Original Article **Asian J Agri Biol, 2015, 3(3): 105-111.**

AWARENESS ABOUT CERVICAL CANCER, HUMAN PAPILLOMAVIRUS AND ACCEPTABILITY OF ITS VACCINE AMONG FEMALE UNIVERSITY STUDENTS OF PESHAWAR PAKISTAN

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ABSTRACT

Cervical cancer is the most common cancer among women all over the world. The major causative agent for cervical cancer is Human papillomavirus. Awareness and education about cervical cancer, HPV and its vaccination can help to prevent cervical cancer. Present study was a questionnaire based survey including 764 female students of Shaheed Benazir Bhutto Women University Peshawar, Khyber Pukhtoon Khawa (KPK). KPK is considered as a relatively conservative society where talking about sexually transmitted diseases (STDs) is a taboo leading to a poor management of Sexually transmitted diseases (STDs). Current study was conducted to assess the awareness of female university students about cervical cancer, Human papillomavirus (HPV) and its vaccine. Majority of participants were unaware about cervical cancer and its causes. Only 23.20% (175) knew that cervical cancer is a gynecological cancer. 93.50% of the participants had never heard about Pap (Papanicolaou) smear testing. Level of awareness about Human papillomavirus (HPV) as causative agent and availability of vaccine against HPV was just 11.53% and 10.87%, respectively. Notably, acceptance of HPV vaccine among the female students was 95.49% indicating a positive attitude towards treatment if the facilities are provided. Overall study indicated that although the educated young females of Peshawar are not very much aware of the cervical cancer, HPV and its vaccination but they are willing to have more awareness and proper medical facilities to address this issue. Increasing female student's awareness would help us to attain a lower incidence and mortality.
Keywords: Cervical cancer, Pakistan, Human papilloma virus, Peshawar, Pap test

INTRODUCTION

Cervical cancer is the fourth most frequent cancer in women and a major cause of cancer mortality worldwide representing 7.5% of all female cancer deaths (WHO, 2012). According to World Health Organization (WHO) report of year 2012, there were around 530,000 new cases of cervical cancer and approximately 270,000 cervical cancer related deaths, of which more than 85% occurred in low and middle-income countries (IARC, 2012). The reasons for higher mortality of cervical cancer in developing countries includes lack of awareness about cervical cancer and effective control measures, inappropriate diagnosis, low screening coverage and participation rate among women, poor healthcare system to offer proper follow up and low access to colposcopy (Hanisch et al., 2008). Cervical cancer is considered as a multi-factorial disease in which a number of environmental and genetic factors play central role (Moreno et al., 2002; Levi et al., 2002) but Human Papillomavirus (HPV) is the most prevalent risk factor. Nearly all cases of cervical cancer can be attributable to HPV infection. An increasing body of evidence also links HPV with other anogenital cancers as well. Sexual transmission is the major route of HPV infection and consequently cervical cancer development (Zur Hausen, 2002; Vaccarella et al., 2006). It has been observed that at least 50% of sexually active individuals acquire infection from HPV at some point in their lives and some may be repeatedly infected (http://www.cdc.gov/hpv/).

Cervical screening is the best method for early detection and prevention of cervical cancer (Blair and Casas, 2009; Hughes, 2009).Vaccination and immunization against HPV before sexual debut is also one of the most effective strategies to control HPV induced cervical cancer (Barr and Sings, 2008). Two prophylactic vaccines against HPV have been approved by US Food and Drug Administration (FDA) that confer protection against HPV. Gardasil was manufactured by Merck and was approved in 2006, while

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Cervarix; manufactured by GlaxoSmithKline was approved in 2009. Both vaccines protect against high risk HPV types 16 and 18 while Gardasil additionally protects against low risk types; 6 and 11 (Villa et al., 2005).

