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Research Article

Factors Associated with Acceptance of Uptake of Human Papilloma Virus (HPV) Vaccine: Implications for Health Promotion

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Abstract

Background: Zimbabwe has a high burden of cervical cancer and HPV vaccination, can help prevent future cervical cancer in girls who are not yet sexually active.

Aims: Assessing factors associated with acceptance of uptake of HPV vaccine among guardians of girls aged between 9 and 14 years in Norton, Zimbabwe.

Methods: This was a descriptive survey conducted on a systematic random sample of 200 participants. Approval for the study was granted by the institutional review board. All participants gave informed consent. Data was collected through self-administered questionnaires. SPSS version 20 and STATA version 15 were used to analyse the data.

Findings: Marital status ($p = 0.003$), religion ($p < 0.001$) and level of education ($p = 0.045$) were associated with uptake. Barriers to uptake cited were lack of adequate information (87.5%), fear of adverse reactions (92.2%) and long-term health problems (90.6%).

Conclusion: Uptake of HPV vaccine was low. Health education is necessary to increase uptake.

Keywords: *Cervical Cancer; Human Papilloma Vaccine; Uptake; Barriers; Young Girls*

Introduction

Non-communicable diseases are an increasing problem for low and middle-income countries. Information on the size, nature and evolution of the health problem that they pose is required for formulation of control programs [1]. Cervical cancer, which is caused by the human papillomavirus (HPV), is the leading cause of cancer mortality among women in sub-Saharan Africa (SSA) [2]. It is the most common cancer among Zimbabwean women and around the world. Zimbabwe has the 5th highest burden of cervical cancer (19%) globally [3]. It is estimated that 2270 women are diagnosed with cervical cancer in Zimbabwe annually with a mortality rate of 64% [4]. Infection with HPV contributes to malignant changes in the cervix leading to cancer mortality among women. HPV vaccine is now available for its prevention, yet the level of uptake is low [5]. With the increased diversity of HPV subtypes detected in Zimbabwe, it would be of great benefit to access the monovalent HPV vaccine as a potential preventive measure. Community engagement is necessary to improve the uptake of health initiatives by communities including early screening for cervical cancer [6]. HPV vaccines have resulted in decreased the prevalence of cervical cancer in developed countries such as France and USA [6]. These vaccines were introduced fully in Zimbabwe

in May 2018 and were being given to girls aged 9 - 14 in primary and secondary schools. Uptake of HPV vaccine in Norton was 55% (Norton Medical records, 2018) which was suboptimal while the uptake in Zimbabwe was 79% (Health Ministry's Epidemiology and Disease Control, 2018). Averagely uptake of the vaccine among females aged between 10 and 20years globally is 7.5% [7]. Uptake of the human papillomavirus in the Sub-Saharan region overall is 59 - 100% [8]. For Kwazulu, Natal, South Africa uptake was 99.7%, 97.9% and 97.8% for first, second and third dose respectively [9]. While it is estimated that HPV vaccination schedules requiring two doses [10], will improve health outcomes and cost-effectiveness of HPV vaccination, uptake remains problematic [11]. The purpose of this study was to assess acceptance of uptake of HPV vaccine among guardians of girls aged 9 to 14 in Norton, Zimbabwe.

Methodology

This was a descriptive survey conducted in Norton, Zimbabwe on a systematic random sample of 200 guardians of girls aged 9 - 14. Participants were found in homes, schools, churches and business centers. Permission to conduct the study was granted by the institutional review board. All participants gave informed consent. Data were collected using a self-administered questionnaire which had sections on demographic data, knowledge of the human papillomavirus vaccine, uptake of HPV vaccine and barriers to uptake of human papillomavirus vaccine. Data were analyzed using SPSS version 20 and STATA. Descriptive statistics and chi square test were used to analyse the data.

Results

Table 1 below summarises demographic data. Marital status (p = 0.003), religion (p = 0.001) and educational level were associated with uptake of HPV vaccine.

