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Original Research Article

Knowledge and attitudes of parents/guardians towards uptake of Human Papilloma Virus (HPV) vaccine in preventing cervical cancer among girls in Zambia

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Abstract

The study aimed to determine the knowledge and attitudes of parents/guardians towards Human Papilloma Virus (HPV) vaccine in preventing cervical cancer among girls in Zambia. This is a descriptive cross sectional study carried out on 200 parents/guardians of school going girls aged 9 to 13 year who were randomly selected and interviewed. 68.5% of the respondents had ever heard about HPV vaccine and their source of information on the HPV vaccine was the media (35.5%), 74% knew that girls from 9 to 13 years should get the HPV vaccine and that the HPV vaccine prevented the adolescent girls from acquiring HPV infection and developing cervical cancer later in life (66%). The results showed that (40%) said that the HPV vaccine could be obtained from the clinic, 63% of the respondents were aware that the HPV vaccine should be given to girl children aged 9-13 years because they are not yet sexually active and 70.5% said the HPV vaccine could not protect them against sexually transmitted infections. Most of the respondents (73%) said HPV vaccine is administered in Zambia, 50% said that HPV vaccinations campaign has been widely publicized in Zambia and another half said that HPV vaccination campaign has not been widely publicized in Zambia and 64% had heard of HPV vaccine being given in Zambia. Data from this study showed that 71% of the respondents said that HPV could not cause infertility and that vaccinating girl children at the age of 9 to 13 might not encourage girl children to indulge in early sexual activity (77.5%), 62% were aware that the HPV vaccine does cannot be given to people who are already sexually active, 55% were aware know how many doses of HPV vaccine were needed for a girl child to be fully protected and 64% reported that there were no socio cultural practices that could prevent the parents/ guardians to consent the girl children to receive the HPV vaccine. 79.5% had no fears of the girl children being aware of sexual issues at a tender age however, 54% said that there no cultural barriers that could prevent them from talking to their girl children about sexual issues. The majority of the respondents (94%) had ever heard about cervical cancer and stated that cervical cancer was a serious disease of cervix and 90.5% said that cervical cancer was the common cancer among women in Zambia, 77.5% said that cervical cancer can be caused by the HPV, knew that it can be cured if treated early (69%) and that cervical cancer can threaten the relationship between husband and partner (72%). Most respondents (84%) agreed that HPV vaccine was helpful in preventing cervical cancer and was necessary for all the girl children of 9 to 13 years to be given HPV vaccine (81.5%), 83% agreed that they would allow their girl children to be given the HPV vaccine and were of the opinion that it was important to talk to girl children on sexual issues that would go hand in hand with having them vaccinated for HPV (75%). This study demonstrates the importance of continued health promotion programmes and awareness campaigns for increasing community awareness about HPV, HPV vaccine and cervical cancer.

Keywords: Attitudes, Cervical Cancer, Girls, Human Papilloma Virus Vaccine, Knowledge, Parents/ Guardians, Uptake

INTRODUCTION

The Human Papilloma Virus (HPV) is a group of more than 100 viruses that may cause warts or benign tumours. Of over thirty types can be passed from person to person through sexual contact. HPV is the most common sexually transmitted infection worldwide. The Alliance for cervical cancer prevention (ACCP) estimates that fifty to eighty percent of the sexually active women will be infected with the virus at least once in their life time (ACCP, 2004) and the majority of the women are infected in their teens (20s or early 30s). According to ACCP most HPV infections occur without any symptom and go away without any required treatment. Persistent infection with high risk HPV types increases a woman's risk of developing invasive cervical cancer. Two types of HPV, 16 and 18, account for approximately 60 to 70% of cervical cancer cases. The rates of most STIs are higher among adolescents, young adults, majority populations and populations with low socio economic status (Walker, 2009).

Cervical cancer remains a significant cause of morbidity and mortality in developing countries due to the lack of access to early detection and treatment services. Globally, estimated half a million cases are detected and over a quarter million women die from cervical cancer each year. More than 80% of these women reside in resource-limited nations that have access to less than 5% of the global health resources and of the estimated 525,000 new cases of cervical cancer and 275,000 deaths from cervical cancer in 2008, over 85% were in developing countries (ACCP, 2004). In 2008, 80,574 new cases and 36,058 deaths were reported in America with 85% of this burden occurring in Latin America and the Caribbean. Over 20% of the annual deaths from cervical cancer occur in countries in sub-Saharan Africa, such as Zambia, where it is the most common cause of cancer death among women (Liu et al., 2012).

