people, especially those who associate hospital to sickness, would refuse to go there saying they are not sick. This pupil said,

> Others can refuse that what am I going to do at the clinic when I'm not sick (9 year old vaccinated pupil).

Other pupils said that schools were better environments to do the vaccinations from because the girls were easily accessible unlike taking them to the clinic because some parents would not find time to take their children to clinics as they are too busy. In addition, they detested long queues at clinics, which were usually the case.

> Because it is easier and faster. Again, if you are at home and they have refused you to get the vaccination at school, your parents will not even have time to take you to the hospital (9-year-old non-vaccinated pupil).

In addition, some pupils were of the view that parents hardly understood the information given on media. Therefore, they saw it fit to get more information in person at school. As this pupil said,

> When they say it on TV, some [parents] do not understand, so it is better to come to schools (10-year-old vaccinated pupil).

One parent mentioned that the target girls were easily found at school. In addition, another parent said school environment was the best environment for this three-dose HPV vaccine because it would be easy to follow-up these girls in schools unlike the clinic because they know these girls would always be at school unless otherwise.

> If it is a school-based thing, it is because they know a child who'd receive in her first term will come back to school in her second term, and they come back to school the third term. Meaning if it was done at the clinic, somebody can get it in the first term, and miss the second one or maybe just miss the other two. So if its doses are 3, then the school is the best because then you'll be able to make a follow-up.

Others however were against the idea of the vaccine being school-based. A teacher from the government school for example complained that boys, when released to give chance to the girls, made a lot of noise for the school. In addition, she hardly achieved her teaching objectives as after vaccination, there would be confusion in terms of girls crying and boys coming in to settle down. This usually took some good time, thereby the teacher not fulfilling the lesson plan. As she said,

> My teaching is disturbed since by the time they finish vaccinating them, its 40 minutes, one period gone. Some remain crying it's almost one hour gone. I'm affected yes. Meaning my lesson plan is distorted at that moment (Teacher).

In addition, she said administering this vaccine in schools was not a good idea as the boys tended to mock the girls that received this vaccine. She therefore suggested taking these girls to the clinic or elsewhere away from the boys to receive this vaccine.

> The school environment itself is not good. I think maybe at the clinic they just organize a day, we take all the grade 4s there...You just go with the class without their [boys'] knowledge. Or you just announce to the girls then they go there. By the time they're coming here, the boys will only know after they've already been vaccinated. Yes, because here at school, the boys mock them (Teacher).

One parent, also in opposition of the environment, said that administering in schools was very dangerous as anybody could impersonate a health worker and go into schools to do harm. He said it was better to administer it from the clinic/hospital because there, one could not doubt a nurse or doctor. He said,

> That one is very dangerous because a person can just wake up one morning, put on a uniform, go to school and do his own thing. S/he would even possess an ID and a uniform. It is very dangerous, a hospital is much better, considering the times we are in. because at a hospital, you cannot doubt a doctor or a nurse. Now at school? So it is better they make sure that they are vaccinated from the hospitals because in schools, if it is during holidays, meaning you cannot go there.

Another parent showed displeasure of the program being school-based. She argued that the girls needed to be taken to the clinic/hospital so that other examinations could be done on them, especially ascertaining whether they were sexually active or not before administering the vaccine on them considering it can only work in girls that are not sexually active. This however, was not done. She said,

> I would have preferred if they would have taken them maybe to a clinic or hospital so that they do other examinations before they give them this vaccine. I think that one would also carry weight somehow. Because, others regardless of being 13, they are already sexually active. So on that one, maybe they did not find out, they just, badness at the schools they were just giving them those vaccines.

One pupil was concerned about the lack of privacy in this vaccination process. She said at school, girls who were to be vaccinated went in the same room and were seeing each other get vaccinated. She said there was no privacy and suggested doing it from the hospital for the sake of privacy. As she said,

> It is a bad thing. Like when, if they come to the schools, you'll go with your… since these girls were vaccinated, they went in the same room at the same time, seeing their friend being vaccinated. Ah, some people like their privacy, so it is better you do it at the hospital (9-year-old non-vaccinated pupil).

Setting, either negatively or positively affected the turn-up of the girls to receive the vaccine.

CHAPTER FIVE

5.0 Discussion of findings

The study assessed acceptability among stakeholders of the HPV vaccination in selected primary schools in Lusaka.

In relation to the objectives, the factors that affected acceptability of the HPV were grouped under three main categories: individual, interpersonal and service-related factors. This chapter discusses how the results from this study compares with other studies in the three categories (individual, interpersonal, and service level).

5.1 Individual level factors

At individual level, this study found the following themes to be affecting acceptability of the HPV vaccine: the role of knowledge in shaping acceptability of the vaccine; perceived risks and benefits of the vaccine; attitude towards the vaccine and compatibility with personal values; fear of injections and acceptability of the vaccine and girls perceived as too young to understand the vaccine.

The majority of the girls interviewed did not know what HPV or HPV vaccine was. A few had heard about cervical cancer but could not relate it to HPV. This was also the case among some parents. Almost all eligible girls at Kalingalinga primary school accessed the vaccine as opposed to Kings Highway School where only three out of about 18 girls were vaccinated. Even among parents and Key Informants, not all were positive towards the HPV vaccine. This was mainly due to a lack of proper information to guide their decisions and outlook on the HPV vaccine.

Other studies have also shown little or a lack of knowledge on the HPV vaccine but high levels of acceptability (Dempsey et al, 2006; Bair et al, 2008; Thompson, 2011; Remes et al, 2012; Perlman et al, 2014). These studies showed high willingness and acceptability of HPV vaccine but low levels of knowledge and awareness of cervical cancer, HPV or HPV vaccine. In this study, this lack of knowledge on the vaccine had implications on the overall acceptability of the vaccine as people made decisions based on what they knew. The lack of knowledge was due to the lack of information on HPV vaccine. There had not been enough sensitization on the vaccine

because the HPV vaccination program was a pilot program only in Lusaka province (WHO, 2011). As such, the Ministry of Health did not want to alarm the entire nation on something that had not been rolled-out yet. This study also showed that providing parents with knowledge on HPV did not increase acceptability of the HPV vaccine for their daughters. Instead, they wanted to see the manifestation of the benefits of the vaccine before they could embark on vaccinating their daughters. This safety concern was similar to studies done by Trim et al. (2011) and Remes et al. (2012) where the parents interviewed had little knowledge about the vaccine but still stated that the vaccine would have a benefit if it didn't have harmful side effects (Bair et al., 2008; Trim et al., 2011; Remes et al., 2012).

Regarding perceived risks and benefits of the vaccine, most women from the reviewed studies felt they needed more information about the vaccine, especially regarding its safety and possible side effects before they could have a view (Waller et al., 2006; Ogilvie et al., 2007; Bair et al., 2008; Thompson, 2011; Poole et al., 2013; Cunningham et al., 2015). In these studies, parents were afraid of the possible side effects of the HPV vaccine. They felt it was risky to accept the vaccine before its risks were known. Mothers needed to prove the efficacy of the vaccine and if it were not risky before accepting vaccination on their daughters. Similarly, in this study, most parents were not willing to vaccinate their daughters because they were not sure of the vaccine's efficacy and risks. They said the vaccine was new on the market and its risks were not yet known. As such, they did not want to rush but decided to wait until a time when the vaccine's safety was known. In addition, parents needed proof of where the vaccine had worked and if it had no side effects. The major effects that were feared were infertility and cervical cancer. This fear was similar to the one found in Reme's study.

