HPV AND HPV VACCINATION: AWARENESS AND ATTITUDES OF YOUNG FEMALE PAKISTANI STUDENTS

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Submission date: 19-Jun-2018 01:27PM (UTC+0500)
Submission ID: 976934513
File name: 18405-73348-1-RV.doc (272K)
Word count: 3707
Character count: 19112

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ABSTRACT

Objective: The present study was conducted to determine the level of awareness about Human Papillomavirus (HPV) and its association with cervical cancer among female students related to medical field in Pakistan. HPV is a sexually transmitted virus, and its subtype 16 is prevalent in cervical cancer patients in our country. HPV infection and its subsequent malignant manifestation can be prevented by vaccinating girls before they become sexually active.

Methods: A researcher administered, descriptive survey was conducted to a voluntary group of participants (n=629) belonging to the medical field, from Aug 2017 to Dec 2017.

Results: Despite of having a satisfactory level of knowledge among the respondents regarding HPV and cervical cancer, it was found that the vaccine was not generally accepted due to lack of knowledge about them, no clinician's recommendation and high cost. Around 24% respondents were not willing to be vaccinated as among them more than half were sexually inactive while about 60% participants were willing to get vaccinated if vaccine was provided free of cost and also would recommend it to others.

Conclusion: The researchers believe that a targeted information campaign and cost-waiver will significantly increase acceptability of the vaccine in Pakistani population so as to prevent and combat with the disease successfully.

Keywords: HPV vaccination, cervical cancer, Human Papillomavirus, awareness.

INTRODUCTION

Human Papillomavirus or HPV is a common sexually transmitted DNA virus that infects only the epithelial cells of the host. After entering the epithelial layer, viral gene expression begins in order to assemble infectious HPV virions in the final stages of the infection [1]. There are over a hundred subtypes of the virus and are classified as low-risk and high-risk depending on their potential for oncogenesis [2]. HPV may manifest itself as genital warts in both men and women, cervical dysplasia, or cervical or oropharyngeal cancers in some cases. However, majority of men and women infected with HPV do not show clinical symptoms of the disease and are resolved by the host's immune response within 2 years [3]. Moreover, the progression from infection to malignancy can take more than 10 years. Therefore, cervical cancer is highest in women aged over 40 years [1].

Many factors are implicated in the occurrence of cervical cancer, such as number of sexual partners, age at first sexual intercourse, and sexual behavior of the male partner's but genital infection with certain types of Human Papillomavirus (HPV) is the most important risk factor. There are many subtypes of HPV but the confirmed cancerous subtypes are 16, 18, 31, and 33. These 'high-risk' subtypes have been found in nearly all cervical cancers [4]. The Age Standardized Risk (ASR) per 100,000 women in Pakistan is 7.5, which is lower than worldwide (ASR of 15.2 per 100,000 women) [5]. At any given time, nearly 0.5% of Pakistani women harbor cervical Human Papillomavirus (HPV) 16/18 infection and 88.1% invasive cervical cancers are attributable to HPV 16 or 18. [6]. Globally, prevalence of cervical HPV is highest in Sub-Saharan Africa (24%), Eastern Europe (21.4%) and in Latin America (16%) [7].

Pakistan has 59.04 million women aged 15 years and above that are at risk of developing cervical cancer. According to latest estimates, 5,233 women are diagnosed with cervical cancer and 2,876 die from the disease annually. It is the third most frequently occurring cancer among women in Pakistan and the second most common cancer among women aged 15-44 years [6]. The picture is just as bleak when global figures are considered. Annually, over 470,000 new cases are reported and 230,000 deaths are caused of which around 80% occur in developing countries [4].

Cervical cancer is most likely to affect females that are poor and belong to a minority group, have lower education, and lower income. Differences in stage when diagnosed and mortality based on ethnicity have also been reported in literature [8]. This disparity may be explained by the higher screening rates and wider acceptance of the Pap (Papanicolau) test in developed countries and the availability of FDA approved HPV vaccines Cervarix (a bivalent vaccine) and Gardasil (the quadrivalent vaccine) [8] that confer protection against HPV 16 and 18 [1].