Variable (n=200)	HPV vaccine uptake		Totals (%)	Chi-square p-value
	Yes (%)	No (%)		
Gender				
Male	38 (28.8)	26 (38.2)	64 (32.0)	
Female	94 (71.2)	42 (61.8)	136 (68.0)	0.175
Total	132(100.0)	68 (100.0)	200 (100.0)	
Marital status				
Single	18 (13.6)	16 (23.5)	34 (17.0)	
Married	86 (65.2)	50 (73.5)	136 (68.0)	
Divorced	18 (13.6)	0 (0.0)	18 (9.0)	0.003*
Widowed	10 (7.7)	2 (5.6)	12 (6.0)	
Total	132 (100.0)	68 (100.0)	200 (100.0)	
Employment				
Employed	60 (45.5)	36 (52.9)	96 (48.0)	
Unemployed	72 (54.5)	32 (47.1)	104 (52.0)	0.315
Total	132 (100.0)	68 (100.0)	200 (100.0)	

Religion				
Christian	114 (86.4)	40 (58.8)	154 (77.0)	
Muslim	12 (9.1)	16 (23.5)	30 (15.0)	
African Traditional	6 (4.5)	12 (17.6)	18 (9.0)	<0.001*
Total	132 (100.0)	68 (100.0)	200 (100.0)	
Education				
Primary	10 (7.6)	10 (14.7)	20 (10.0)	
Secondary	70 (53.0)	42 (61.8)	112 (56.0)	
Tertiary	52 (39.4)	6 (8.8)	68 (34.0)	0.045*
Total	132 (100.0)	68 (100.0)	200 (100.0)	
Income				
<500	66 (50.0)	33 (48.5)	99 (49.5)	
500-1000	46 (34.8)	26 (38.2)	72 (36.0)	
>1000	20 (15.2)	9 (13.2)	29 (14.5)	0.547
Total	132 (100.0)	68 (100.0)	200 (100.0)	
Age				
25-44	72 (54.5)	28 (41.2)	100 (50.0)	
45-64	50 (38.9)	32 (47.1)	82 (41.0)	
65 and above	10 (7.6)	8 (11.8)	18 (9.0)	0.183
Total	132 (100.0)	68 (100.0)	200 (100.0)	
Knowledge				
No	48 (36.4)	33 (48.5)	81 (40.5)	0.097
Yes	84 (63.6)	35 (51.5)	119 (59.5)	
Total	132 (100.0)	68 (100.0)	200 (100.0)	
Relationship				
Mother	84 (63.6)	36 (52.9)	120 (60.0)	
Guardian	48 (36.4)	32 (47.1)	80 (40.0)	0.144
Total	132 (100.0)	68 (100.0)	200 (100.0)	

Table 1: *Demographic data (n=200).*

Knowledge of HPV vaccine

Table 2 presents knowledge of HPV vaccine.

Variable	Frequency	Percentage
Awareness of HPV vaccine which protects against cervical cancer	119	59.5
Recommended for girls aged between 9 and 14 years	34	17
HPV vaccine is more effective when given to someone who is sexually active	90	45
Sexually active people can get the HPV vaccine	48	24
HPV vaccine does not cure cancer	114	57
HPV vaccine gives 90% protection against cervical cancer	76	38
Three doses of HPV vaccine must be administered to have maximum protection against cervical cancer	30	15
There are no severe adverse reactions related to HPV vaccine	68	34

Table 2: *Knowledge of HPV Vaccine (n=200).*

Reasons for non-uptake of HPV vaccine

Table 3 presents reasons for non-uptake of HPV vaccine.

Reasons for non-uptake	Frequency	Percentage
No one ever informed them about HPV vaccine	47	73.4%
Have inadequate information about HPV vaccine	56	87.5%
Safety of vaccine not yet confirmed	59	92.2%
Don't want daughters to be stigmatized promiscuous	30	46.9%
Vaccine might cause long lasting health problems	58	90.6%

Table 3: *Reasons for non-uptake of the HPV vaccine (n=64).*

Discussion

Engaging all key demographics through improved and increased education will elevate public trust, which is a critical component of successful implementation of widespread vaccine coverage [12]. Mean age of the participants was 37.2 years and there were more women than men probably due to availability of women at home when their husbands go out to work. Majority (90%) participants had attained at least secondary level of education. This is an opportunity for health education on importance of the HPV vaccine. Mass media campaigns and reading materials can be effectively utilised to sensitise the public. A higher education level is associated with better knowledge that might translate to acceptance of the vaccine [13,14]. Similarly, level of education in this study was significantly associated with uptake of HPV vaccine. Marital status was significantly associated with uptake probably due to spousal support as earlier on reported in another study [15]. Parental approval is important for vaccine uptake [5], and it is very vital to involve men in sexual reproductive health issues for women as they are commonly the main decision makers and providers especially in Sub Saharan Africa. Religion in this study was also significantly associated with uptake. Conservative cultures commonly do not address issues that concern reproductive health. Health