On the other hand, there were still some parents who saw the HPV vaccine as a good initiative considering the benefits that it had. This study for instance showed a high acceptability of the HPV vaccine among pupils whose parents had a strong belief that the vaccine prevented cervical cancer. The girls were thus motivated to receive the vaccine after hearing of its benefit. This was in correspondence with reviewed studies (Marlow et al, 2008; Bair et al, 2008; Fang et al, 2010; Liu et al, 2012). In these studies, most parents that accepted the vaccine for their daughters were motivated by the prevention of disease and the protection of their children.

Overall, in this study and the reviewed studies, there was a very high mistrust of the vaccine. This was probably because of a lack of adequate information on HPV vaccine. As such, people made their decisions based on what they heard in the community (rumours). There is need therefore, for a more detailed report on safety and effectiveness of the vaccine if more people are to be willing to accept the vaccine. It is clear from these studies that parents were highly concerned about the safety of the vaccine and did not want their daughters to take up something that would harm their health.

Reviewed studies showed that parents who generally had positive attitude towards vaccines were more accepting of the HPV vaccine compared to those that had negative attitude towards the HPV vaccine (Ogilvie et al., 2007, Trim et al., 2012; Liu et al, 2012). These studies showed that the HPV vaccine acceptability was also affected by the parental attitudes towards vaccines and the uptake of childhood vaccination. In this study, mention was often made to the previous measles vaccine, which was conducted countrywide and left most children with adverse effects. As such, parents were not keen to allow their daughters to receive the HPV vaccine saying whoever wanted to try out their new medicines/vaccines came to Africa. Even the girls themselves, especially those that did not access the vaccine gave the previous measles vaccine and its effects as the reason why they were hesitant to access the HPV vaccine. They feared the same might happen, that is, ending up with cervical cancer.

People were thus highly suspicious of the HPV vaccine as it was considered to be just a trial and its effects not yet known. Therefore, in as much as most parents were generally positive towards vaccines, they were hesitant towards accessing the HPV vaccine in particular because unlike the other vaccines, they were not familiar with the HPV vaccine and hence did not trust it. In addition, they feared the possible risk behaviours that might result from such a vaccine, like girls beginning to indulge in sexual activities, thinking they have been protected (Dempsey et al., 2006; Waller et al., 2006; Bair et al., 2008; Thomas, 2008; Allen et al., 2010; Remes et al., 2012). In these studies, there were concerns about the vaccine giving the girls a false sense of protection and engaging in behaviours that would threaten other aspects of their health. This finding corresponded with the finding from this study, where parents believed that having a child vaccinated against an STI would equate to condoning precocious sexual behaviour. This

however was ruled out by some parents who argued that it all depended on how a child was raised.

Girls were generally perceived as too young to understand the vaccine. In this study, parents were concerned about the age at which the girls were to be vaccinated. They said it meant giving out information which was inappropriate for them at that age as they were too young to hear certain terms or pieces of information. This was similar to what was found in the reviewed literature where parents disagreed to the age of vaccine administration, saying the girls were not mature enough to understand vaccine information (Waller et al, 2006; Marlow et al, 2008; Ogilvie et al, 2010; Remes et al, 2012; Trim et al, 2012). In these studies, parents saw no point in vaccinating girls that were not even at risk of cervical cancer at that age. It is no wonder in Marlow, 2008 and Ogilvie, 2010, studies, mothers of older daughters were more likely to be acceptors of the HPV vaccine than mothers of younger daughters.

Fear of injections was found to be one of the factors that affected acceptability of the HPV vaccine in this study. This fear was borne from seeing their friends crying from the pain of the injection as well as their experiences with injections. To escape this, such girls (that feared injections) absented themselves from school on days of vaccination. This finding was not found from the reviewed literature, probably because it was not explored.

5.2 Interpersonal level

At interpersonal level, the following were the themes that emerged from the study: faith in doctors/God and acceptability of the vaccine; the role of parents in shaping acceptability of the vaccine; fear of cervical cancer and uptake of the vaccine. Others included the role of peers in shaping acceptability of the vaccine; community factors and uptake of the vaccine; and concerns about the vaccine and acceptability of the vaccine.

Faith in doctors played a role in the acceptability of the HPV vaccine. This study finding suggest that most people have strong belief and confidence in doctors to an extent where they accepted the vaccine because it had been approved by a doctor and therefore it was considered safe to be used. This corresponded with other studies, which showed a high trust and belief in doctors (Ogilvie et al, 2007; Thompson, 2011; Trim et al., 2012). In these studies, having a doctor

recommend the vaccine increased the likelihood of vaccination. This is probably because of the high trust people have in doctors, perceiving them to be more knowledgeable about health matters and therefore are comfortable to entrust them with their health. As one participant from this study said, *'a doctor cannot approve something that is harmful to your health as that would be killing us. And that is not the wish/interest of a doctor but to cure and give life.*' This study further found that certain denominations were less likely to accept the vaccine. These believed that as long as one had faith in God, one would not suffer from any disease. Other studies have also found that religious beliefs influence the acceptability of the HPV vaccine. In one study for instance, one Latino mother pointed out that she did not perceive her child as susceptible to HPV in her teenage years due to the education she hoped to give her and the religion she followed, which discouraged having sex before marriage (Bair et al., 2008). In another study, there was a concern of whether the vaccine was in conformity with religious beliefs (Cunningham et al., 2015). In this study however, despite people having faith in God, there were still some who believed that faith had to go with action. Thus, they argued that one had to act, seek the vaccine, rather than completely relying on faith. They believed that prayer without action was dead.

It can thus be said that people tend to have certain beliefs that influence their decisions largely. It is therefore important to take into consideration the beliefs of people concerned, before embarking on a vaccination program as this.

Parents played a major role in shaping the acceptability of the HPV vaccine. As the girls were considered to be too young to make decisions, it was the parents that decided whether these girls should be vaccinated or not. Acceptability therefore depended on the parents' attitude towards the vaccine. In this study, parents' beliefs and attitudes and ultimately decisions affected acceptability of the HPV vaccine, as the girls were not incorporated in the decision-making concerning the HPV vaccination. Some girls wished to be vaccinated against HPV (especially after being educated on it) but could not because their parents had not allowed them. In another study, on the other hand, some girls were driven to receive the vaccine by their parents, even if it were not their wish. This negatively affected one girl, who was not happy with the decision she made because she felt under pressure (Watson-Jones et al., 2012). This study further showed that in some homes, health decisions were made by women and fathers had no input. This is consistent with a study done by Cunningham et al, 2015, where women made the majority of

health decisions for their family. In his study, decision-making largely affected acceptability of the HPV vaccine.

Peers also played a role in shaping the acceptability of the HPV vaccine. Some girls shunned the vaccine for fear of being victimized by their peers, especially boys. This study showed that girls often times were mocked by boys to say they would not conceive if they received the HPV vaccine. They were also mocked that they were being injected with Ebola and HIV. This worried some girls and hence they stayed away from vaccination. This study also showed that some girls refused to get vaccinated for fear of being laughed at by their peers if they dared cry from the pain of the injection. This finding was not found in the reviewed literature. However, it can be said that peers have the power to influence decisions through their attitudes, as was the case in this study.