Cervical cancer is third most common cancer among females of Pakistan and it ranks as 2nd most common cancer among Pakistani women aged between 15-44 years of age (WHO, 2014). According to Information Centre on HPV and Cancer (ICO), in Pakistan every year approximately 5233 women are diagnosed with cervical cancer and approximately 2876 die of disease (ICO, 2014). Although the incidence of cervical cancer in Pakistan is lower than that in developed countries, but unfortunately the mortality is higher due to late diagnosis of cervical cancers (Badar et al., 2007). In developed countries, well-structured programs for screening of cervical cancers are in place, making most pre-cancerous lesions identifiable at stages when they can easily be treated. Early treatment prevents up to 80% of cervical cancers in these countries. Unfortunately in Pakistan, there is lack of structured program for screening and assessment of HPV and related cancers. Lack of awareness about sexually transmitted infections (STI) among general public is a big hurdle in STIs screening in general and HPV related cervical cancers in particular. Even the Pap test is not commonly practiced in Pakistan (Khan et al., 2007). Adequate prior knowledge about HPV induced cervical cancer and its available vaccines are important for decision making regarding vaccination. In this context current study is an attempt to explore awareness and knowledge of cervical cancer, HPV and its vaccines among female university students of Peshawar, Pakistan. Peshawar is capital of the province of Khaber Pukhoon Khuwa (KPK) which is considered to be a relatively conservative part of the country. Main purpose of the study was to evaluate the level of cervical cancer related basic knowledge and attitude of female university students of Pushtoon ethnic group towards vaccination. To our knowledge, this was the first study conducted in Pushtoon females to analyze the gaps in the knowledge and awareness about cervical cancer, HPV and its vaccine in this region.

MATERIALS AND METHODS

Participants and Sampling Methods

Current cross-sectional survey study was carried among female students registered at different departments of Shaheed Benazir Bhutto Women University Peshawar (SBBWU), Peshawar. The study was approved by the Research and Ethical Committee at Shaheed Benazir Bhutto Women University Peshawar. Students, aged between 19-25 years were invited to participate in the study. Each female student was orally informed about the nature of the study and its aims and objectives. Lack of consent to answer the questions included in the questionnaire and incomplete questionnaires were the exclusion criterion.

Data Collection

A self-administered paper based questionnaire consisting of 16 closed ended questions was developed by researcher after review of literature. The questionnaire was in English, which is the language of instruction for university students in Peshawar. Seven hundred and sixty-four copies of the questionnaire were distributed among students of different departments. The questionnaire had 4 sections. The first section comprised of the questions about socio-demographic characteristics while the second section included questions regarding awareness, risk factors and symptoms of cervical cancer. The third and fourth sections were designed to assess the level of awareness about HPV and attitude towards its vaccination, respectively. The questionnaire was tested for content validity and reliability in a pilot study on 15 students to determine if the wording of the questionnaire was well understood by the students.

Data Analysis

Data were checked for completeness and the input data from questionnaires were compiled in to an excel spread sheet for statistical analysis. Data were analyzed using Statistical Package for Social Sciences (SPSS) software version 20 and the results were tabulated in the form of proportions and percentages.

Table 1: Socio-demographic Characteristics of the Students (n= 754)

Participant characteristics	Classification	Number of Students (n = 754)	Percent Distribution (%)
Educational Program	Science	438	58.09%
	Social Sciences	316	41.90%
Educational level	Under graduate	754	100%
Marital status	Single	736	97.61%
	Married	18	2.38%
Age	≤ 20	131	17.37%
	> 20	623	82.62%

Table 2: Basic Knowledge about Cervical Cancer among Female University Students

Questions	Responses	N	(%)
Do you know about Cervical Cancer?	Yes	175	23.20%
	No	579	76.79%
Are you aware of the symptoms of cervical cancer?	Fully aware	63	8.35%
	No	650	86.20%
	Little aware	41	5.43%
Have you ever heard about Pap smear test?	Yes	49	6.49%
	No	705	93.50%
Do you think early detection of cervical cancer is helpful for treatment?	Yes	29	3.84%
	No	73	9.68%
	Do not know	652	86.47%

