AWARENESS AND ACCEPTANCE OF HUMAN PAPILLOMA VIRUS VACCINATION AMONG MEDICAL STUDENTS OF PESHAWAR MEDICAL COLLEGE

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ABSTRACT

Background: Cervical cancer is a great matter of concern all around the globe due to increase incidence of mortality. Human papilloma virus (HPV) is regarded to be the major causative agent of cervical cancer. Moreover, HPV has been found to cause sexually transmitted disease not only in women but also in men. As prevention is known to be the best and better strategy than cure, cervical cancer has been proven to be prevented by HPV vaccine. The current study was conducted to assess the knowledge, awareness and attitude of senior medical students towards HPV vaccination.

Methods: A cross-sectional questionnaire based study was conducted among the fourth and final year medical students of Peshawar Medical College at Kuwait Teaching Hospital Peshawar.

All the 196 students were included in the study. The data was analyzed in SPSS version 19. Confidentiality of subjects was assured. The study duration was approximately 4 months.

Results: The response rate was 84.6%. Majority of the study participants (85.5%) were aware that cervical cancer can be prevented. Eighty percent of the participants knew about the causative agent of cervical cancer. More than quarter (33.33%) of the participants was aware about the availability of HPV vaccine in Pakistan however, less than quarter (17.4%) were aware that HPV vaccine can be given to boys as well. Almost half (49%) of the participants knew about the number of doses of HPV vaccine. Sixty four percent expressed their consent to receive HPV vaccine while 81.8% showed their willingness to advice others regarding HPV vaccine.

Conclusion: The level of awareness and knowledge regarding different aspects of cervical cancer and HPV vaccine and attitude of medical students towards HPV vaccine is appreciable however still an appreciable number of students are unaware regarding different aspects of HPV vaccine which needs to be addressed in order to pave a way towards effective vaccination program to decrease the incidence of cervical cancers and HPV related infections.

Keywords: Human papilloma virus, medical students, awareness, vaccine

INTRODUCTION

Human papilloma virus (HPV) being the causative agent of cervical cancers is regarded to be a serious issue.[1] Different researches are evident of the fact that cervical cancer is caused by human papilloma virus.[2] Different other cancers such as oropharyngeal, vulvar, penile, anal and vaginal are also found to be associated with the oncogenic serotypes of HPV.[3] Human papilloma virus has many different serotypes, however for general discussion purpose mostly the serotypes 6, 11, 16 and 18 are considered. Among these four serotypes, 6 and 11 are regarded to be non-oncogenic and account for more than 90% benign infections while 16 and 18 are considered to be oncogenic eventually contributing for almost 70% cervical cancers globally.[4]

Globally cervical cancer is reported as the second commonest cancer in women population. Almost 288,000 deaths resulting from cervical cancers have been reported worldwide while its incidence is more than 500,000 cases every year.[5] According to World Health Organization, in 2012 more than 260,000 women died as a result of cervical cancer.[6] Almost quarter of the cervical cancer cases enroot to South Asia.[7] In India, which is situated in the neighborhood of Pakistan, the most prevalent cancer among women popular is regarded to be cervical cancer.[8] Similarly in China, which is yet again in the close vicinity of Pakistan, the annual age-standardized mortality is 4.3 per 100,000 women while the age-standardized morbidity is 9.6 per 100,000 women.[9]

The precise statistics regarding the burden of cervical cancer in Pakistan is mostly unknown.[10] Due to

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lack of availability of national-level data, different cancer registries and institutional record data remains the only source representing the disease burden.[11] According to one of the cancer registries, cervical cancer accounted for 3.6% of all the cancer mortalities in urban population.[12]

Regarding methods incorporated to prevent cervical cancer, HPV vaccine is regarded to be the most efficacious option.[13] In the absence of mega-screening campaigns and nation-wide screening programs of at risk population, there is a dire need to start an effective vaccination program in order to lessen the burden of disease. Prophylactic vaccines of HPV are considered as important tool in the prevention of cervical cancers.[14]

Two different prophylactic vaccines of HPV have been approved to prevent cervical cancers. Among the two different vaccines, one is known as "Cervarix" to target HPV serotypes 16 and 18 while the other is known as "Gardasil" meant to target all the four main aforementioned HPV serotypes. Cervarix is bivalent while Gardasil is quadrivalent. Different clinical trials have already been conducted to validate the safety and efficacy of Cervarix and Gardasil.[15]