Community factors had an influence on the uptake of the HPV vaccine. In this study, the people interviewed agreed that acceptability of the HPV vaccine was to a larger extent attributed to community's attitude, which mainly centred on rumours. These rumours affected people's judgment of the HPV vaccine and consequently its acceptability. The most rumoured effects were that of the vaccine containing cervical cancer itself, which would be implanted in the girls that got vaccinated, and that of infertility. This finding was similar to other studies (Waller et al., 2006; Bair et al, 2008; Thompson, 2012; Remes et al, 2012; Poole et al., 2013) that reported that parents were afraid of side effects of the HPV vaccine and felt it was risky to get vaccinated before all the vaccine's risks were known. In this study, there were additional rumours that were not found from the reviewed literature, such as the vaccine containing Ebola; the vaccine causing early puberty in girls; the vaginas being too wet after being vaccinated with HPV vaccine. Based on these rumours, people decided to either accept or not accept the HPV vaccine.

The fear of cervical cancer had a bearing on the uptake of the vaccine. In this study, the intensification of health education on cervical cancer saw more women accessing the cervical cancer screening services. In addition, these women encouraged their daughters to access the HPV vaccine. This was similar to Liu et al and Marlow et al studies, where regular attendance at cervical screening was an important predictor of HPV test acceptance. Even those that had previously refused to vaccinate their daughters were coming forth after learning more about cervical cancer. This may be because they now saw cervical cancer as a deadly disease and were

now willing to safeguard their daughters' health. Other studies that correspond to this finding, as reviewed from literature, include Remes et al., 2012; Thompson, 2011; Bair et al., 2008; Fang et al., 2010. In these studies, most parents that accepted the vaccine for their daughters were motivated by the prevention of disease and the protection of their children's health. In this study, the fear of cervical cancer was not only among mothers but also among the girls themselves. This made them to be more willing to accept the vaccine. This was also the case in Remes' study where the school girls interviewed said that they would like to be vaccinated to avoid a dangerous disease like cervical cancer (Remes et al 2012). It can thus be said that people's beliefs about health problems and their perceived benefits of action explain engagement in health-promoting behaviour.

There were a number of concerns of the vaccine and this had a direct effect on the acceptability of the vaccine. The main purpose of the HPV vaccine was to prevent the girls from acquiring the HPV once sexually active. As such, it was advisable that these girls be vaccinated before they started indulging in sex (WHO, 2011). In this study, there was a concern from the participants of what would happen if a girl had had sex before and was given the vaccine. This concern was raised as these girls were not examined to ascertain this fact. In addition, no proper taking of medical history was done on each child before administering the vaccine. This raised concerns among people as each child is a unique individual with different health needs. In addition, the people were concerned about the possible risks of the vaccine as they were not yet known since the vaccine was new on the Zambian market. This concern corresponded with Waller et al., 2006; Ogilvie et al., 2007; Bair et al., 2008; Thompson, 2012; ;Cunningham et al., 2015. In these studies, parents were afraid of the possible side effects of the HPV vaccine. They felt it was risky to accept the vaccine before its risks were known. People in these studies and this one inclusive, needed proof of the vaccines' efficacy and its safety before they could accept the vaccine. Thus the concerns mainly hinged on the efficacy and safety of the vaccine. This may compromise the overall effect of HPV vaccine in reducing cervical cancer rates. There is therefore a need to avail the needed information on safety and efficacy of the vaccine before embarking on vaccination programs as these.

5.3 Service level

At service level, the following were the themes that came up from the study as having an effect on acceptability of the HPV vaccine: Eligibility to the vaccine; compliance and vaccine acceptability; affordability and uptake of the vaccine; provision of the vaccine and setting for providing the vaccine and its acceptability.

Eligibility to the vaccine had some influence on the acceptability of the vaccine. The target group for the HPV vaccine were girls aged 9-13. However, in the present study, this was not followed as the health workers only considered those in grade four. This was probably that the vaccine was expensive and could not cater for all girls in that age group. In addition, there were going to be challenges logistically if all the eligible girls were to be vaccinated regardless of the grade. As a result, girls in the lower or higher grades were not considered despite them being in the age group. This was also the case in other studies reviewed. The choice of the grade was dependant on what grade had the most eligible girls. In Rwanda (Binagwaho et al, 2012) for example, only grade six eligible girls were considered. In Tanzania (Watson-Jones et al, 2012), it was the grade five girls that were considered. In the present study, this grade-based strategy affected acceptability of the HPV vaccine as there were girls who were either in higher or lower grades, but still in the target age group, who really wanted the vaccine but could not access it because they were not in grade four. In addition, the second dosage was only availed to those that accessed the first dose. As such, clients were recruited during the administration of the first dosage. If one missed the first dose, they were left out of the program even if they desired to be vaccinated. This finding was not found in the reviewed studies but it can be said that this was so to avoid going back and forth, given the limited period in which the program had to be done.

Affordability was yet another thing that affected acceptability. This study showed that there was no direct cost on the girls and the parents as the vaccine was offered freely to the girls, unlike in countries like South Africa where parents had to buy the vaccine at a high price (Brabin et al. 2012). However, unlike the pilot program that was funded, the rollout program meant the government meeting some, if not all the expenses by itself. Discussions and strategies were still underway on how to go about the roll-out program in terms of finances, as the teachers, nurses, Community Health Workers and other subordinates would have to be paid.

Compliance had an effect on acceptability of the HPV vaccine. In this study, compliance to the vaccine proved difficult for some girls, as they did not receive the three required doses, which was a requirement for full immunization. This was due to transfers in and out of the catchment area. This finding is consistent with Fregnani's study, which found that compliance to the vaccine was difficult for some of the girls due to a number of reasons among which was the moving away from the city which was the provision area (Fregnani et al., 2013). In this study, there was no follow-up made especially to those that transferred out of the catchment area-Lusaka district. Moreover, the vaccine was only available in Lusaka district. As a result, such girls did not receive a complete vaccination.

Provision of the vaccine was another thing that affected acceptability of the vaccine. There was a shortage of workers as it was the same health workers that used to go and vaccinate the girls in addition to their routine work in their stations (clinics). This was straining to a greater extent. This finding is consistent with Bingham et al.'s (2009) findings in which insufficient human resources were reported as a challenge to vaccine delivery. In this study, this state of affairs worked to the advantage of the community as they felt safe being attended to by people they were familiar with (same set of people they found at the local clinics). As such, they willingly accessed the vaccine.

This study also showed a poor performance of the vaccination program in the initial phases. This was attributed to the poor working relationship between the Ministry of Health and the Ministry of Education in the early stages of the pilot. This is in consistence with Brabin et al. (2011) finding which reported a bad working relationship between teachers and nurses in the provision of the HPV vaccine. In Brabin's study, nurses expected schools to take some responsibility for ensuring good uptake and were frustrated when help was not forthcoming (Brabin et al., 2011). This was also the case in this study where nurses thought teachers were deliberately not being helpful. However, the teachers felt they were not adequately incorporated; hence, did not know what role to play. The working relationship however improved in the second year of the pilot as teachers were incorporated and were working hand in hand with the health workers. In a research by PATH (2009), teachers were not happy that the health workers were being paid for their involvement in the vaccination process while they were not. As such, they detested everything about the vaccination program ranging from poor timing of the vaccination to the way the health

workers littered the school compound after vaccination (PATH, 2009). This goes to show that where there is no synergy, there can be frustration and this can negatively affect the running of a vaccine program and ultimately, the acceptability of the vaccine.