Table 3: Awareness of HPV among Female University Students

Questions	Responses	N	(%)
Have you ever heard about the sexually transmitted infections?	Yes	642	85.14%
	No	112	14.85%
Have you ever heard about Human Papillomavirus?	Yes	87	11.53%
	No	667	88.46%
Is Human Papillomavirus a sexually transmitted Virus?	Yes	77	10.07%
	No	27	3.58%
	Do not know	650	86.20%
Does Human Papillomavirus cause cervical cancer?	Yes	83	11.00%
	No	30	3.97%
	Do not know	641	85.01%

Table 4: Awareness and Attitude towards HPV Vaccine among Female University Students

Questions	Responses	N	(%)
Is there any available vaccine against Human papillomavirus?	Yes	82	10.87%
	No	33	4.37%
	Don't know	639	84.74%
Would you like to receive HPV vaccination?	Yes	720	95.49%
	No	25	3.31%
	Don't know	9	1.19%
Would you like yourself to be educated by experts about HPV & its Vaccine?	Yes	746	97.64%
	No	0	0.00%
	Don't know	18	2.35%
Are you willing to attend a cancer Awareness program?	Yes	749	99.33%
	No	0	0.00%
	Don't know	5	0.66%

RESULTS

A total of 764 students participated in the study. Ten questionnaires were excluded from the final analysis as they were incomplete. Thus data from 754 participants were included in the final analysis.

Socio-demographic Features

Table 1 summarizes the socio-demographic information of 754 female participants of the study. Eighteen students were married while rests were single. All students were undergraduates. 58.09% were from science stream while 41.90% were from social stream. Most of the participants were single and above.

Knowledge about Cervical Cancer

Knowledge and awareness level of the students about cervical cancer is depicted in Table 2. Students were asked about their prior knowledge of cervical cancer its symptoms, screening and early detection. Results indicated that more than three quarter (76.79%) of students had never heard about cervical cancer and only 23.20% knew that cervical cancer is a gynecological cancer. Majority of the students were 86.20% unaware of the cervical cancer symptoms.Other had no or a limited knowledge in this regard. Only 6.49% students had knowledge about Pap smear test for cervical cancer screening. Majority of the students were unaware of the fact that an early detection of cervical cancer could be helpful to decrease the burden of the cancer.

Awareness of HPV

Awareness of the students about HPV was assessed by asking four questions. First they were asked if they had ever heard about sexually transmitted infections and most of the students answered, yes (85.14%). Only 11.53% (87 out of 754 students) had previously heard about HPV. 88.46% students demonstrated lower level of knowledge related to HPV; being a sexually transmitted disease. Majority of the students (85.01%) did not know that HPV is one of the major causes of cervical cancer among women. Awareness of HPV among female university students is summarized in Table 3.

Awareness and Attitude towards HPV Vaccines

Table 4 demonstrates knowledge, awareness and acceptance of HPV vaccine. Only eighty two out of 754 female students (10.87%) had previously heard about HPV vaccine. Majority of the students (95.49%) were willing to receive HPV vaccine and nearly all of the students wanted to learn more about the vaccine (97.64%). Majority of them (99.33%) wanted to attend cancer health care programs to get awareness about HPV vaccine.

DISCUSSION

To the best of our knowledge, present study is the first of its kind to quantitatively assess the awareness about cervical cancer, its causative

agent HPV and its vaccination among female university students of Peshawar KPK (Khyber Pukhtoon Khawa), Pakistan. Bordering with Afghanistan, KPK is considered to be traditionally conservative and ethnically diverse city of KPK. There has been a significant increase in urban population due to internally displaced people of war affected tribal areas. Furthermore there is a huge influx of Afghans refugees. All these factors have contributed to an increase in population burden, poor healthcare system, in availability of proper treatment and lack of awareness about different diseases. In Pakistan, most of the community health awareness programs have focused on breast cancer, diabetes, obesity, Tuberculosis and Hepatitis C virus (HCV) etc. In contrast, very few studies have focused on cervical cancer among Pakistani females (Imam et al., 2008; Mazahir et al., 2008; Syed et al., 2010).This lack of awareness in addition to limited access to effective screening, keeps the cervical cancer un-identified till symptomatic stages. Prospects for treatment of such late-stage disease may be poor, resulting in a higher rate of death from cervical cancer in these countries.