Although in different countries similar studies have been conducted to know the knowledge, attitude and practice of HPV vaccination but no published study has been found to be conducted in our locality especially targeting the medical students. It has been already documented that the medical students play a vital role in spreading knowledge regarding cervical cancer.[16]

Different studies have revealed that proper knowledge and basic information regarding HPV can influence attitude and thus the acceptance of vaccination.[17]

The current study was therefore undertaken to assess basic knowledge and perception of senior medical students regarding HPV vaccine and to their attitude towards its acceptance because no matter in whichever specialty do the medical students opt after their graduation, they will remain as an ambassador of health promotion and health education. The society has got a lot of expectations from the doctor community and it is regarded to be a general practice to seek doctor's advice regarding any important health issue. Secondly due to lack of tertiary care hospitals and specialized maternal and child health care centers in majority of rural areas, the burden of responsibility on the shoulders of doctors serving the rural population is further increased. As vaccination is regarded to be an effective mean of prevention from a disease, therefore the doctors are required to have basic knowledge regarding important vaccines that are usually used in prevention of common diseases. The rational was selection of senior medical students in our study was that as they have knowledge of not only basic medical sciences but also of different clinical sciences. Moreover, senior medical students have got a comparative more clinical exposure. Furthermore, they are the one who will graduate in the next one or two years and will be then directly starting serving the community. The results of this study will not only help us in knowing the basic knowledge of medical students in our locality, but it will also help in evaluating the level and extend of education regarding HPV and cervical cancers. Thus as a result we can devise policy revision of undergraduate medical curriculum. Furthermore recommendations can be given to the concerned stake holders and government officials to start a comprehensive awareness campaigns and devise HPV nation-wide vaccination policy.

MATERIAL AND METHODS

A cross-sectional study was carried out January 2016 at Kuwait Teaching Hospital Peshawar. All the 196 students enrolled in fourth and final year MBBS were surveyed through a pre-tested and structured questionnaire on basic knowledge regarding cervical cancer and HPV vaccine out of which 166 students responded to the questions. The response rate was 84.6%. The questionnaire was divided into four parts. The first part was to know the basic demographic information of study participants. The second part consisted of set of questions to assess the knowledge of students regarding the cervical cancers while the third part comprised of set of questions to assess the knowledge of students regarding HPV vaccine covering different versatile aspects like dosage, recommended age group, availability in our locality and efficacy. Finally the fourth and the final part comprised of set of questions to assess the attitude of medical students towards HPV vaccination. Regarding ethical consideration, all the study participants were ensured regarding confidentiality and anonymity. The data was analyzed in SPSS version 19 while the charts and graphs were designed in MS Excel 2007. The study duration was almost three and half months.

RESULTS

All the 196 enrolled students were included in our study out of which 166 responded. Out of those 166 students, 122 (73.5%) were females whiles 44 (26.5%) were males. The mean calculated age was 22.49 with standard deviation of 0.899. One hundred and forty seven (85.5%) of the study participants were aware that cervical cancer can be prevented. Thirty six (82%) males compared to 111 (91%) females were aware of the preventive aspect of cervical cancer.

It is now evident that the major causative agent of cervical cancer is Human Papilloma Virus. A total of 132 (80%) study participants answered correctly to this question out of which 32 (74.4%) were males and 100 (82%) were females. Only 33.33% (n = 55) study participants were aware about the accessibility of vaccine in Pakistan out of which 34% (n = 15) were males and 33.05% were females.

According to the study conducted by Castellsa-

Table-1: Awareness regarding different aspects of cervical cancer and HPV vaccination

Statements		Gender		Total
		Male	Female	
Cervical Cancer Preventable	True	36	111	147
	False	4	5	9
	Don't know	4	6	10
Total		44	122	166
Cervical Cancer is caused By	Bacteria	5	11	16
	Virus	32	100	132
	Fungi	3	1	4
	None of these	3	10	13
Total (*One male student did not respond to this question)	43*	122	165*	
HPV vaccine is available in Pakistan	Yes	15	40	55
	No	14	25	39
	Don't know	15	56	71
Total (*One female student did not respond to this question)		44	121*	165*
Target age group for HPV vaccine	0-10	7	13	20
	11-30	17	60	77
	31-50	13	40	53
	Above 50	4	4	8
Total (*Three male students and 5 female students did not respond to this question)	41*	117*	158*	
Doses	One	8	20	28
	Two	11	28	39
	Three	18	59	77
	Four	3	11	14
Total (*Four male students and 4 female students did not respond to this question)	40*	118*	158*	