The vaccines have the potential to reach high risk groups identified by various researchers [9-11] and thus reduce future health burden. Medeiros et al reported that prophylactic administration of the vaccines can prevent HPV infection in women aged 9-26 years, provided they had not previously been infected with the subtypes covered by the vaccines [12]. The efficacy of these vaccines in men is unproven and its use for men is currently not licensed. Three doses of the vaccines are administered at intervals of 0, 1 and 6 months for Cervarix and 0, 2 and 6 months for Gardasil as intramuscular injections [1].

However, despite proven usefulness of the vaccines, early reports indicate lower vaccination rates among at-risk groups [13, 14]. Graham and Mishra have identified high cost of the vaccines and absence of a usual care-source, as well as lack of public awareness about cervical cancer and available screening methods as hindrances to the use of these vaccines [11]. The highest vaccination coverage in countries like Spain, Scotland etc. was achieved through school-based vaccination programs [15, 16] and the most prominent finding was in Uganda, attaining almost 95% coverage [17].

Average monthly income in Pakistan ranged from PKR 21,785-37,727 in 2010-2011 according to a report by the Pakistan Bureau of Statistics [18]. Consequently, the high retail prices of the vaccines (Cervarix: Rs. 4700, Gardasil: Rs. 9000) [19] render them out of the financial reach of most people. Khan et al claim that the epidemiology of HPV in Pakistan is still unclear due to the social and cultural taboos on matters related to sex. Thus, there is a dearth of quantifiable data regarding HPV burden and HPV-related cervical cancer cases is the country. Nonetheless, HPV-16 has been found in almost all cases of cervical cancer in Pakistan [2]. It is thus imperative that immunization of the at-risk group be carried out. However, a significant barrier to acceptability of the vaccines, apart from the factors mentioned earlier, is the lack of awareness of the general population [8].

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The present study therefore aims to determine the level of awareness about HPV vaccination among female students enrolled in different medical-related and non-medical fields of study and to explore their perceptions about the necessity/usefulness of the vaccine in Karachi, Pakistan.

METHODOLOGY

A cross-sectional survey was conducted among students related to medical field after explaining the aims and objectives of the study by the researchers from Aug 2017 to Dec 2017. Students in batches of around 100 were included in the study and participation in the study was voluntary. Anonymity and confidentiality of the participants were maintained at all times.

Survey instrument: A self administered questionnaire was prepared keeping in mind the awareness required to be disseminated among the society in relation to cervical cancer and HPV vaccination related issues. The questionnaire was made up primarily of closed and a few open-ended questions. It was divided into three sections. The first part consisted of socio-demographic information and awareness regarding cervical cancer and HPV. The second section was a fact sheet which provided basic information on cervical cancer, and efficacy and safety of the HPV vaccine. Once participants finished reading the fact sheet they were asked to complete the third section. This section asked questions regarding parental acceptance and perception of HPV vaccination, gauged their baseline understanding of the disease and concept of vaccination. It took about 30 minutes to complete the questionnaire.

Method of analysis: Data were checked for completeness and then entered into SPSS 21.0 for analysis. The results were summarized using descriptive statistics: expressed as mean and percentages.

RESULTS

A total of n=629 female students related to medical field participated in the study. The socio-demographic characteristics of the respondents are represented by Fig.1.

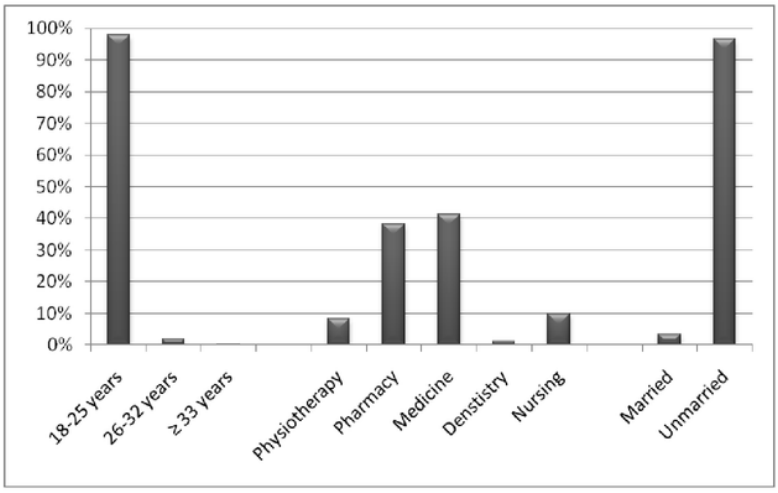

Figure 1: Sociodemographic variables of respondents

Table 1 shows that 72.33% respondents had heard about HPV mainly from their study curriculum (38.25%) and their healthcare providers (21.70%).