Our study reveals that majority of students had a limited knowledge and awareness about cervical cancer and HPV, especially its prevention and treatment and majority of the students in our survey were unable to recognize cervical cancer as a gynecological cancer. However, the trend towards HPV vaccine acceptability and participation in cancer awareness program was high. The low level of cervical cancer awareness among university students has already been reported from different Muslim countries. In Saudi Arabia, 95.7% of the female students had poor knowledge of cervical cancer (Ghadeer et al., 2014) and only 56% of females were aware of the signs and symptoms of cervical cancer (Al-Darwish et al., 2014). In survey conducted in Iran, the awareness about cervical cancer was 40% among females (Ghojazadeh et al., 2012). One study done among school girls in Malaysia shows 69% of knowledge about cervical cancer and 77.6% students ever heard about HPV vaccine (Redhwan Ahmed et al., 2012). Multiple factors contribute to inefficient screening of cervical cancer in low-income and less developed countries. These may include lack of a national cervical cancer screening program, inadequately developed health care services, very low access of the females to health care facility, and lack of technical skill. All these factors contribute to inefficient testing, late diagnosis and poor treatment which ultimately increase the mortality rate among females. Improvement in all above stated factors can be effective only if the public in general and women in particular are aware of cervical cancer, its causes and available vaccines. In less developed countries, access to accurate information is furthermore prevented by high rate of illiteracy and some religious beliefs. Our study shows that only 8.35% students knew about the symptoms of cervical cancer. The awareness about Pap test was very low as only 6.49% knew about Pap smear test for cervical cancer screening. The low level of awareness about Pap smear was shown by Turkish women too approximately 79.2% did not know about Pap smear (Karadag et al., 2014)

Majority of the students were not aware of the fact that early screening and detection of cervical cancer is helpful to lower the burden of the cancer. From our study it is concluded that absence of a national cervical screening program has resulted in the lack of basic knowledge about major risk factors for cervical cancer even among the educated population of university students.

In our study students were asked if they had ever heard about sexually transmitted infections and 642 out of 754 students answered positively. But majority of the students (88.46%) did not know that HPV is a sexually transmitted virus that causes cervical cancer. Thus the level of awareness about HPV and its relation to cervical cancer was very low among students.

Pakistan is a developing country where a regular HPV vaccination policy is not available. This is depicted in our study as, the participant's awareness regarding HPV vaccines was very low. Acceptability to use a vaccine was very high (94.59%) nearly all of the students wanted to learn more about the vaccine and were willing to attend cancer awareness and prevention programs .Findings from our results suggest that University students have positive attitudes toward getting vaccinated against HPV infection like other developing countries (Durusoy et al., 2010; Dany et al., 2015).Our results suggest that even the educated population of Pakistan lacks basic knowledge about HPV induced cervical cancer

and its vaccines. Few epidemiological studies conducted earlier in different parts of Pakistan showed that HPV is major causative agent of cervical cancer among Pakistani women (Khan et al., 2007; Yousaf et al., 2010; Raza et al., 2010). An increase in HPV infection emphasizes an immediate need of a public health policy implementation for HPV screening and its vaccination in Pakistani women (Raza et al., 2010).

The prophylactic HPV vaccine is ideally recommended for adolescent girls of age 12 before any sexual activity. Our participants are older and more mature; therefore, their awareness about HPV vaccines may differ from those of 10–14 year old girls. There is a need for extrapolating our findings to the general population outside the university. Our study can be considered as an advocacy of female university students for implementation of public health promotion drive about cervical cancer and its vaccines followed by a national HPV management plan. This may include vaccinating girls before they become sexually active as well as screening and treatment of HPV positive women. This will ultimately result in an early detection and reduced cervical cancer burden in Pakistani population.

CONFLICT OF INTEREST

No conflict of interests is declared by the authors.

ACKNOWLEDGMENTS

We are thankful to the Dr. Sadia Butt from Department of Biochemistry Shaheed Benazir Bhutto Women University for her support and help in collecting data.

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