Zambia has one of the highest incidence rates of cervical cancer in Africa, estimated at 54 cases/100,000 women per year, and the associated mortality rate is 44 deaths/100,000 women per year. According to the WHO ranking of 2011, cervical cancer deaths in Zambia reached 1276 (0.75%) of total deaths and is on number three (3) worldwide (Liu et al., 2012). Of the women in developing countries who die of the cervical cancer, the majority have never had a screening examination for the disease. In 2006, the government of Zambia implemented a cervical cancer screening program which utilizes the "see-and-treat" and visual inspection with acetic acid (VIA) model of evaluation which has been successful, screening approximately 10,000 women per year since its inception. In 2011, approximately 57,000 women were screened (Liu et al., 2012).

The Zambian Government in an attempt to save the next generation of women from cervical cancer caused by Human Papilloma Virus (HPV), found in men and transmitted through sexual contact adopted the HPV vaccination programme in 2013, which is rolled out in three (3) districts of Lusaka province namely; Lusaka, Chongwe and Kafue. HPV vaccine prevents against HPV types 16 and 18 responsible for 70% of cervical cancer cases. The first vaccine against Human Papilloma Virus was administered in Zambia on 27th May, 2013 at the launch of Zambia's HPV vaccination campaign in Chongwe. The HPV vaccine is given to girls aged 9 to 13 years in a series of three doses over 6 months to protect against HPV infection and the health problems that HPV infection can cause (Walker, 2009). HPV vaccines offer the best protection to girls who receive all three vaccine doses and have time to develop an immune response before being sexually active hence the reason for it being recommended in girls of age 9 to 13 years.

The Human Papilloma Virus vaccine (HPV) has shown to be highly effective in preventing HPV in young women not previously exposed to the virus or prior to the onset of sexual activity and is effective for five years (Walker, 2009). The HPV vaccine against cervical cancer prevention in girls was initiated worldwide in 2006 and the Global target for adolescent vaccination is at 80% (Walker, 2009). Since the discovery of the HPV vaccine, it has been widely accepted and implemented successfully in USA and Europe (Walker, 2009). However, developing countries including Zambia are still lagging behind in terms of providing this service to the populations that mostly need it.

In Zambia, the HPV vaccination programme against cervical cancer in girls started in 2013 and was launched on 27th May and targeted to vaccinate about 50,000 girls by 2013 and 2014. However, parents/ guardians of girls did not want to give consent to have their children immunized (Liu et al., 2012). Since the program started, only 96% of the 25,000 intended target in the first phase have been vaccinated (Mwanahamuntu, 2013**).** The target can only be achieved if parents/guardians have adequate knowledge about cervical cancer, Human Papilloma Virus and the HPV vaccine coupled with a positive attitude towards the vaccine. Hence the purpose of carrying out this research to determine the knowledge and attitude of parents /guardians towards HPV vaccine in the four districts of Zambia namely Namwala, Monze, Chipata and Lusaka in order to inform policy makers and the relevant stake holders on the situation obtaining so that appropriate action may be taken to improve.

METHODS

The study used descriptive cross sectional study to determine the knowledge and attitude of parents/ guardians towards the uptake HPV vaccine in preventing cervical cancer among school going girl children of 9-13

years. The study population comprised parents/guardians of school going girl children residing in Chipata, Monze, Lusaka and Namwala districts. The girl children were schooling at Mwami central school, Nthombimbi and Katamba primary schools in Chipata district, Chawama, Kabwata and Kamulanga primary schools in Lusaka distric, Monze, Broad view and Manungu primary schools in Monze district and Lubanga, Shabongwe, Namwala central and Kalundu primary schools in Namwala district.

Multistage random sampling was used to select the study units. In stage one, four provinces out of 10 were selected using simple random sampling method. Then four districts were also randomly selected from the selected four provinces. Three primary schools were randomly selected using simple random sampling method from each of four districts under study. Two hundred (200) respondents were selected from each district using simple random sampling method. The parents/guardians were reached out with the help of the School administration.

Data was collected using a pre tested questionnaire. The knowledge questionnaire on HPV infection and cervical cancer had had a total of 12 items. A score value of one (1) was allotted to each correct response. Knowledge scores were arbitrary divided into three categories namely high (80-100%), medium (70-50%) and low (below 50%) levels of knowledge. The attitude scale regarding HPV vaccine had 6 items with responses Strongly Agree (SA), Agree (A), Uncertain (U), Disagree (DA) and strongly Disagree (DS). The positive statements had a scoring of 5,4, 3, 2, 1 and the negative statements had a scoring of 1,2, 3,4, 5. The variable attitude was further classified into two categories according to the scores obtained. Parent/Guardians with negative attitudes scored 6-21 and those with positive attitudes scored 22-30.