Table 1 also describes the awareness of the respondents regarding HPV and cervical cancer. Most participants had sound basic knowledge about the virus and cervical cancer, but as the target group mostly consists of students with a medical background, these results are not representative of the population as a whole. Majority of the respondents said that their doctors had never mentioned or recommended the Pap test.

Table 1: Awareness of HPV and cervical cancer among participants

Question	Response	Frequency (n)	Percentage (%)
Are you aware of HPV?	Yes	455	72.33
	No	174	27.67
What is the source of your knowledge regarding HPV?	Family/friend	11	2.38
	Newspaper	6	1.43
	TV	12	2.70
	Healthcare provider	99	21.70
	Internet	61	13.35
	Academics	174	38.25
	Don't remember	92	20.19
Is HPV infection rare?	Yes	285	45.31
	No	217	34.49
	Don't know	127	20.19
Which gender does HPV infect?	Men	2	0.32
	Women	150	23.84
	Both	467	74.24
	Don't know	10	1.58
Is HPV sexually transmitted?	Yes	150	23.84
	No	295	46.89

	Don't know	184	29.25
Is incidence of HPV highest in women in their 20s and 30s?	Yes	258	41.01
	No	39	6.2
	Don't know	332	52.78
Can HPV cause cervical cancer?	Yes	379	60.25
	No	61	9.69
	Don't know	189	30.04
Can HPV cause genital warts?	Yes	333	52.94
	No	29	4.61
	Don't know	267	42.44
Can both men and women get cervical cancer?	Yes	60	9.53
	No	315	50.07
	Don't know	254	40.38
Is Pap smear a screening test for cervical cancer?	Yes	281	44.67
	No	116	18.26
	Don't know	232	36.53
Did doctor mentioned HPV/Pap test?	Yes	98	15.8
	No	441	70.11
	Don't know	90	14.3
Are genital warts and cervical cancer caused by the same subtype of HPV?	Yes	333	52.94
	No	29	4.61
	Don't know	267	42.44
Is HPV infection curable?	Yes	344	54.68
	No	57	9.06
	Don't know	228	36.24
Can HPV infection resolve itself without treatment?	Yes	45	7.15
	No	410	65.18

	Don't know	174	27.66

The level of awareness regarding HPV vaccines among respondents is shown in table 2. It can be seen that despite being given the fact sheet, participants were often not sure of the correct answer reflecting the need for widely disseminating information regarding the vaccine to ease cervical cancer burden.

Table 2: Knowledge of HPV vaccines

Question	Response	Frequency (n)	Percentage (%)
Have prior awareness of HPV vaccines?	Yes	222	35.29
	No	227	36.08
	Don't know	180	28.61
To whom is vaccine administered?	Men	5	0.79
	Women	311	49.44
	Both	313	49.76
Age group for whom vaccination is recommended?	9-26 Years	493	78.37
	27-30 Years	103	16.37
	31-40 Years	33	5.24
Do current HPV vaccines protect against genital warts and cervical cancer?	Yes	315	50.07
	No	30	4.76
	Don't know	284	45.15
Is HPV vaccine approved for individuals that have never been infected with HPV?	Yes	286	45.46
	No	86	13.67
	Don't know	257	40.85

The following table (table 3) summarizes the medical history of the participants. 26.75% of the participants believed their health status was very good and only 27.82% visited a doctor regularly; just a very few (0.476%, n=3) had a history of tumor/cancer. The below (table 3) also depicts the

acceptability of the vaccines by the respondents. While most are willing to get vaccinated, many feel that they do not yet need it because they are not sexually active. Concern about the cost of the vaccines was also cited as a reason. However, the majority of the participants are willing to recommend the vaccine to others, especially if it is offered free of cost.

