ORIGINAL RESEARCH ARTICLE

Human Papilloma Virus Vaccine: Determinants of Acceptability by Mothers for Adolescents in Nigeria

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Abstract

Vaccination of adolescent females against Human Papilloma Virus (HPV), the causative agent for cervical cancer has recently become available. As minors, parental acceptance of the vaccines for adolescent daughters requires exploration. This was a cross-sectional survey of 201 mothers attending the gynaecology clinic in a University Teaching Hospital in Nigeria on acceptability of the HPV vaccines and its determinants. Although 70% accepted vaccination of their daughters, 30% were unwilling and the commonest reason for unwillingness was that it may encourage sexual promiscuity (62.3%). Mothers with poor knowledge of STI were significantly more unwilling to accept HPV vaccines compared to those with average or good knowledge (p=0.002). Furthermore, perception of susceptibility to HPV infection by daughters was significantly associated with acceptance of the vaccines (p=0.0001). Increased advocacy and public enlightenment on cervical cancer control and the role of HPV vaccines in its prevention is still necessary especially in developing countries. *(Afr J Reprod Health 2014; 18[3]: 154-158)*

Keywords: Cervical cancer, Human papilloma virus, vaccine, Nigeria

Résumé

La vaccination des adolescentes contre le virus du papillome humain (VPH), l'agent causal du cancer du col, vient récemment d'être disponible. Comme les mineurs, l'acceptation parentale des vaccins pour les filles adolescentes nécessite l'exploration. Il s'agissait d'une étude transversale auprès de 201 mères qui fréquentent la clinique de gynécologie dans un Centre Hospitalier Universitaire au Nigeria sur l'acceptabilité des vaccins contre le VPH et de ses déterminants. Bien que 70% aient accepté la vaccination de leurs filles, 30% ont refusé et la raison la plus courante pour le refus était que cela peut encourager la promiscuité sexuelle (62,3%). Les mères qui ont une mauvaise connaissance des ISTs étaient, de façon significative, plus disposés à ne pas accepter les vaccins HPV par rapport à celle qui ont une connaissance moyenne ou bonne (p = 0,002). En outre, la perception de la susceptibilité à l'infection par le VPH filles était significativement associée à l'acceptation des vaccins (p = 0,0001). Un plaidoyer accru et la sensibilisation du public sur le contrôle du cancer du col et le rôle des vaccins contre le VPH dans la prévention, est toujours nécessaire surtout dans les pays en développement. *(Afr J Reprod Health 2014; 18[3]: 154-158)*

Mots-clés: cancer du col utérin, virus du papillome humain, vaccins, Nigeria

Introduction

Cancer of the cervix is the second most common cancer among women in developing countries[1]. Worldwide, cervical cancer accounts for about 530,000 new cases diagnosed and 275,000 new deaths each year[2]. In Nigeria, it is the commonest cancer of the female genital tract with about 10,000 deaths annually[2]. Invasive cervical cancer arises over many years of persistent infections with Human Papilloma Virus, a sexually transmitted infection which has been identified as a prerequisite for the disease[2-5]. It is therefore a potentially preventable disease if infection with the HPV virus can be prevented.

Vaccines that protect against infections with common serotypes of HPV implicated in the aetiology of cervical cancer are now widely available in many developed countries. *The adolescent period is the period in which women become sexually active and are at risk of acquiring HPV.* Vaccination against HPV infection among adolescents therefore may be a cost effective strategy to control cervical cancer especially in developing countries like Nigeria with a high prevalence of cervical cancer but

lacking an organised screening programme. Since the vaccine is targeted at adolescents who are regarded as 'legal minors' in Nigeria, parental consent and acceptance of the vaccines to be administered to them is an important consideration. Although several studies have explored parental acceptance in developed countries[6,7,8], there is limited published data from the West African sub region. As HPV vaccines become more widely accessible, acceptance of HPV vaccines for young adolescents by their parents cannot be assumed especially in this region where social, cultural and economic dynamics differ markedly from what is obtainable in developed countries.

This study was therefore designed to evaluate the acceptability of HPV vaccines among a population of Nigerian women for their adolescent daughters and identify factors that may influence vaccine acceptance including the determinants of unwillingness to accept HPV vaccination for daughters. The data from this work will assist in designing policies and programmes that will increase the uptake and acceptability of the HPV vaccine in an environment with a high burden of cervical cancer but lacking a formal, organised screening programme for the disease.