education for reproductive health issues in such cultures should be conducted at community and school levels for better sociocultural acceptance, especially with issues involving minors. Health issues among Zimbabweans traditionally are not seen as individual concerns, but as familial or community challenges [3]. Christians in this study constituted 77% and majority of them (86%) accepted the vaccine. Religious gatherings can be utilized as opportunities for health education campaigns. Encouragement from health care workers is very vital in acceptance of the HPV vaccine [16,17].

Knowledge of HPV vaccine

Knowledge of cervical cancer is very poor in some sections of the Zimbabwean population which might create misconceptions leading to poor health seeking behaviours [3]. Poor knowledge has also been reported in literature in studies conducted elsewhere [5,18-20]. Peer educators can be a vital source of information and encouragement to accept the HPV vaccine [5]. Research has shown importance of conducting education and awareness campaigns to improve the knowledge, attitudes and perceptions of cervical cancer [18]. Though mass media campaigns were done in Zimbabwe prior to the school vaccination programme, it is very important to conduct individualized education sessions to cater for varying levels of understanding. High awareness but little knowledge has also been reported in literature [21]. Participants in this study had varying knowledge of different aspects of HPV vaccine. Only 17% knew the correct age group for vaccination, 45% were aware of its effectiveness in people who are not yet sexually active and only 34% knew that it usually does not cause adverse reactions. This lack of full information affects decision making of mothers and guardians leading to unacceptability of the vaccine [22]. Health workers should focus on prevention of cervical cancer rather than diagnosis and treatment alone.

Uptake of HPV vaccine

Uptake of the first dose of the HPV vaccine in this study was 68%. This was way below the national target of 95% coverage. In order to make vaccines available to all women, regardless of socioeconomic status, the vaccination programs need to expand into the public sector, at a lower price through subsidiary funding from the government or donors [6]. This has been the case in Zimbabwe with the HPV vaccine for young girls. Majority of Zimbabweans are informally employed, of low socioeconomic status and rely heavily on the erratic public healthcare and cannot afford the HPV vaccine. It is very crucial to take advantage of this vaccination prorgramme that is being offered at no cost to the consumer. School based vaccination programmes achieve higher coverage. A same school based vaccination program done in Quebec achieved an 88.2% coverage [23]. while another one conducted in Nigeria achieved only 4.1% coverage [5]. Yet another one conducted in Ontario achieved 70.2% coverage [24]. Uptake appears to be higher in developed than in developing countries. School based strategies in low and middle income countries pose a challenge for reaching girls who do not go to school [25]. Door-to-door vaccination campaigns have been used as an effective strategy for delivering vaccines to hard-to-reach populations. However, the cost of door to door vaccinations might make it not feasible in a low resource setting like Zimbabwe.

Reasons for non-uptake

Some guardians (87.5%) cited lack of adequate information as a reason for declining screening for their children. While 92.2% doubted the safety of the vaccine, 90.6% feared both the short- and long-term health problems while 46.9% thought their children may be viewed as promiscuous. All these reasons are a result of limited knowledge. A further 46.9% were willing to have their children vaccinated as long as they had adequate information about the vaccine. Though interest in obtaining HPV vaccines has been reported among adolescents and young females in many countries worldwide, uptake remains low [26]. There are various barriers to uptake of HPV vaccination which include: worries about side effects and infertility [27], safety concerns, low perceived severity of HPV and lack of school order [11,23,28,29], the adolescents' anxieties about needles and needle cleanliness, anticipated pain on injection and privacy during vaccination [30]. Health care professional recommendations is one of the most important factors in parents' decision to vaccinate their children [28,16,31]. This underscores the importance of health education from health care workers. There should be consistent supply of vaccines at the vaccination sites and health education aimed at creating a positive attitude towards the vaccine [16].

Conclusion

Uptake of the HPV vaccine in this study was sub optimal. Marital status, level of education and religion were significantly associated with uptake of the vaccines. Health education is very important to improve uptake of the HPV vaccine. The most common barriers to uptake cited were inadequate knowledge and fear of side effects.

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