Table 3: Health status and attitudes regarding HPV vaccination of respondents'

Question	Response	Frequency (n)	Percentage (%)
Self-perception of health status	Excellent	89	14.14
	Very good	168	26.75
	Fair	230	36.54
	Poor	142	22.57
Regular visit to doctor	Yes	175	27.82
	No	454	72.17
History of tumor/cancer	Yes	3	0.476
	No	617	98.09
	Don't know	9	1.43
Willing to get vaccinated?	Yes	354	56.98
	No	146	23.21
	Undecided	129	20.5
If not willing, then the reason for unwillingness?	I believe I do not need it	10	6.84
	I am not sexually active	80	54.79
	It is too expensive	10	6.84
	I am too old for vaccine	05	3.42
	Doctor did not recommend it	06	4.10
	Worried about safety of vaccine	06	4.17
	Do not know where to get vaccine	04	2.73

	My spouse/family is against it	0	0
	I do not know enough about vaccine	10	6.84
	I already have HPV	0	0
	Don't know	15	10.27
Would you recommend vaccine to others?	Yes	427	67.88
	No	71	11.23
	Don't know	131	20.82
If vaccine is provided free of cost, would you accept it?	Yes	379	60.25
	No	102	16.21
	Don't know	148	23.52
Do vaccinated women no longer need annual cervical cancer screening test?	Yes	98	15.58
	No	265	42.13
	Don't know	266	42.28

The vaccination history of the participants is summarized in figure 2. Majority never received HPV vaccination (73%) and those who had, did not get all three doses of the vaccine.

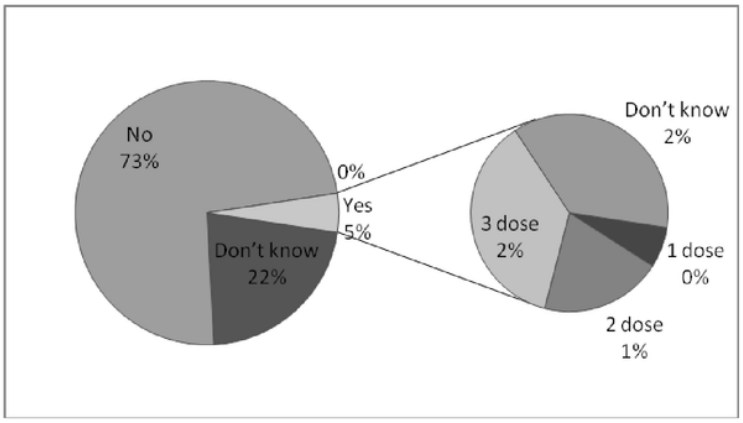

Figure 2: Vaccination history of participants

DISCUSSION

The purpose of the study was to gather information regarding the level of awareness about cervical cancer and HPV in female students related to medical field in Pakistan and to assess the degree of acceptability of the HPV vaccines Gardasil and Cervarix available in the market. The study established that the students were quite knowledgeable about HPV and cervical cancer (table 1); 72.33% had prior knowledge of HPV and the main source of information was their academic curriculum. A high awareness was also reported by an Indian study, whose participants also cited academics as major source of information [20]. Similar studies conducted in South Africa and Botswana showed that 26.2% and 35% study participants respectively, had previously heard of HPV [21, 22]. A study conducted in India, Nepal and Sri Lanka found that on average 66% Indians, 58.8% Nepalis and 57.7% Sri Lankans were aware of cervical cancer and its etiology [23].

Numerous studies have established the link between awareness of HPV and cervical cancer and the acceptability of HPV vaccines [8, 24]. A study found that acceptance of the vaccines increased many-fold after the participants were given a single page information regarding HPV and many of the people that had initially been against the vaccines also changed their minds in favor. However, there were some countries, notably Malaysia, Kenya and Tanzania, with despite of lower level of education about HPV and cervical cancer demonstrated high levels of acceptance of the vaccines. The study also found that healthcare provider or clinician recommendation is also important in increasing vaccine acceptability [24].