Table-2: Attitude towards HPV vaccination

Statements		Gender		Total
		Male	Female	
Consent to receive HPV vaccination	Yes	13	93	106
	No	22	12	34
	Don't know	8	17	25
Total (*One male student did not respond to this question)		43*	122	165*
Willingness to advice others	Yes	32	103	135
	No	4	6	10
	Don't know	7	13	20
Total (*One male student did not respond to this question)		43*	122	165*

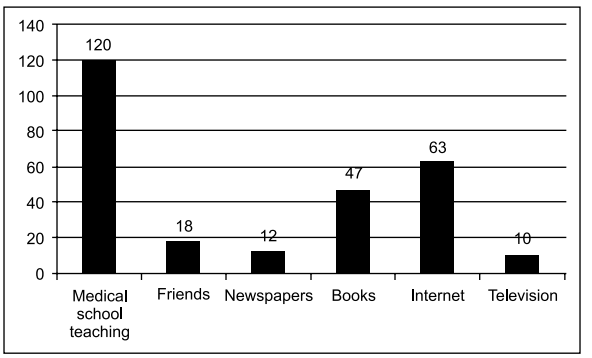

Figure-1: Sources of knowledge and information about HPV vaccination

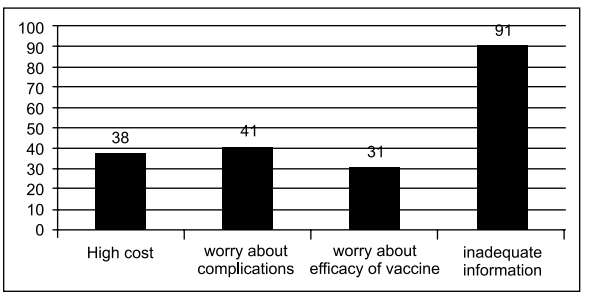

Figure-2: Hurdles in promoting and receiving HPV vaccine

gué et all, the target population for routine vaccination against cervical cancer includes the girls and young women.[18] Awareness of study participants regarding this particular aspect was 48.7% (n = 77) including 41.4% males (n = 17) and 51.3% females (n = 60).

According to Centers for Disease Control and Prevention (CDC), HPV vaccine is also recommended for boys due to the increase incidences for HPV related cancers.[19] A total of 17.4% (n = 29) study participants answered corrected to the question related to option of giving HPV vaccines to boys, including 29.5% (n = 13) males and 13.1% (n = 16) females.

Almost half (49%) of study participants knew about that HPV vaccine schedule consists of 3 dosage which included 45% males and 50% females. Only 11.5% (n=19) of study participants stated that their acquaintance have sought their opinion regarding HPV vaccination among whom 13.9% were males and 10.7% were females. Table-1 reveals the detailed analysis of responses by the study participants regarding different aspects related to knowledge of cervical cancer and awareness regarding HPV vaccine.

Sixty four percent (n=106) participants showed their consent to receive HPV vaccine including 30.2% males and 76.2% females. A total of 81.8% (n=135) participants showed their willingness to advice others regarding HPV vaccine which included 74.4% males and 84.4% females. (Table-2)

The most common source of knowledge and information on HPV vaccination for participants of our study was revealed to be medical school teaching (44.4%) followed by internet (23.3%), books (17.4), friends (6.6), newspapers (4.4%) and television (3.7%). (Figure-1) According to our study participants, the major hurdles in the way of getting HPV vaccine were inadequate information (45.2%), worry about complications (20.4%), high cost (18.9%) and worry about efficacy of vaccine (15.4%). (Figure-2)

DISCUSSION

One of the studies carried out by Saha et al in India revealed that very few graduate and postgraduate students were aware regarding HPV vaccine.[20] Another study regarding awareness about cervical cancer and its risk factors among educated youth in Sri Lanka, Nepal and India was revealed to be 57.7% in Sri Lanka, 58.8% in Nepal and 66% in India.[21] The difference in the results can be due the difference in selection of target population as in our case the target population was medical students while in the case of aforementioned study, the target population was educated youth. The study conducted in Belgium revealed that 50% of women attending gynecological checkup were aware about the availability of vaccine; [22] however in our case it was 33.3%, in spite of the fact that in our case the target population was medical students which are actually not a true representation of general population. It depicts that the level of awareness among the general population of our community would be even lower than the results obtained in our study. Similar study was conducted in India among medical students which showed that 75.6% of medical students were aware about the availability of vaccine in their locality.[23] Again the variation in results can be due the reason that in the aforementioned study cervical vaccine is a part of undergraduate medical curriculum

Majority of study participants were aware about the causative agent and viral origin of disease.