Methods

This study was a cross-sectional survey of mothers attending the gynaecologic clinic at the University of Benin Teaching Hospital, Edo state, Nigeria from July to December 2009. The Hospital serves as the apex referral urban health facility in the state and provides care for a population of about 3 million people. Patients are usually referred to the Gynaecology clinic from primary or secondary health facilities in the catchment area of the Hospital or the Hospital's General Practice Clinic. Ethical approval for the work was obtained from the institutions ethics and research committee.

The participants were women who were the primary care giver of a child who was over 10 years. They were recruited after giving informed consent to participate in the study. Participants completed an interviewer administered semi-structured four part questionnaire. All interviews were conducted by trained female medical doctors (interns) who were members of the team providing care for the participants.

The parts of the questionnaire respectively addressed attitude about adolescent sexual behaviour, knowledge about cancer and common sexually transmitted infections *(STI)*, belief about HPV vaccine and sexuality; attitude about vaccination against HPV. Attitude about adolescent sexual behaviour was assessed by the respondent's view on the acceptable age for initiation of sexual intercourse. Knowledge of STI's was assessed using response to a set of 4 questions on STI's and HPV infection. It was considered 'high' if 3 or more response is correct, average if 2 response is correct and low if correct response is less than 2 four questions about STI and HPV. The willingness of respondent's to accept HPV vaccine for their female child was assessed using a structured 'yes or no' response to direct questioning if the participant will consent to the child being vaccinated with HPV vaccine.

Statistical analysis was with the SPSS package (Statistical Package for the Social Sciences, SPSS version 13.0, Chicago, IL). Chi-square and Fisher's exact test were used where appropriate to identify factors that were significantly associated with willingness of respondents to accept the vaccination of their female child with HPV vaccines. P value < 0.05 was considered statistically significant.

Results

Two hundred and one (201) mothers (age range 18 – 72 years) answered the questionnaires. The mean age of the respondents was 42.1 years. While 70% of respondents accepted to vaccinate daughters, 30% were unwilling. The reasons for unwillingness to accept the vaccine includes: it may encourage promiscuity (62.3%), no reason (31.0%), religious belief (3.3%), cost (1.7%) and concern over safety (1.7%).

In Table 1, the socio-demographic characteristics of mothers who accepted the vaccines for their daughters is compared against those who were unwilling to accept. . Mothers who accepted vaccination for their daughters were significantly younger than those who did not accept it (40.2 ±13.4 years versus 45.3 ±15.5

years, P = 0.02). In addition, they significantly had more post primary education (86 % vs 14%, P < 0.01) and reported a family history of cancer (43.6% Vs 23%, P=0.005).

In Table 2, the determinants of HPV vaccine acceptability is presented. Mothers who had poor knowledge of STI were significantly more unwilling to accept HPV vaccines for their daughters compare to those with average or good knowledge (p=0.002). Furthermore, respondents who felt their daughters were susceptible to HPV infection were more among those willing to accept HPV vaccines for their daughters compared to those who felt they were unwilling to accept the vaccines. This difference was significant (p=0.0001). Other variables with one or more subgroups which significantly determined an inclination to accept HPV vaccines for daughters are shown in Table 2.

Table 1: Socio-demographic characteristics of the respondents

	Accept Vaccination N=140 (%)	**Unwilling to Accept N=61 (%)**	**P-value**
Age (mean±SD)	40.2 ± 13.4	45.3 ± 15.5	0.02
Education			
None/Primary	20(14.3)	31(50.8)	< 0.01
Post Primary	**120(85.7)**	**30(49.2)**	
Female Child			
Has Female Child	91(65.0)	48(78.7)	0.053
None	49(35.0)	13(21.3)	
Religion			
Christian	124 (88.6)	42(68.9)	<0.01
Islam	12(8.6)	6(9.8)	
None	4(2.9)	13(21.3)	
Family History of cancer	61(43.6)	14(23.0)	0.005

Discussion

The majority of women in this study accepted vaccination for their daughter at age range from birth to 18 years. This is consistent with previous studies on this topic[9-13]. Majority of younger women (≤ 40 years) and women with post-primary education, female child and family history of cancer were in support of accepting vaccination. This suggests that these groups of women are favourably disposed to vaccinating their children to prevent them from developing cervical cancer. Women who are more educated are expected to be more enlightened on contemporary issues and thus better positioned to make informed decisions. In trying to implement a health program of vaccinating 'at-risk' populations with the HPV vaccine, it may therefore be important to also improve access to education among women as it may help increase acceptability and uptake of the vaccines.