A significant impediment to the vaccines is the fact that they are intended to prevent the occurrence of a sexually transmitted virus and are administered to young girls before they make their sexual debut [24]. McCafferey et al (2003) reported that among Indian, Pakistani, African-Caribbean and white British women in the UK getting tested for HPV provoked negative feelings in themselves, and in their point of view sent messages of promiscuity, mistrust, and unconventionality [25]. Especially in Pakistani and Indian women where monogamy is the rule, getting vaccinated for HPV may hold

significant negative social connotations. Another problem that came to light in this study is the high number (n=454, 72.17%) of women who don't visit their doctor regularly. Most of the women believing that they are perfectly healthy only (n=142, 22.57%) perceived their health status as poor (table 3).

Khan et al (2007) found the serotype HPV16 in 59 out of 60 cervical cancer patients who were studied in Pakistan. This prevalence suggests that HPV vaccination is of particular import in this country but social and cultural taboos regarding sex and sexual health complicate attempts to impart information about HPV, cervical cancer and the HPV vaccines [2]. Due to strong religious and social restrictions, incidence of cervical cancer is much lower in Pakistan than elsewhere in the world. However as Ali Jawaid claims, norms are changing and the scenario may change drastically in a couple of decades [26]. Bhatla and Joseph (2009) found that cost, lack of awareness and infrastructure, the side effects, social and religious concerns were some of the barriers to widespread acceptance of HPV vaccination in India [27]. Cost was also cited as a major problem by researchers [8, 28]. Respondents of our study also highlighted these issues (table 3); if the vaccines were provided free of cost, it was revealed that the acceptance increased from 56.98% to 60.25% among the study participants.

This study is limited by the sample population because the study participants were enrolled in MBBS, BDS, physiotherapy or nursing programs; hence the study results are not applicable to the general public.

CONCLUSION

By disseminating information to the public and health care professionals, attitudes towards HPV vaccination may be changed favorably. Other than lack of information, cost and religious/social norms are also significant hurdles that must be overcome in order to grant widespread vaccine coverage in Pakistan. The participants of the study are future healthcare professionals, thus by molding their thoughts today can impact positively on the cervical cancer burden of the country in the future.

Declaration of Conflicts of Interest: There are no conflicts of interest to be declared.

Contribution of Authors: "I declare that this work was done by the author(s) named in this article and all liabilities pertaining to claims relating to the content of this article will be borne by the authors".

REFERENCES

1. Azam F, Shams-ul-Islam M. Prevention of human papilloma virus infection with vaccines. J Pak Med Assoc 2010; 60(8): 676-81.
2. Khan S, Jaffer NN, Khan MN, Rai MA, Shafiq M, Ali A, Pervez S, Khan N, Aziz A, Ali SH. Human papillomavirus subtype 16 is common in Pakistani women with cervical carcinoma. Int J Infect Dis 2007; 11(4): 313-317.
3. Cubie HA. Diseases associated with human papillomavirus infection. Virology 2013; 445(1-2): 21-34.
4. Badar F, Anwar N, Meerza F, Sultan F. Cervical carcinoma in a Muslim community. Asian Pac J Cancer Prev 2007; 8(1): 24.
5. Siddiqa A, Zainab M, Qadri I, Bhatti MF, Parish JL. Prevalence and genotyping of high risk human papillomavirus in cervical cancer samples from Punjab, Pakistan. Viruses 2014; 6(7): 2762-2777.
6. Bruni L, Barrionuevo-Rosas L, Albero G, Aldea M, Serrano B, Valencia S, Brotons M, Mena M, Cosano R, Munoz J, Bosch FX, De Sanjose S, Castellsague X. Human Papillomavirus and Related Diseases in Pakistan. ICO Information Centre on HPV and Cancer (HPV Information Centre) 2015.
7. Bruni L, Diaz M, Castellsague M, Ferrer E, Bosch FX, De Sanjose S. Cervical human papillomavirus prevalence in 5 continents: meta-analysis of 1 million women with normal cytological findings. J Infect Dis 2010; 202(12): 1789-1799.
8. Do YK, Wong KY. Awareness and acceptability of human papillomavirus vaccine: an application of the instrumental variables bivariate probit model. BMC public health 2012; 12(1): 31.
9. Downs LS, Scarinci I, Einstein MH, Collins Y, Flowers L. Overcoming the barriers to HPV vaccination in high-risk populations in the US. Gynecol Oncol 2010; 117(3): 486-490.

