

ORIGINAL ARTICLE

ASSESSING THE ROLE OF EDUCATION IN ADULT WOMEN'S KNOWLEDGE AND AWARENESS OF HUMAN PAPILLOMAVIRUS AND HUMAN PAPILLOMAVIRUS VACCINE

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Background: Awareness and knowledge of Human Papillomavirus (HPV) and HPV vaccine among women are not satisfactory in developing countries. The aim of this study was to assess the role of education in adult women about knowledge and awareness of human papillomavirus (HPV) and HPV vaccine. **Methods:** This cross-sectional study was carried out in women aged 19-50 years attending the out-patient waiting area of a tertiary care hospital in Karachi from August 2014 to August 2015. Convenience sampling was applied. After their written consent, a self-administered questionnaire was used to obtain information regarding role of education and awareness, knowledge of human papillomavirus (HPV) and HPV vaccine. A total of 600 women completed the questionnaire. **Results:** Mean age of the study participants was 39±10.7 years. About 68% (n=405) had an education level intermediate or less, while 33% (n=195) had a bachelors or higher degree. A total of 56.3% (n=338) women were aged less than 40 years. **Conclusion:** Awareness among women varies with the level of education acquired. As shown by results, a lesser proportion of undergraduate women were aware about HPV and its related diseases as compared women at graduate level. Moreover, our study identifies significant gaps in knowledge about sexually transmitted infections, HPV, cervical cancer and its prevention. There is an urgent need to develop public awareness programs targeting the adolescent and young adult women of our country.

Keywords: Human Papillomavirus (HPV); HPV vaccine; Education; Adults; Women

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INTRODUCTION

Human Papillomavirus (HPV) is one of the most common causative pathogen of sexually transmitted infections (STIs) around the globe.¹ HPV is responsible for 99% of cervical cancers.² About 80–90% of the infections are short lived and cleared by body's immune system. Adolescents with HPV associated condition may remain asymptomatic but continuous replication of viral DNA could be manifested as genital warts, cervical intraepithelial neoplasia, and cervical cancer. Apart from cervical cancer HPV is also a causative factor in vulva, anal, penile, oro-pharyngeal and oesophageal carcinoma.¹

Around 70–80% of sexually active women will acquire HPV infection.^{3,4} The prevalence is particularly high in younger age group.^{4,5} The highest reported prevalence is 44.8% among women aged 20–24 and falls to 33.8% between 14–24 years.⁶ In contrast, men have an equal prevalence of getting infection throughout their life.⁷ In males aged 18–29 years, approximately one-third have an HPV infection.^{8,9} Young and adolescent females are more prevalent due to certain risk factors which include, earlier age of sexual activity, number of partners and vulnerability of adolescent cervix to sexually transmitted diseases.¹⁰

A survey done in Bielefeld, Germany concluded that only 3.4% of women were aware about

HPV and its causal relationship with cervical cancer.¹¹ In developed countries, well established cervical screening programs have reduced the prevalence of cervical cancer and mortality rate.¹² More recently, HPV vaccination programs and HPV testing has targeted the overall HPV related infections.¹³ There is no established HPV vaccination or cervical screening program in Pakistan. The uptake of cervical screening test is only 2.3% in female population aged 25–64 years.¹⁴

The main objective of this study was to assess knowledge of HPV infection and vaccination in adult women having different educational qualifications. The poor uptake of cervical cancer screening and HPV vaccination warrants patient education programs to be brought into place. There is a wide variation in educational status of the adult female population and how to target awareness in each educational stratum is of importance. This study will be a first step in helping to establish HPV awareness programs for different age groups in our setup.

MATERIAL AND METHODS

This was a cross sectional study carried out in women attending the out-patient waiting area of a tertiary care hospital in Karachi from August 2014 to August 2015. Convenience sampling technique was used. Women aged 19–50 years were included in the study and illiterate women were excluded. After their written consent, a self-

administered questionnaire (available in English and Urdu) was used to assess the role of education on awareness and knowledge of HPV and HPV vaccine among women. Age groups were divided in four different categorizes. The questionnaire consisted of simple stated statements regarding knowledge attitude and practices. Education level was categorized into intermediate level or less and bachelors' degree or higher. Intermediate level was defined as having passed higher secondary school/college. Data was entered and analysed using SPSS version 21. Frequencies and percentages were calculated for categorical variables. Mean and standard deviation was calculated for continuous variables. Chi-square test was used to compare proportions.