The vaccination program was implemented in schools. This made accessibility to the vaccine by the girls, who were the target group, to be easier as these were mostly in schools. Follow- up was also made easier. Other studies have also reported a school-based based provision of the HPV vaccine (PATH, 2009; Brabin et al, 2011; Watson-Jones et al, 2012; Fregnani et al., 2013). In this study, whereas some people found the school setting to be the best in that the girls would learn more about issues of cervical cancer, others were against the setting. These cited disturbance in learning; mockery of girls by the boys; risk of impersonation of medical personnel and lack of privacy in schools among others and lack of medical examinations being done before vaccination.

Overall, this study suggests that there are different factors at play in the acceptability of the HPV vaccine. A person is not a single entity in making a decision to accept or not accept a vaccine such as this. Rather, he/she is influenced by different factors at individual, community and service levels. All these work together in determining acceptability of the HPV vaccine. This is supported by other studies conducted in other settings. It is therefore important that in communities characterized by individuals with different characteristics, a lot of sensitization should be done before implementing such programs as the HPV vaccination program because people tend to make decisions based on what they know.

5.4 Limitation of the study

First, a more general limitation concerns the generalizability of the findings. This study was conducted in one setting with a small sample of respondents drawn from two (2) sites. It was exploratory, aimed at generating in-depth insights into factors influencing the acceptability of the HPV vaccine among stakeholders. The findings may therefore not be representative of other settings. Similar studies are therefore warranted in other settings with different socio demographic characteristics for comparability of findings.

Secondly, the study did not explore other stakeholders like the church. There is need to explore other stakeholders relevant to the study to get a comprehensive view on acceptability of the HPV vaccine.

Thirdly, this study was not exhaustive on the factors that influence acceptability. Policy factors were not explored, and as such, there may be need for a more encompassing study on the factors.

Fourthly, as the girls interviewed were first educated on the subject matter before asking them questions, they could not have had the chance to reflect on what they had been educated on as the time difference between the time they got the information and the time they were asked questions on the same was minimal. This might have influenced their responses to a larger extent.

CHAPTER SIX

6.0 Conclusion

This study looked at the acceptability of the HPV vaccine among stakeholders in Lusaka district, a case study of two schools that were involved in the pilot program. The study identified factors that influenced acceptability at individual, interpersonal and service levels. At individual level, the following influenced acceptability of the HPV vaccine: the role of knowledge in shaping acceptability of the vaccine; perceived risks and benefits of the vaccine; attitude towards the vaccine and compatibility with personal values; and girls being perceived as too young to understand the vaccine. At interpersonal level, the things that influenced acceptability of the vaccine were: faith in doctors/God; the role of parents in shaping acceptability of the vaccine; the role of peers in shaping acceptability of the vaccine; fear of cervical cancer and uptake of the vaccine; community factors and uptake of the vaccine; concerns of the vaccine and acceptability of the vaccine. At service level, the following seemed to influence acceptability of the HPV vaccine: eligibility of the vaccine; compliance and acceptability of the vaccine; affordability and uptake of the vaccine; provision of the vaccine; fear of injections and acceptability of the vaccine; setting for providing the vaccine and its acceptability.

Most findings correlate with previous studies done on acceptability of the HPV vaccine. In a broader sense, my findings suggest low acceptance of the HPV vaccine. This was due to low levels of knowledge and awareness of cervical cancer, HPV and HPV vaccine. There is therefore an urgent need to inform public about HPV, HPV vaccine and cervical cancer, particularly to parents and adolescents, emphasizing on the safety of the vaccine. Only then can there be a high widespread acceptance of the HPV vaccine. This acts as a wakeup call for the implementers of the HPV vaccine to learn from.

6.1 Recommendations

6.1.1. Research related recommendations

There is need for research on other stakeholders to get a comprehensive view on acceptability of the HPV vaccine. There is also need to understand the implementation partnerships and how they work in order to clearly understand the HPV vaccine implementation.

6.1.2. Policy and program related recommendations

Intensify stakeholder sensitization and engagement on cervical cancer and HPV vaccine.

The concerned stakeholders need to be sensitized adequately on issues of cervical cancer, HPV and HPV vaccine. This sensitization should be done way before the implementation of the vaccination program, addressing all their concerns raised, and thus preparing them for the vaccination program.

Strengthen capacity and working partnership between health workers and teachers.

There is need to increase capacity of health workers to help out in the vaccination process rather than straining the few that are there. In addition, the working partnership between teachers and health workers need to be strengthened so that they work for a common cause. These need to break any boundaries between them and come together for the good of a child.

Cost

Although the vaccine is expected to be offered free, the financial burden on the part of the government, associated with access to vaccination should be minimized. This is because if the HPV vaccine is to be rolled out to the whole country, the government has to foot most if not all the costs associated with the vaccination, unlike the pilot program which was funded.

REFERENCES

Agosti, J. M., & Goldie, S. J. (2007). Introducing HPV vaccine in developing countries—key challenges and issues. *New England Journal of Medicine*, *356*(19), 1908-1910.

Allen, J. D., Othus, M. K., Shelton, R. C., Li, Y., Norman, N., Tom, L., & del Carmen, M. G. (2010). Parental decision making about the HPV vaccine. *Cancer Epidemiology Biomarkers & Prevention*, *19*(9), 2187-2198.

Bair, R. M., Mays, R. M., Sturm, L. A., & Zimet, G. D. (2008). Acceptability of the human papillomavirus vaccine among Latina mothers. *Journal of pediatric and adolescent gynecology*, *21*(6), 329-334.

Biellik, R., Levin, C., Mugisha, E., LaMontagne, D. S., Bingham, A., Kaipilyawar, S., & Gandhi, S. (2009). Health systems and immunization financing for human papillomavirus vaccine introduction in low-resource settings. *Vaccine*, *27*(44), 6203-6209.

Binagwaho, A., Wagner, C. M., Gatera, M., Karema, C., Nutt, C. T., & Ngabo, F. (2012). Achieving high coverage in Rwanda's national human papillomavirus vaccination programme. *Bulletin of the World Health Organization*, *90*(8), 623-628.

Bingham, A., Drake, J. K., & LaMontagne, D. S. (2009). Sociocultural issues in the introduction of human papillomavirus vaccine in low-resource settings. *Archives of pediatrics & adolescent medicine*, *163*(5), 455-461.

Brabin, L., Stretch, R., Roberts, S. A., Elton, P., Baxter, D., & McCann, R. (2011). The school nurse, the school and HPV vaccination: a qualitative study of factors affecting HPV vaccine uptake. *Vaccine*, *29*(17), 3192-3196.

Brocki, J. M., & Wearden, A. J. (2006). A critical evaluation of the use of interpretative phenomenological analysis (IPA) in health psychology. *Psychology and health*, *21*(1), 87-108.

Chapman, E., & Smith, J. A. (2002). Interpretative phenomenological analysis and the new genetics. *Journal of health psychology*, *7*(2), 125-130.

Clifford, G. M., Smith, J. S., Plummer, M., Munoz, N., & Franceschi, S. (2003). Human papillomavirus types in invasive cervical cancer worldwide: a meta-analysis. *British journal of cancer*, *88*(1), 63-73.

Cox, D. S., Cox, A. D., Sturm, L., & Zimet, G. (2010). Behavioral interventions to increase HPV vaccination acceptability among mothers of young girls. *Health Psychology*, *29*(1), 29.

Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches*. Sage.

Cunningham, M. S., Skrastins, E., Fitzpatrick, R., Jindal, P., Oneko, O., Yeates, K., ... & Aronson, K. J. (2015). Cervical cancer screening and HPV vaccine acceptability among rural and urban women in Kilimanjaro Region, Tanzania. *BMJ open*, *5*(3), e005828.

Dempsey, A. F., Zimet, G. D., Davis, R. L., & Koutsky, L. (2006). Factors that are associated with parental acceptance of human papillomavirus vaccines: a randomized intervention study of written information about HPV. *Pediatrics*, *117*(5), 1486-1493.

Denzin, N. K. & Lincoln, Y. S. (Eds.) (1998c) *The Landscape of Qualitative Inquiry,* (Vol.1). Sage.

Denzin, N. K. & Lincoln, Y. S. (2008). *Collecting and interpreting qualitative materials* (Vol. 3). Sage.

DiAngi, Y. T., Panozzo, C. A., Ramogola-Masire, D., Steenhoff, A. P., & Brewer, N. T. (2011). A cross-sectional study of HPV vaccine acceptability in Gaborone, Botswana. *PloS one*, *6*(10), e25481.

Ezenwa, B. N., Balogun, M. R., & Okafor, I. P. (2013). Mothers' human papilloma virus knowledge and willingness to vaccinate their adolescent daughters in Lagos, Nigeria. *International journal of women's health*, *5*, 371-377.

Fang, C. Y., Coups, E. J., & Heckman, C. J. (2010). Behavioral correlates of HPV vaccine acceptability in the 2007 Health Information National Trends Survey (HINTS). *Cancer Epidemiology Biomarkers & Prevention*, *19*(2), 319-326.

Ferlay J, Bray F, Pisani P, Parkin DM. (2004). GLOBOCAN 2002: Cancer Incidence, Mortality and Prevalence Worldwide. *IARC CancerBase* No. 5, version 2.0. Lyon, France: IARC Press.

Franco, E. L., & Harper, D. M. (2005). Vaccination against human papillomavirus infection: a new paradigm in cervical cancer control. *Vaccine*, *23*(17), 2388-2394.

Fregnani, J. H. T. G., Carvalho, A. L., Eluf-Neto, J., Ribeiro, K. D. C. B., de Melo Kuil, L., da Silva, T. A., ... & Villa, L. L. (2013). A school-based human papillomavirus vaccination program in barretos, Brazil: final results of a demonstrative study.

Huberman, M., & Miles, M. B. (2002). *The qualitative researcher's companion*. Sage.

Immunisation Action Coalition. ask the Experts, Human Papillomaviruses (HPVs), reviewed and revised, September 2013.

Janz, N. K., & Becker, M. H. (1984). The health belief model: A decade later. *Health Education & Behavior*, *11*(1), 1-47.

Jemal, A., Bray, F., Center, M. M., Ferlay, J., Ward, E., & Forman, D. (2011). Global cancer statistics. *CA: a cancer journal for clinicians*, *61*(2), 69-90.

Kaubi, O. (2011). *Human Papillomavirus and~ Cervical Cancer Prevention: Knowledge and Attitudes among Women in Lusaka Urban* (Doctoral dissertation, University of Alabama at Birmingham).

Ladner, J., Besson, M. H., Rodrigues, M., Audureau, E., & Saba, J. (2014). Performance of 21 HPV vaccination programs implemented in low and middle-income countries, 2009-2013. *BMC public health*, *14*(1), 670.

Levy, M. D. L., Larcher, V., & Kurz, R. (2003). Informed consent/assent in children. Statement of the Ethics Working Group of the Confederation of European Specialists in Paediatrics (CESP). *European journal of pediatrics*, *162*(9), 629-633.

Liu, F. W., Vwalika, B., Hacker, M. R., Allen, S., & Awtrey, C. S. (2012). Cervical cancer and HPV vaccination: Knowledge and attitudes of adult women in Lusaka, Zambia. *Journal of vaccines & vaccination*, *3*(138).

Louie, K. S., De Sanjose, S., & Mayaud, P. (2009). Epidemiology and prevention of human papillomavirus and cervical cancer in sub-Saharan Africa: a comprehensive review. *Tropical Medicine & International Health*, *14*(10), 1287-1302.

Louie, K. S., De Sanjose, S., Diaz, M., Castellsague, X., Herrero, R., Meijer, C. J., ... & Bosch, F. X. (2009). Early age at first sexual intercourse and early pregnancy are risk factors for cervical cancer in developing countries. *British journal of cancer*, *100*(7), 1191-1197.

Lusaka Times. (2011) Cervical Cancer Vaccine Coming. [Online] Available from: http://www.lusakatimes.com/2011/10/24/cervical-cancer-vaccine-coming/. [Accessed: 17th September, 2014] as reported by the Lusaka Times (2011).

Lusaka Times. (2012) 50 000 girls to be vaccinated with Human Pappiloma Virus in 2013. [Online] Available from: http://www.lusakatimes.com/2012/12/21/50000-girls-vaccinated-human-papilloma-virus-2013/. [Accessed: 16th September, 2014] as reported by the Lusaka Times (2012).

Lusaka Times. (2013) First Lady urges parents to ignore myths surrounding HPV vaccine amidst safety global concerns on the vaccine for girls. [Online] Available from: http://www.lusakatimes.com/2013/08/16/first-lady-urges-parents-to-ignore-myths-surrounding-hpv-vaccine-as-global-safety-concerns-arise-on -the-vaccine-for-girls/. [Accessed: 16th September, 2014] as reported by the Lusaka Times (2013).

Lusaka Times. (2014) First Lady urges parents to support HPV Vaccine roll out. [Online] Available from: http://www.lusakatimes.com/2014/02/19/first-lady-urges-parents-support-hpv-vaccine-roll/. [Accessed: 18th September, 2014] as reported by the Lusaka Times (2014).

Lusaka Times. (2014) HPV Vaccines May Be Less Effective for Black Women: Study. [Online] Available from: http://www.lusakatimes.com/2014/04/05/hpv-vaccines-may-less-effective-black-women-study/. [Accessed: 18th September, 2014] as reported by the Lusaka Times (2014).

Marlow, L. A., Waller, J., & Wardle, J. (2008). Socio demographic predictors of HPV testing and vaccination acceptability: results from a population-representative sample of British women. *Journal of Medical Screening*, *15*(2), 91-96.

McCormack, S., Ramjee, G., Kamali, A., Rees, H., Crook, A. M., Gafos, M., ... & Weber, J. (2010). PRO2000 vaginal gel for prevention of HIV-1 infection (Microbicides Development Programme 301): a phase 3, randomised, double-blind, parallel-group trial. *The Lancet*, *376*(9749), 1329-1337.

Mills, A. J., Durepos, G., & Wiebe, E. (Eds.). (2009). *Encyclopedia of case study research* (Vol. 2). Sage Publications.

Munoz, N., Bosch, F. X., de Sanjose, S., Herrero, R., Castellsagué, X., Shah, K. V., ... & Meijer, C. J. (2003). Epidemiologic classification of human papillomavirus types associated with cervical cancer. *New England Journal of Medicine*, *348*(6), 518-527.

Ntekim, A. (2012). *Cervical cancer in sub sahara africa*. INTECH Open Access Publisher.