Other factors associated with acceptance of the vaccines in our study were a prior experience of cancer in her family and knowledge of STI's among the respondents. This finding is similar to the observation in a similar study by Marlow et al, vaccine acceptance was higher in mothers who had experience of cancer in their family or who had cancer[14]. The trauma and challenges associated with caring for a person living with cancer may partly explain this observation. Furthermore, respondents who had a 'high' score when knowledge about STI's was assessed were significantly more willing to accept the vaccines for their children. This suggests that there may be a need for more enlightenment and awareness on STI's and the relationship between HPV infection and subsequent cervical cancer. This may also be an intervention that will increase acceptability of population based programs designed to administer HPV vaccines in the prevention of cervical cancer.

Table 2: Determinants of HPV vaccine acceptability

Variable	Accept HPV vaccine N=140 (%)	Unwilling to accept HPV vaccine N=61 (%)	P-value
Attitude			
Sexual initiation acceptable at early age < 16.yrs.	31(22.1)	14(23.0)	0.899
Sexual activity not acceptable at an early age	109(77.9)	47(77.0)	
Knowledge of STIs			
High	26(18.60	2(3.3)	0.002
Average	**44(31.4)**	32(52.5)	
Low	70(50.0)	27(44.3)	
Perceived Susceptibility of child to HPV infection			
Susceptible	74(52.9)	16(26.2)	< 0.001
Not susceptible	66(47.1)	45(73.8)	
Concern about safety of vaccine			
Yes	120(85.7)	38(62.3)	<0.001
No	20(14.3)	23(37.7)	
STD vaccine leads to early initiation of sexual activity			
Agree	35(25.0)	29(47.5)	<0.001
Disagree	68(48.6)	7(11.5)	
No opinion	37(26.4)	25(41.0)	
Likely to have daughter vaccinated before 11 years			
Agree/likely	112(80.0)	17(27.9)	<0.001
Disagree/Unlikely	28(20.0)	44(72.1)	
Request for Vaccination by well informed child without parental consent			
Agree	101(72.1)	24(39.3)	<0.001
Disagree	**39(27.9)**	37(60.7)	
Informing children that HPV vaccines protect against STI's			
Agree	102(72.9)	27(44.3)	<0.001
Disagree	38(27.1)	34(55.7)	
Vaccination of all female child before they become sexually active			
Agree			
Disagree	123(87.9)	20(32.8)	<0.001
	17(12.2)	41(67.2)	

Given this data, one-third of the total respondents in this survey were disinclined to endorse HPV vaccination for their daughters. Promiscuity, finance, concerns about safety and religious beliefs were identified as reasons for declining HPV vaccination for daughter while 2 (3.3%) attributed their rejection of the vaccines to religious belief. About one third of the resistant mothers gave no reason for declining vaccination for daughter. Perceived susceptibility, concern about safety of vaccines, knowledge of STIs and early initiation of sexual activity from STD vaccine have been reported to be factors important in making decisions on accepting HPV vaccine[14,15,16,17,18]. The percentage of women declining HPV vaccination for daughter re-emphasizes a need for more advocacy and public health education on cervical cancer prevention especially in developing countries where the disease burden remains unacceptably high[2].

Since this was a hospital based survey among mothers accessing care in a Tertiary Hospital, the sample may not be completely representative of population. This is a limitation of the study.

However, as an exploratory study on an 'emerging subject' in Nigeria, the results are valid and have implications for policy formulation.

HPV vaccination is now accepted globally as a critical intervention for the successful control and prevention of cervical cancer. However, it is not yet routinely available in public health immunisation programs in many developing countries like Nigeria. Since the vaccine is usually administered to teenagers parental consent becomes necessary before administration. Understanding the factors and determinants that will influence the acceptability of the vaccines to the mothers of these teenagers is important for the success of interventions to make HPV vaccines accessible to a vulnerable population who are at risk of infection with HPV.). Increased advocacy and public enlightenment on cervical cancer control and the role of HPV vaccines in its prevention is still necessary especially in developing countries. Enlightenment programs to increase awareness on STI's and HPV infection are important. This will assist in the control and prevention of cervical cancer whose prevalence is still unacceptably high in many developing countries.

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