The study was approved by the University of Zambia biomedical research ethics committee and permission to conduct the study was obtained from the concerned districts. Personal consent was obtained from the respondents.

Data was analysed using the Statistical Package for Social Sciences (SPSS) version 16. Chi-square test was used to test the associations between knowledge and attitude of parents/ guardians towards the uptake HPV vaccine in preventing cervical cancer among girl children of 9-13 years in Zambia and the following variables sensitization, misconceptions, religious beliefs and seriousness of the HPV infection. The level of significance was set at 5% and P values of 0.05 or less were considered statistically significant.

RESULTS

The study sample comprised 200 respondents whose age distribution ranged between 15 years to 45 years and above. About 25% of the respondents were between 30 and 34 years, 74% were females and 38.5% were Tonga speaking people (38.5%). Approximately 35% of the respondents had attained College education, 46% were in formal employment 76.5% were married and all (100%) were Christians. Forty three percent of the respondents' spouses were not employed (43.5%), lived in town (55.5%), had about 1 - 3 girl children (92.5%) and 163 (81.5%) were biological parents to the girl children (Table 1).

Most of the respondents (64%) reported that they had heard about Human Papilloma Virus (HPV) infection (Table 2). The majority of the respondents (64%) stated that HPV infection can be transmitted through sex, caused cervical cancer (69%), that using a condom could provide partial protection against HPV infection (72%) and that anyone who has had sex could get HPV infection (70%). The highest percentage of the respondents (86.5%) said that HPV infection could be prevented and that multiple sexual partners increased the risk of acquiring HPV infection (82%).

In this study, most of the respondents (68.5%) had ever heard about HPV vaccine and their source of information on the HPV vaccine was the media (35.5%). Seventy four percent (74%) knew that girls from 9 to 13 years should get the HPV vaccine and that the HPV vaccine prevented the adolescent girls from acquiring HPV infection and developing cervical cancer later in life (66%). Most of the respondents (40%) said that the HPV vaccine could be obtained from the clinic.

The results showed that 63% of the respondents were aware that the HPV vaccine should be given to girl children aged 9-13 years because they are not yet sexually active and 70.5% said the HPV vaccine could not protect them against sexually transmitted infections. Most of the respondents (73%) said HPV vaccine is administered in Zambia. Half of the respondents (50%) said that HPV vaccinations campaign has been widely publicized in Zambia and another half said that HPV vaccination campaign has not been widely publicized in Zambia and 64% had heard of HPV vaccine being given in Zambia.

Data from this study showed that 71% of the respondents said that HPV could not cause infertility and that vaccinating girl children at the age of 9 to 13 might not encourage girl children to indulge in early sexual activity (77.5%). The majority of the respondents (62%) were aware that the HPV vaccine does cannot be given to people who are already sexually active, 55% were aware know how many doses of HPV vaccine were needed for a girl child to be fully protected and 64% reported that there were no socio cultural practices that could prevent the parents/guardians to consent the girl children to receive the HPV vaccine. Some respondents (79.5%) had no fears of the girl children being aware of sexual issues at a tender age however, 54% said that there no cultural barriers that could prevent them from

Table 1. Respondents demographic data (n-200)

Variable		Frequency	Percent
Age	15 to 19 years	1	.5
	20 to 24 years	15	7.5
	25 to 29 years	26	13.0
	30 to 34 years	49	24.5
	35 to 39 years	48	24.0
	40 to 44 years	25	12.5
	45 years and above	36	18.0
	Total	**200**	**100.0**
Gender	Female	148	74.0
	Male	52	26.0
	Total	**200**	**100.0**
Tribe	Tonga	77	38.5
	Bemba	30	15.0
	Nyanja	49	24.5
	Lozi	13	6.5
	Others	31	15.5
	Total	**200**	**100.0**
Level of education	Never been to school	7	3.5
	Primary school	42	21.0
	Secondary school	62	31.0
	College	69	34.5
	University	20	10.0
	Total	**200**	**100.0**
Occupation	Formal Employment	153	76.5
	Not employed	47	23.5
	Total	**200**	**100.0**
Marital status	Married	151	75.5
	Divorced	8	4.0
	Single	19	9.5
	Widowed	16	8.0
	Separated	6	3.0
	Total	**200**	**100.0**