Ogilvie, G., Anderson, M., Marra, F., McNeil, S., Pielak, K., Dawar, M., ... & Naus, M. (2010). A population-based evaluation of a publicly funded, school-based HPV vaccine program in British Columbia, Canada: parental factors associated with HPV vaccine receipt.

Ogilvie, G. S., Remple, V. P., Marra, F., McNeil, S. A., Naus, M., Pielak, K. L., ... & Patrick, D. M. (2007). Parental intention to have daughters receive the human papillomavirus vaccine. *Canadian Medical Association Journal*, *177*(12), 1506-1512.

Owonikoko, M. K., Afolabi, F. A., Adebusoye, A. L., & Atanda, O. O. (2013). Human Papilloma virus vaccine knowledge, attitudes and perceptions of parents in South west Nigeria. *J. Med. Sci. Pub. Health*, *1*(1), 13-19.

Parkin, D. M., & Bray, F. (2006). The burden of HPV-related cancers. *Vaccine*, *24*, S11-S25.

Parkin, D. M., Bray, F., Ferlay, J., & Pisani, P. (2005). Global cancer statistics, 2002. *CA: a cancer journal for clinicians*, *55*(2), 74-108.

Perlman, S., Wamai, R. G., Bain, P. A., Welty, T., Welty, E., & Ogembo, J. G. (2014). Knowledge and awareness of HPV vaccine and acceptability to vaccinate in sub-Saharan Africa: a systematic review. *PloS one*, *9*(3).

PATH and Child Health and Development Center (CHDC), (2009). Shaping a strategy to introduce HPV vaccine in Uganda: Formative research results from the HPV vaccines: Evidence for Impact Project Seattle: *PATH*.

Pokeyourmind. (2013) HPV Vaccine for Zambian girls. [Online] Available from: pokeyourmind.blogspot.com/2013/05/hpv-vaccine-for-zambian-girls.html. [Accessed: 16th February, 2014] as reported by Pokeyourmind (2013).

Poole, D. N., Tracy, J. K., Levitz, L., Rochas, M., Sangare, K., Yekta, S., ... & De Groot, A. S. (2013). A cross-sectional study to assess HPV knowledge and HPV vaccine acceptability in Mali. *PloS one*, *8*(2), e56402.

Ports, K. A., Reddy, D. M., & Rameshbabu, A. (2013). Barriers and facilitators to HPV vaccination: perspectives from Malawian women. *Women & health*, *53*(6), 630-645.

Qiao, Y. L., Sellors, J. W., Eder, P. S., Bao, Y. P., Lim, J. M., Zhao, F. H., ... & Lorincz, A. T. (2008). A new HPV-DNA test for cervical-cancer screening in developing regions: a cross-sectional study of clinical accuracy in rural China. *The lancet oncology*, *9*(10), 929-936.

Remes, P., Selestine, V., Changalucha, J., Ross, D.A., Wight, D., Sanjose, S., Kapiga, S., Hayes, R.J. & Watson-jones, D. 2012.A qualitative study of HPV vaccine acceptability among health workers, teachers, parents, female pupils, and religious leaders in northwest Tanzania. *Vaccine*, 30, 5363– 5367.

Ritchie J, Spencer L, O'Connor W, 2003: Carrying out qualitative analysis in Qualitative Research Practice: A Guide for Social Science Students and Researchers. Edited by Ritchie J, Lewis J. London: *Sage Publications*; 219–262.

SALC Report (2012). Tackling cervical cancer: Improving Access to Cervical Cancer Services for Women in Southern Africa. Southern Africa Litigation Center: Johannesburg. Available from:
http://www.southernafricalitigationcenter.org/uploads/CERVICAL%20CANCER%20Report.pdf

Saldaña, J. (2012). *The coding manual for qualitative researchers* (No. 14). Sage.

Schenk, K., & Williamson, J. (2005). Ethical approaches to gathering information from children and adolescents in international settings: guidelines and resources.

Sussman, A. L., Helitzer, D., Sanders, M., Urquieta, B., Salvador, M., & Ndiaye, K. (2007). HPV and cervical cancer prevention counseling with younger adolescents: implications for primary care. *The Annals of Family Medicine*, *5*(4), 298-304.

Thomas, T. L. (2008). The new human papillomavirus (HPV) vaccine: Pros and cons for pediatric and adolescent health. *Pediatric nursing*, *34*(5), 429-431.

Thompson, V. L. S., Arnold, L. D., & Notaro, S. R. (2011). African American parents' attitudes toward HPV vaccination. *Ethnicity & disease*, *21*(3), 335.

Tracy, J. K., Schluterman, N. H., Greene, C., Sow, S. O., & Gaff, H. D. (2014). Planning for human papillomavirus (HPV) vaccination in sub-Saharan Africa: A modeling-based approach. *Vaccine*, *32*(26), 3316-3322.

Trim, K., Nagji, N., Elit, L., & Roy, K. (2012). Parental knowledge, attitudes, and behaviours towards human papillomavirus vaccination for their children: a systematic review from 2001 to 2011. *Obstetrics and gynecology international*, *2012*.

Unicef, & UNICEF. (2012). Zambia statistics. *Saatavana internetistä osoitteesta*.

available from:
http://www.unicef.org/infobycountry/zambia_statistics.html#116.

Van Krickinge G, Castellsague X, Cibula D, and Demarteau N (2014).Estimation of the potential overall impact of the Human papillomavirus vaccination on cervical cancer cases and deaths. *Vaccine*, 32 (6), 733-739, doi: 10.1016/j.vaccine.2013.11.049.

Van Olmen J CB, Van Damme W, Marchal B, Van Belle S, Van Dormael M, et al: *Analysing health systems to make them stronger*. Antwerp: 2010.

Waller, J., Marlow, L. A., & Wardle, J. (2006). Mothers' attitudes towards preventing cervical cancer through human papillomavirus vaccination: a qualitative study. *Cancer Epidemiology Biomarkers & Prevention, 15*(7), 1257-1261.

Watson-Jones, D, Baisley, K, Ponsiano, R, (2012). Human Papillomavirus Vaccination in Tanzanian School girls: Cluster randomised trial comparing two vaccine delivery strategies. *J infect Dis*, 206, 678-686.

Watson-Jones, D., Tomlin, K., Remes, P., Baisley, K., Ponsiano, R., Soteli, S., De Sanjose, S., Changalucha, J., Kapiga, S. & Hayes, R. J. (2012). Reasons for receiving or not receiving HPV vaccination in primary schoolgirls in Tanzania: a case control study. *PLoS One*, 7**,** e45231.

WHO (2009). Humanpapillomavirus vaccines. *WHO position paper*. Weekly Epidemiological Record 15: 118-31 [Pubmed].

WHO (2011) *Immunization profile- Zambia*. June 2011.

WHO (2015). *Human Papillomavirs (HPV) vaccine introduced in zambia*. [Online] Available from: www.afro.who.int/en/zambia/press materials/intem/5609-human-papilloma-virus-hpv-vaccine-introduced-in-zambia.html.

[Accessed: 26th August, 2015].

Yin, R.K. (2009). Case study research: Design and method (4th ed.)Thousand Oaks, CA: Sage.

Zambia Reports. (2014) Zambia: HPV Vaccine One Year On - part 1. [Online] Available from: allafrica.com/stories/20140617081. html. [Accessed: 18th August, 2015] as reported by the Zambia Reports (2014).