More than 50% males and almost half of females were not aware about the target age group for HPV vaccination. This depicts the importance of initiating nation-wide awareness programs in order to aware the general community.

While analyzing the results, it was revealed that among the study participants there was a general perception of more than half of participants that HPV vaccine is for females only and has got no benefit for males. This again depicts the importance of proper awareness programs regarding HPV vaccination so that to clear any sort of ambiguity and doubt.

Our study participants showed positive attitude towards acceptance of HPV vaccination. More than half of the study participants were willing to receive HPV vaccine. The acceptance ratio was more in case of females as compared to the males which again reflects

that need to specific awareness programs addressing the male segment of the society in order to ensure effective vaccination program. Newspapers and television were revealed to be the two least common sources of knowledge and information on HPV vaccination. In any community, the print and electronic media plays a vital role in spreading awareness about the community regarding any aspect. Initiation of effective awareness programs by print and electronic media can play a very important part in raising the level of awareness among the community. Medical school teaching was found to be the most common source of knowledge and information on HPV vaccination, however the responses of study participants to different questions depicts the need of revising the curriculum and syllabus of undergraduate program. Similarly lack of availability for adequate information regarding HPV vaccine was found to the major hurdle in the way of getting HPV vaccine.

High cost of HPV vaccine was found to be another important hurdle in the way of getting HPV vaccine. Studies conducted in Turkey and China also highlighted high cost of HPV vaccine as a barrier for ensuring effective vaccination program.[24, 25] In a review article published in India, high cost was found to be the major hurdle for initiating an effective vaccination program on a mass scale.[26] The government sector can address this particular issue by allocating specific funds. The government sector can provide HPV vaccines on subsided rates to specifically high risk population and to those who come under the category of target age group population. In order to ensure access of HPV vaccination to poor segment of society, the government can include it in the basic health insurance program that is designed for those people who cannot afford health services in order to ensure universal health coverage.

According to our best available knowledge, previously not even a single published study is available to reveal the knowledge and attitude of medical students of Pakistan regarding various aspects of HPV vaccine. However one study was previously conducted in Karachi by Ali et al.[27] to assess awareness and knowledge of about cervical cancer among nursing staff and interns.

This study has helped us in knowing the level of knowledge of medical students regarding HPV vaccine. The results of this study can seek the attention of medical educationists involved in curriculum development in Pakistan. The results will also attract the health care professionals and public health specialists in initiating awareness programs to further enhance the knowledge of HPV vaccine and HPV related infections among medical students, in specific and community, in general. The study was confined only to the medical students which was the limitation of our study. Moreover, restricting the study among the medical students from a single institute is a major limitation of our study. Before taking any major step in curriculum modification or implementing a policy, there is a need to conduct similar studies in an appreciable number of medical schools situated in various provinces of Pakistan in order to know a more precise level of knowledge of medical students regarding HPV vaccine and HPV related infections.

There is a need to conduct specific health awareness programs including seminars, lectures, group discussions as well as scientific meetings including conferences, symposia and plenary sessions in order to maximally promote aware the medical students and doctors community who acts as a direct and convenient source of knowledge related to health related aspects for general community. There is a need to allocate required credit hour(s) specifically dedicated to HPV vaccine in order to equip budding doctors with necessary knowledge. Continuous medical education (CME) sessions must be arranged for gynaecologists in specific and health care providers in general, in order to keep them updated regarding the recent advances.

CONCLUSION

The study concludes that majority of the study participants were aware that cervical cancer can be prevented. Majority knew about its etiology, dosage, . However, most of the study participants were not aware regarding target age-group for HPV vaccine, accessibility of vaccine in Pakistan and its recommendation for boys. Most of the study participants expressed their consent to receive HPV vaccine and willingness to advice others. However, among the boys more than half of the study participants were reluctant to receive HPV vaccine.

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