Table 2. Knowledge about HPV infection

Variable	Frequency	Percent
1. Have ever heard about HPV infection		
Yes	128	64
No	72	36
Total	200	100.0
2.Can HPV infection transmitted through sex		
Yes	128	64
No	72	36
Total	200	100.0

Table 2. Continue

3. Does HPV infection cause cancer of the cervix?		
Yes	138	69
No	62	31
Total	200	100.0
4. Using a condom could partially protect one from contacting HPV infection.		
Yes	144	72
No	56	28
Total	200	100.0
5. Anyone who has had sex could contract HPV infection		
Yes		
No	140	70
Total	60	30
	200	100.0
6. HPV infection could be prevented		
Yes		
No	173	86.5
Total	27	13.5
	200	100.0
7. Multiple sexual partners increased the risk of acquiring HPV infection		
Yes		
No	64	82
Total	36	18
	200	100.0

Table 3. Knowledge about cervical cancer

Variable	Frequency	Percent
1. Had ever heard about cervical cancer		
Yes	188	94
No	12	6
Total	200	100.0
2. Cervical cancer a serious disease		
Yes		
No	181	90.5
Total	19	9.5
	200	100.0
3. Cervical cancer can be caused by HPV		
Yes	155	77.5
No	45	32.5
Total	200	100.0
4. Cervical cancer can be treated if diagnosed early		
Yes	138	69
No	62	31
Total	200	100.0
5. Cervical cancer can threaten the relationship between husband and partner	144	72
Yes	56	28
No	200	100.0

Table 4. Parents/Guardians knowledge level of HPV infection and Cervical Cancer (n- 200)

Knowledge on HPV, HPV vaccine and Cervical Cancer	Scores		Total
	Frequency	Percentage	
High knowledge	64	32%	64 (32%)
Medium knowledge	74	37%	74 (37%)
Low knowledge	62	31%	62 (31%)
Total	200	100%	200 (100%)

Table 5. Percentage distribution of parent/guardians according to their attitude scores

Variable	Frequency	Percent
Negative	82	41.0
Positive	118	59.0
Total	200	100.0

talking to their girl children about sexual issues.

The majority of the respondents (94%) had ever heard about cervical cancer and stated that cervical cancer was a serious disease of cervix and 90.5% said that cervical cancer was the common cancer among women in Zambia (Table 3). Most respondents (77.5%) said that cervical cancer can be caused by the HPV, knew that it can be cured if treated early (69%) and that cervical cancer can threaten the relationship between husband and partner (72%).

Most respondents (84%) agreed that HPV vaccine was helpful in preventing cervical cancer and was necessary for all the girl children of 9 to 13 years to be given HPV vaccine (81.5%). Eighty three percent (83%) of the respondents agreed that they would allow their girl children to be given the HPV vaccine and were of the opinion that it was important to talk to girl children on sexual issues that would go hand in hand with having them vaccinated for HPV (75%). (Table 4)

Thirty seven percent (37%) of parents/Guardians had medium knowledge, 32% had high knowledge and 31% had low knowledge on HPV infection and cervical cancer.

The data presented in table 5 show that 59% of the parents/guardians had a positive attitude towards the HPV vaccine and 41% had a negative attitude.

Associations of knowledge scores with demographic characteristics

There was a significant association between knowledge scores and parents/Guardian's age, educational level and occupational status.

DISCUSSION OF FINDINGS

The purpose of the study was to determine the knowledge and attitudes of parents/ guardians towards the uptake of Human Papilloma virus (HPV) vaccine in preventing cervical cancer among girls. A total of 200 respondents whose age distribution ranged between 15 years to 45 years and above participated in the study. Most of the respondents were between 30 and 34 years (24.5%), were females (74%) and were Tonga speaking people (38.5%). About 35% of the Parents/Guardians had attained College education, 76.5% were in formal employment and 75.5% were married (Table 1).