APPENDICES

Appendix 1: Ethical Approval Letter

33 Joseph Mwilwa Road
Rhodes Park, Lusaka
Tel: +260 955 155 633
+260 955 155 634
Cell: +260 966 765 503
Email: eresconverge@yahoo.co.uk

I.R.B. No. 00005948
F.W.A. No. 00011697

29th July, 2014

Ref. No. 2014-May-017

The Principal Investigator
Ms. Fortress Kucheba
The University of Zambia
School of Medicine
Dept. of Public Health
P.O. Box 50110,
LUSAKA.

Dear Ms. Kucheba,

RE: HPV VACCINE ACCEPTABILITY AMONG STAKEHOLDERS IN LUSAKA DISTRICT.

Reference is made to your corrections dated 28th July, 2014. The IRB resolved to approve this study and your participation as principal investigator for a period of one year.

Review Type	Ordinary	Approval No. **2014-May-017**
Approval and Expiry Date	Approval Date: 29th July, 2014	Expiry Date: 28th July, 2015
Protocol Version and Date	Version-Nil	28th July, 2015
Information Sheet, Consent Forms and Dates	• English.	28th July, 2015
Consent form ID and Date	Version-Nil	28th July, 2015
Recruitment Materials	Nil	28th July, 2015
Other Study Documents	FGD, IDI and KII Guides.	28th July, 2015
Number of participants approved for study	31	28th July, 2015

Where Research Ethics and Science Converge

Specific conditions will apply to this approval. As Principal Investigator it is your responsibility to ensure that the contents of this letter are adhered to. If these are not adhered to, the approval may be suspended. Should the study be suspended, study sponsors and other regulatory authorities will be informed.

Conditions of Approval

- No participant may be involved in any study procedure prior to the study approval or after the expiration date.
- All unanticipated or Serious Adverse Events (SAEs) must be reported to the IRB within 5 days.
- All protocol modifications must be IRB approved prior to implementation unless they are intended to reduce risk (but must still be reported for approval). Modifications will include any change of investigator/s or site address.
- All protocol deviations must be reported to the IRB within 5 working days.
- All recruitment materials must be approved by the IRB prior to being used.
- Principal investigators are responsible for initiating Continuing Review proceedings. Documents must be received by the IRB at least 30 days before the expiry date. This is for the purpose of facilitating the review process. Any documents received less than 30 days before expiry will be labelled "late submissions" and will incur a penalty.
- Every 6 (six) months a progress report form supplied by ERES IRB must be filled in and submitted to us.
- ERES Converge IRB does not "stamp" approval letters, consent forms or study documents unless requested for in writing. This is because the approval letter clearly indicates the documents approved by the IRB as well as other elements and conditions of approval.

Should you have any questions regarding anything indicated in this letter, please do not hesitate to get in touch with us at the above indicated address.

On behalf of ERES Converge IRB, we would like to wish you all the success as you carry out your study.

Yours faithfully,
ERES CONVERGE IRB

Dr. E. Munalula-Nkandu
BSc (Hons), MSc, MA Bioethics, PgD R/Ethics, PhD
CHAIRPERSON

APPENDIX 2: Participant Information Sheet

Introduction

My name is Fortress Kucheba and I am a student at the University of Zambia pursuing a Master's degree in Public Health. I am conducting a research on the HPV vaccine which has recently been introduced in Zambia. My study is focusing on the acceptability of this vaccine in Lusaka district. I invite you to take part in this study. This information sheet may contain words that you do not understand. Please feel free to ask questions as I go through the information and I will take time to explain.

Purpose of the research

The HPV vaccine has recently been introduced in Zambia for the first time. This is to protect young girls from acquiring HPV, which can eventually lead to cervical cancer in future. The aim of the study is to have a general picture of the acceptability and uptake of this vaccine in Lusaka district and possibly the whole of Zambia, so that interventions, if need be, can be put in place. I believe that you can help me by telling me what you know about the HPV vaccine in general and what would influence you to take up this vaccine. I would also like to know how your immediate social circles or networks influence your knowledge and perceptions of the HPV vaccine.

Type of Research Intervention

This research will involve your participation in a group discussion that will take 45 minutes to an hour.

Participant selection

You are being invited to take part in the research because I feel that your experience as a pupil in the target group for the vaccine can contribute much to the understanding and knowledge on the acceptability of the HPV vaccine.

Voluntary participation

Your participation in this research is entirely voluntary. It is your choice whether to participate or not.

Duration

The group discussion will be held once and will take about one hour.

Risks

There is a risk that you may share some personal or confidential information by chance or that you may feel uncomfortable talking about some topics. You do not have to answer any question or take part in any discussion if you feel the question(s) are too personal or if talking about them makes you feel uncomfortable.

Benefits

The interaction will help me the researcher in the sense that I will gain more insights about the topic in question, and you the participant(s) will gain more knowledge about the HPV vaccine and the social issues influencing its uptake and acceptability.

Confidentiality

I will not share any information about you to anyone outside the research team. The information that I will collect from this research will be kept private. Any information about you will have a number on, instead of a name. Only I and my supervisor will know what your number is and the information will be locked up. I will ask you or/and others in the group not to talk to people outside the group about what was said in the interview or group discussion. In other words, we will ask (each one of) you to keep what we discuss confidential.

Sharing the results

The information collected will not be shared with or given to anyone except my supervisor. When we I am finished with this study I will write a report about what was learned. This report will not include your name or that you were in the study.

Right to refuse or withdraw

The School and your parents or legal guardians have already said that it was okay for you to answer these questions about Acceptability of the HPV vaccine, but you have the right to refuse to participate or to withdraw from the study at any time.

Who to contact

If you have any questions, you may ask me now or later on the following address:

Fortress Kucheba

University of Zambia

School of medicine

Department of public health

P.O Box 50110

Lusaka, Zambia

Email: fkucheba@yahoo.com

If you wish to ask questions relating to ethics, you may contact the chairperson, Ethics committee on the following address:

33 Joseph Mwilwa Road
Rhodes Park
Lusaka
Zambia
Email: eresconverge@yahoo.co.uk
Office line: +260 955 155633
+260 955 155634

Appendix 3: Consent Form for parents

I have been invited to participate in a research on "Acceptability of the HPV vaccine among stakeholders in Lusaka district"

(This section is mandatory)

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have been asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study.

Name of Participant:……..

Signature/thumbprint of Participant:……

Date:……

Witness (in a situation where the participant can't read or write):……..

Signature/thumbprint:…….

Date:……

Name of researcher:……..

Signature/thumbprint:……

Date:……

Appendix 4: Assent Form for girls

I have been invited to participate in a research on "Acceptability of the HPV vaccine among stakeholders in Lusaka district"

(This section is mandatory)

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have been asked have been answered to my satisfaction. I assent voluntarily to be a participant in this study.

Name of Participant:……..

Signature/thumbprint of Participant:……

Date:……

Witness (in a situation where the participant can't read or write):……..

Signature/thumbprint:…….

Date:……

Name of researcher:……..

Signature/thumbprint:……

Date:…….

Appendix 5: Consent Form for Key Informants

I have been invited to participate in a research on "Acceptability of the HPV vaccine among stakeholders in Lusaka district"

(This section is mandatory)

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have been asked have been answered to my satisfaction. I consent voluntarily to be a participant in this study.

Name of Participant:……..

Signature/thumbprint of Participant:……

Date:……

Witness (in a situation where the participant can't read or write):……..

Signature/thumbprint:…….