RESULTS

A total of 600 women completed the questionnaire. Mean age of the study participants was 39±10.7 years. About 68% (n=405) had an education or intermediate or less, while 33% (n=195) had a bachelors or higher degree. A total of 56.3% (n=338) women were aged less than 40 years. The socio-demographic characteristics of the study group are presented in table-1. Women with intermediate education or less, 87% (n=295) had no knowledge about sexually transmitted diseases and 85% (n=355) had no knowledge that viruses may cause some cancers. There were statistically significant differences in the knowledge between the two educational categories as shown in table-2. There was statistically no significant difference with regard to source of knowledge about HPV.

Women with higher education 49% (n=118) were more aware to use condoms during sexual

intercourse as compared to those with intermediate level education or less (p-value 0.001). About 56% (n=42) women with higher education agreed to having an annual gynaecological examination, the proportion of women not attending the examination was higher 65% (n=73) in higher educational subsets. A similar trend was seen in the response about ever having a Pap smear. Table-3 shows the responses to sexual practices.

Vaccine acceptability was better in women having bachelors or higher degrees 56% (n=126) as compared to lower educational level 44%. Similar response was received when inquired about consenting for their daughters 65% versus 36% with p-value 0.001. However, most women responded negatively when asked about vaccine acceptability in their sons. Table-4 shows the responses to questions regarding HPV vaccine awareness. A similar trend was seen in the response about willing to pay for the vaccination cost by the government.

Table-1: Socio-demographic characteristics

Variable	Group	n (%)
Age Groups	19-30	157 (26.2)
	31-40	181 (30.2)
	41-50	167 (27.8)
	> 50	95 (15.8)
Religion	Islam	583 (97.1)
	Christianity	7 (1.2)
	Hinduism	10 (1.7)
Marital Status	Single	50 (8.3)
	Married	529 (88.2)
	Other	21(3.5)
Working Status	Housewife	518 (86.3)
	Working	82 (13.7)
Educational Status	Intermediate or less	405 (67.5)
	Bachelor and above	195 (32.5)

Table-2: Knowledge about STI and HPV in women of Karachi. (n=600)

Knowledge	Response	Educational Status		p-Value
		Intermediate or less n (%)	Bachelor or greater n (%)	
Knowledge about sexual transmitted disease	Yes	110 (42.5)	149 (57.5)	0.001
	No	295 (86.5)	46 (13.5)	
Knowledge that viruses may cause some types of cancer	Yes	50 (27.5)	132 (72.5)	0.001
	No	355 (84.9)	63 (15.1)	
Knowledge of the Human Papilloma Virus (HPV)	Yes	17 (16.8)	84 (83.2)	0.001
	No	388 (77.8)	111 (22.2)	
Knowledge about the HPV related lesions	Yes	8 (11.9)	59 (88.1)	0.001
	No	397 (74.5)	136 (25.5)	
Knowledge about the causal relation between HPV and cervical Cancer	Yes	1 (4.2)	23 (95.8)	0.001
	No	404 (70.1)	172 (29.9)	
Knowledge that the condom protective against HPV	Yes	7 (14.3)	42 (85.7)	0.001
	No	398 (72.2)	153 (27.8)	
Knowledge about Pap smear	Yes	35 (28.9)	86 (71.1)	0.001
	No	370 (77.2)	109 (22.8)	
Source of knowledge about HPV	Doctor	10 (15.4)	55 (84.6)	0.931
	Nurse	2 (20.0)	8 (80.0)	
	Other	4 (15.4)	22 (84.6)	
Knowledge about routes of transmission of HPV	Don't know	263 (83.2)	53 (16.8)	0.001
	Sexual contact	41 (27.3)	109 (72.7)	
	Kissing	17 (89.5)	2 (10.5)	
	Handshaking	13 (86.7)	2 (13.3)	
	Other	17 (71.0)	29 (29.0)	

Table-3: Attitude regarding STI and HPV in women of Karachi. (n=600)