10. Gillison ML, Broutian T, Pickard RK, Tong ZY, Xiao W, Kahle L, Graubard BI, Chaturvedi AK. Prevalence of oral HPV infection in the United States, 2009-2010. Jama 2012; 307(7): 693-703.

11. Graham JE, Mishra A. Global challenges of implementing human papillomavirus vaccines. Int J Equity Health 2011; 10(1): 27.

12. Medeiros LR, Rosa DD, Da Rosa MI, Bozzetti MC, Zanini RR. Efficacy of human papillomavirus vaccines: a systematic quantitative review. Int J Gynecol Cancer 2009; 19(7): 1166-1176.

13. Licht AS, Murphy JM, Hyland AJ, Fix BV, Hawk LW, Mahoney MC. Is use of the human papillomavirus vaccine among female college students related to human papillomavirus knowledge and risk perception? Sex Transm Infect 2010; 86(1): 74-78.

14. Dempsey A, Cohn L, Dalton V, Ruffin M. Worsening disparities in HPV vaccine utilization among 19–26 year old women. Vaccine 2011; 29(3): 528-534.

15. Limia A, Pachon I. Coverage of human papillomavirus vaccination during the first year of its introduction in Spain. Euro Surveill 2011; 16(21): 19873.

16. Rondy M, Van Lier A, Van de Kassteele J, Rust L, De Melker H. Determinants for HPV vaccine uptake in the Netherlands: A multilevel study. Vaccine 2010; 28(9): 2070-2075.

17. Binagwaho A, Wagner CM, Gatera M, Karema C, Nutt CT, Ngabo F. Achieving high coverage in Rwanda's national human papillomavirus vaccination programme. Bull World Health Organ 2012; 90(8): 623-628.

18. Household Integrated Economic Survey (HIES) 2011-12. Pakistan Bureau of Statistics: Pakistan, 2013.

19. Drug Information System [cited 2015 june 4]. Available from: www.druginfosys.com.

20. Pandey D, Vanya V, Bhagat S, Vs B, Shetty J. Awareness and attitude towards human papillomavirus (HPV) vaccine among medical students in a premier medical school in India. PloS one 2012; 7(7): e40619.

21. Hoque ME, Van Hal G. Acceptability of Human Papillomavirus Vaccine: A Survey among Master of Business Administration Students in KwaZulu-Natal, South Africa. Biomed Res Int 2014; Article ID 257807: 6 pages.

22. Di Angi YT, Panozzo CA, Ramogola-Masire D, Steenhoff AP, Brewer NT. A cross-sectional study of HPV vaccine acceptability in Gaborone, Botswana. PloS one 2011; 6(10): e25481.

23. Joy T, Sathian B, Bhattarai C, Chacko J. Awareness of cervix cancer risk factors in educated youth: a cross-sectional, questionnaire based survey in India, Nepal, and Sri Lanka. Asian Pac J Cancer Prev 2011; 12: 1707-1712.

24. Hopkins TG, Wood N. Female human papillomavirus (HPV) vaccination: global uptake and the impact of attitudes. Vaccine 2013; 31(13): 1673-1679.

25. McCaffery K, Forrest S, Waller J, Desai M, Szarewski A, Wardle J. Attitudes towards HPV testing: a qualitative study of beliefs among Indian, Pakistani, African-Caribbean and white British women in the UK. Br J Cancer 2003; 88(1): 42-46.

26. Jawaid A. Cervical cancer vaccine in Pakistan: let's start thinking. Int J Infect Dis 2008; 12(2): 217.

27. Bhatla N, Joseph E. Cervical cancer prevention & the role of human papillomavirus vaccines in India. Indian J Med Res 2009; 130(3): 334-340.

28. Bharadwaj M, Hussain S, Nasare V, Das BC. HPV & HPV vaccination: issues in developing countries. Indian J Med Res 2009; 130(3): 327-333.

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