The findings demonstrated that more than two thirds of the parents/guardians (68.5%) in this study had ever heard about HPV vaccine and their source of information on the HPV vaccine was the media (35.5%). Seventy four percent (74%) knew that girls from 9 to 13 years should get the HPV vaccine and that the HPV vaccine prevented the adolescent girls from acquiring HPV infection and developing cervical cancer later in life (66%). More than one third of the respondents (40%) were aware of where the HPV vaccine could be obtained (Table 2). The study has shown that the respondents were aware about the HPV. This could be attributed to the sensitization about the HPV by the Ministry of Health in conjunction with cancer diseases hospital. Similarly, Toffolon-Weiss and colleagues (2005) reported similar findings in a study conducted in Alaska. Contrary to these findings, a study conducted in Syria by Alsaad et al. (2012) on knowledge about HPV infection and HPV Vaccine among Syrian mothers revealed that less than a third of the mothers had heard of HPV infection and Vaccines against cervical cancer and levels of knowledge were generally very low. Several researchers who have reported similar findings include Cunningham et al. (2014); Perlman et al. (2014); Owonikoko et al. (2013); Proma et al. (2013), Becker-Drepes et al. (2011) and Toffolan et al. (2008).

The results showed that 63% of the respondents were aware that the HPV vaccine should be given to girl children aged 9-13 years because they are not yet

sexually active and 70.5% said the HPV vaccine could protect them against cervical cancer but not sexually transmitted infections. Most of the respondents (64%) had heard of HPV vaccine being given in Zambia. This awareness could be attributed to the sensitization campaigns by the Ministry Health in conjunction with Cancer diseases hospital.

With regards to misconceptions about the HPV vaccine, the parents/Guardians were asked to state whether the vaccine could cause infertility in girls. Data from this study showed that 71% of the respondents said that HPV could not cause infertility and that vaccinating girl children at the age of 9 to 13 might not encourage girl children to indulge in early sexual activity (77.5%). The majority of the respondents (62%) were aware that the HPV vaccine cannot be given to people who are already sexually active, 55% were aware how many times HPV vaccine should be given for a girl child to be fully protected and 64% reported that there were no socio cultural practices that could prevent the parents/guardians to consent the girl children to receive the HPV vaccine. Most of the respondents (79.5%) stated that they had no fears of the girl children being aware of sexual issues at a tender age which could make them misbehave however, 54% there were no cultural barriers that could prevent them from talking to their girl children about sexual issues.

In the present study, awareness levels about cervical cancer were high. Ninety four percent of the respondents (94%) had ever heard about cervical cancer and were aware that cervical cancer is a serious disease and 90.5% said that cervical cancer was the common cancer among women in Zambia (Table 3). Most respondents (77.5%) said that cervical cancer can be caused by the HPV, knew that it can be cured if treated early (69%) and that cervical cancer can threaten the relationship between husband and partner (72%). This increase in knowledge about cervical cancer may be attributed to a Cancer diseases Hospital nationwide campaign designed to increase awareness of cervical cancer. On the contrary, several studies have reported low knowledge level about cervical cancer (Proma et al., 2013; Becker-Drepes et al., 2011). The overall knowledge scores for show that 37% of parents in this study had medium levels of knowledge of HPV infection and cervical cancer (Table 4).

Most respondents (84%) agreed that HPV vaccine was helpful in preventing cervical cancer, was necessary to discuss issues of HPV vaccine to the girl children (85%) and was necessary for all the girl children of 9 to 13 years to be given HPV vaccine (81.5%). Eighty three percent (83%) of the respondents stated that they would allow their girl children to be given the HPV vaccine and were of the opinion that it was important to talk to girl children on sexual issues that would go hand in hand with having them vaccinated for HPV (75%). This finding is in line with Toffolon-Weiss et al., (2008) and Owonikoko et al., (2013) in Alaska and Nigeria respectively.

Most Parents/Guardians interviewed (84%) agreed that HPV vaccine was helpful in preventing cervical cancer and was necessary for all the girl children of 9 to 13 years to be given HPV vaccine (81.5%). Eighty three percent (83%) of the respondents agreed that they would allow their girl children to be given the HPV vaccine and were of the opinion that it was important to talk to girl children on sexual issues that would go hand in hand with having them vaccinated for HPV (75%). This indicates that parents/Guardians were aware of the preventive and protective attributes of the HPV vaccine as a perceived benefit for having their girl children vaccinated. Perlman et al. (2014) Cunningham et al. (2014), Owonikoko et al. (2013), Liu et al. (2012) Toffolon-Weiss et al., (2008) and Zimet et al. (2006) reported similar findings. The overall attitudes levels indicate that 59% of the parents/Guardians had positive attitudes towards HPV vaccine (Table 5).

CONCLUSION

The results showed parent/Guardians of girls aged 9 -13 years had some knowledge about the Human papilloma virus infection and cervical. They also had positives attitudes toward the Human papilloma virus vaccine. There is a need however, for continued community sensitization to maximize the uptake of the human papilloma virus vaccine.

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