Attitude	Response	Educational Status		p-Value
		Intermediate or less n (%)	Bachelor or greater n (%)	
You or your partner use condom	Yes	121 (50.6)	118 (49.4)	0.001
	No	284 (78.7)	77 (21.3)	
Regularly have an annual gynaecological examination	Yes	33 (44.0)	42 (56.0)	0.001
	No	372 (70.9)	153 (29.1)	
Ever had a Pap smear	Yes	40 (35.4)	73 (64.6)	0.001
	No	365 (74.9)	122 (25.1)	
Ever had an abnormal Pap smear	Yes	3 (50.0)	3 (50.0)	0.303
	No	402 (67.7)	192 (32.3)	

Table-4: Knowledge about HPV vaccination prevention

Practices	Response	Educational Status		p-Value
		Intermediate or less n (%)	Bachelor or greater n (%)	
If the vaccine were to work at any age, would you accept the HPV vaccine for yourself?	Yes	99 (44.0)	126 (56.0)	0.001
	No	306 (81.6)	69 (18.4)	
Would you consent for your daughter to receive the vaccine?	Yes	78 (35.5)	142 (64.5)	0.001
	No	327 (86.1)	53 (13.9)	
Would you consent for your Son to receive the vaccine?	Yes	33 (46.5)	38 (53.5)	0.001
	No	372 (70.3)	157 (29.7)	
Who should pay for the vaccine?	Government	155 (49.8)	156 (50.2)	0.001
	On self	35 (49.3)	36 (50.7)	
	Don't Know	215 (98.6)	3 (1.4)	

DISCUSSION

Our study highlights the role of education among women regarding the awareness about HPV and HPV vaccine. Overall only 16.8% of women in our study knew about HPV. This is significantly low as compared to that reported from other countries 30–50%.¹⁵

Impact of educational level on knowledge about HPV and STI was found to be statistically significant in our study. Higher percentage of women having bachelors or higher education had knowledge about HPV related diseases. However, significant knowledge gaps existed in women belonging to both strata of education regarding cervical screening, prevention and HPV as a cause of cervical cancer. This is similar to that reported by other authors.¹⁴

In our study knowledge about route of transmission was deficient or incorrect amongst most women. Deficit of knowledge impede the proper annual gynaecological care which is an integral part to detect early lesion by the routine examination and Pap smear. Other researchers have also found a lacking in awareness about HPV and Pap smear.¹⁶⁻¹⁹

Vaccine acceptability was low in our data (41.5%) with lower education 28.8%. The differences in vaccine acceptability in two educational groups was statistically significant with rates of acceptance as high as 75.9% in women with higher education. Studies from other countries have reported higher rates of acceptance.²⁰ Wong *et al*, evaluated 250 adolescent’s girls’ attitudes on HPV vaccination.¹⁸ Their findings indicated that 70.8% of participants

were willing to accept HPV vaccination in Hong Kong.^{18,21}

Our study identifies significant gaps in knowledge about STI, HPV, cervical cancer and its prevention. There is an urgent need to develop public awareness programs targeting the adolescent and young adult women of our country through educational programs in schools, colleges and universities. Nevertheless, women who are less educated and not willing to attend educational activities should also be approached via alternate educational strategies.

There is a cervical screening program running in our country; however, awareness to increase the interest for this program also required. HPV vaccination program in future will be another step and proper education will also improve the uptake of vaccine.

The limitation of our study is that results cannot be generalized to the whole population; however, the sample size is large enough to estimate the knowledge gaps in average women of our population albeit limiting representation due to technique. This study will help to develop awareness programs for women and also promote future researches which should focus on effect of educational intervention on knowledge gaps.

AUTHORS' CONTRIBUTION

HI: Conceived and designed the study, acquisition analysis and interpretation of data, drafted the article and final revision of article, data management, analysis and accountable for accuracy and integrity of article. SR: Drafted the article and design of study,

and accountable for accuracy and integrity of article. SS: Intellectual support of conception and design of study, revising article critically for intellectual contents, revision of article critically for intellectual contents. MTK: Data interpretation, revision of article critically for intellectual contents. RR: Revision of article critically for intellectual contents

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