Date:……

Name of researcher:……..

Signature/thumbprint:……

Date:…….

Appendix 6: Parental or Guardian Permission Form

Your child is invited to participate in a research study being conducted by Fortress Kucheba. The purpose of the research is to study the acceptability of the Human Papiloma Virus (HPV) vaccine among stakeholders in Lusaka. Among the stakeholders are the pupils who are the target group for the vaccine. Your child is in the target group. The session will be digitally recorded.

Your child will answer a series of questions regarding the subject matter. There are no known risks associated with this research other than the potential for sharing some personal or confidential information by chance or feeling uncomfortable talking about some topics. There are no known benefits other than the knowledge gained from having participated.

The interview will take no longer than one hour. Your child's participation is voluntary. She may choose not to participate in this research study. If she agrees to participate, she can withdraw from the study at any time. I will do everything I can to protect your child's privacy. Her name will be recorded only for scheduling and assent purposes. All data will be identified only by a subject number. Any materials containing her name (e.g. assent forms) will be kept in a separate locked file. Any record linking your child's name to a particular subject matter will be destroyed once the study is complete. Her identity will not be revealed in any publication from this study.

If you have any questions, please contact the investigator, Fortress Kucheba on 0965942679/ 0977657010. If you have questions about your child's rights as a research participant, you may contact the Chairperson of Ethics Committee on +260 955155633/ +260 955 155634.

I have read this consent form and know that I may ask questions now and any time. I will also be given a copy of the consent form for my records. I consent for my child to participate in the research described above.

Name of the child: _____

Date: _____

Signed:_____ ***(Parent/Guardian of participant)***

Appendix 7: School Permission Form

Your female pupils (grades 4 and 5) are invited to participate in a research study being conducted by Fortress Kucheba. The purpose of the research is to study the acceptability of the Human Papiloma Virus (HPV) vaccine among stakeholders in Lusaka. Among the stakeholders are the pupils who are the target group for the vaccine. Your pupils are in the target group which is all girls aged between 9 and 11. The session will be digitally recorded.

Your pupils will answer a series of questions regarding the subject matter. There are no known risks associated with this research other than the potential for sharing some personal or confidential information by chance or feeling uncomfortable talking about some topics.
There are no known benefits other than the knowledge gained from having participated.

The interview will take no longer than one hour. Your pupils' participation is voluntary. They may choose not to participate in this research study. If they agree to participate, they can withdraw from the study at any time. I will do everything I can to protect their privacy. Their names will be recorded only for scheduling and assent purposes. All data will be identified only by a subject number. Any materials containing their names (e.g. assent forms) will be kept in a separate locked file. Any record linking your pupils' names to a particular subject matter will be destroyed once the study is complete. No identities will be revealed in any publication.

If you have any questions, please contact the investigator, Fortress Kucheba on 0965942679/ 0977657010. If you have questions about your pupils' rights as research participants, you may contact the Chairperson of Ethics Committee on +260 955155633/ +260 955 155634.

I have read this consent form and know that I may ask questions now and any time. I will also be given a copy of the consent form for my records. I consent for my child to participate in the research described above.

Names of the pupils: _____
Date:_____
Signed:_____ ***(Head Teacher)***

Appendix 8: In Depth Interview Guide for parents

ID #: .....Interviewer: ……Date of interview: …….

1) What is HPV?
2) What is HPV vaccine?
3) Who is supposed to be vaccinated against HPV?
4) How did you come to know about HPV vaccine?
5) What's your take on vaccines in general?
6) Do you think your daughter is/would be at risk of cervical cancer? Why?
7) Do you think the vaccine is safe for the girls?
8) If the vaccine were recommended by a doctor for your child, would you take it up? Why?Why not?
9) Do families/friends influence accessibility and acceptability of the HPV vaccine in any way? How?
10) In what ways does society (behaviors, beliefs, values) affect accessibility to the HPV vaccine? (positive or negative)
11) What are the rumors surrounding the HPV vaccine?
12) What do you think about the age at which the HPV vaccine is given?
13) Do you think the HPV vaccine can promote undesirable behaviours in girls?
14) Do you think parents and girls out there are provided with enough information about cervical cancer and the HPV vaccine?
15) What is your opinion regarding the way the HPV vaccine is provided? (3 doses)
16) What is your opinion regarding the environment in which it is provided? (school-based)
17) What is your opinion regarding the people administering it?
18) Has the service-delivery process got any effect on girls/ parents/ schools?
19) Is the vaccination process costing you in any way?
20) How can the provision of the HPV vaccine be improved?

If there are no questions or concerns, we have now come to the end of our interview. Thank you very much for your time and your participation.

Appendix 9: Key Informant Interview Guide

ID #: …… Interviewer: …….. Date of interview: ……

1) Tell me how the HPV vaccine roll out has been going on.
2) What has been your role in this whole vaccination process?
3) What has been the concerns of girls?
4) What have been the concerns of parents?
5) What did the parents like about the vaccine?
6) What did the parents dislike about the vaccine?
7) What are the rumors surrounding the vaccine?
8) What does the community say about the safety of the vaccine?
9) Is cervical cancer seen as a health problem in this community?
10) Are their concerns from parents and families about vaccinating girls at that age?
11) Do you think parents and girls are provided with enough information about the vaccine?
12) What is your opinion regarding the way the vaccine is provided? (3 doses)
13) What is your view about the environment? (school-based)
14) What is your view regarding the people administering it?
15) Has the service-delivery process got any effect on the girls/parents/schools/health workers?
16) In what way is service-delivery process affecting accessibility in general?
17) How can the provision of the vaccine be improved?

If there are no questions or concerns, we have now come to the end of our interview. Thank you very much for your time and your participation.

Appendix 10: Focus Group Discussion Interview Guide for girls

Q1. What do you know about cervical cancer?

Q2. How is it transmitted?

Q3. Who can have cervical cancer?

Q4. How can cervical cancer be prevented?

Q5. What is HPV vaccine?

Q6. How is it administered?

Q7. What are the benefits of being vaccinated?

Q8. What are the disadvantages/effects of being vaccinated?

Q9. How can HPV vaccine help or harm someone like you?

Q10. How did others react to your vaccination/non vaccination against HPV?

Q11. Why did/didn't you get vaccinated?

Q12. Do you think other girls would like HPV vaccine to be available? why?/why not?

Q13. Would you want HPV vaccine to be available for yourself? Why?/ why not?

Q14. What makes girls accept to be vaccinated?

Q15. What prevents girls from being vaccinated?

Q16. What can be done to enhance the vaccination process?

If there are no questions or concerns, we have now come to the end of our interview. Thank you very much for your time and your participation.

Appendix 11: In-depth Interview guide for the two vaccinated girls at Kings Highway SDA School.

ID #.....Interviewer:…… Date of interview…….

Q1. What were you receiving today?

Q2. What are the benefits of being vaccinated?

Q3. What are the effects of being vaccinated?

Q4. How could HPV vaccine help or harm someone like you?

Q5. How did others react to your vaccination against HPV?

Q6. Do you think girls you know would want HPV vaccine to be available? why?/why not?

Q7. Would you want HPV vaccine to be available for yourself? Why?/why not?

Q8. What makes girls accept to be vaccinated?

Q9. What prevent girls from being vaccinated?

Q10. What can be done to improve the vaccination process?

If there are no questions or concerns, we have now come to the end of our interview. Thank you very much for your time and your participation.