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Awareness of HPV and Cervical Cancer Vaccine among PHC Physicians in Kuwait

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Research Article

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ABSTRACT

Background: Cervical cancer, although largely preventable, remains the most common cause of cancer mortality among women.

Objective: The objective of this study was to evaluate primary care physicians' knowledge regarding cervical cancer occurrence, screening and vaccination as well as HPV.

Methods: This study was a cross-sectional survey that was conducted in the Capital primary health care centers in Kuwait. An anonymous self-administered questionnaire was distributed to all currently working physicians in the selected centers. It included data related to personal characteristics as well as physicians' knowledge regarding cervical cancer epidemiology, risk factors, clinical features, screening and causative agents.

Results: The response rate in this study was thus 60.7% with an overall percentage knowledge score of 63.4% $\pm$ 8.9%. The mean percentage knowledge score for different domains ranged from 58.5% $\pm$ 15.1 % to 69.2% $\pm$ 17.5%.

Conclusion: Physicians' knowledge regarding cervical cancer was fair. However, certain aspects of knowledge need enhancement.

Keywords: Cervical cancer, HPV, physicians, knowledge.

INTRODUCTION

Cancer of the cervix uteri is the second most common cancer in women and is the most common gynecologic malignancy worldwide. There were about 530,232 new cases in 2008 alone, and 85.5% of these occurred in developing countries. (Ferlay et al., 2010) Cervical cancer is a major public health problem and it is second most common cancer in women worldwide and the leading cause of cancer deaths in developing countries. (Anorlu, 2008)

A major discovery in human cancer etiology has been the recognition that cervical cancer is a rare consequence of an infection by some mucosotropic types of Human papillomavirus (HPV). By the year 2000, the epidemiological evidence included a large and consistent body of studies indicating, beyond any reasonable doubt, strong and specific associations relating HPV infections to cervical cancer. (Thomas et al., 2001)

HPV is one of the most common sexually transmitted infections. (Cates, 1999; Baseman and Koutsky, 2005). Over 50% of sexually active women are exposed to at least one HPV type during their lifetime. (Baseman and Koutsky, 2005) HPV infection occurs in women of all age groups and the highest rates of HPV infection are seen in women 20–24 years old. (Dunne et al 2007)

Genital HPV types have been classified as either high risk (mainly types 16 and 18) or low risk (mainly types 6 and 11), reflecting their potential risk of causing malignant lesions. Persistent infection of the cervix uteri with specific high-risk types of HPV is a prerequisite for the development of cervical intraepithelial neoplasia and cervical cancer. HPV types 16 and 18 cause approximately 70% of cervical cancers. (Moscicki et al., 2006)

There are two types of HPV vaccine that have received regulatory approval for use in cervical cancer prevention programs worldwide. The vaccines are best administered prior to exposure to the virus, ideally during preadolescence. (WHO, 2009) It is hoped that the available HPV vaccines will markedly reduce the burden of cervical cancer and other HPV-related diseases in developing countries. Several studies, mostly from developed countries, have shown that the knowledge of HPV infection and vaccines and the acceptability of these vaccines among health care providers and the general public vary from low to high. (Jain et al., 2009; Dursun et al., 2009; Christian et al., 2009) Causal role of infection with high risk HPV strains in cervical cancer has been targeted in the past two decades. A number of primary and secondary preventive approaches have been developed to prevent and treat infection with HPV (Wheeler, 2007). High income countries have successfully reduced the

cervical cancer burden by over 70 percent using one such approach of organized cytological based pap smears. A number of preventive strategies are currently being practiced in developed countries including use of two novel prophylactic vaccines and a number of secondary preventive strategies. Most of these interventions are currently not feasible in low income countries because of the already limited health care infrastructure (Das et al., 2008). At the same time it is imperative that our health care professionals are aware of these advances and especially of those interventions which can be utilized in low-resource settings

Physicians in primary health care (PHC) can play an important role in disseminating knowledge about cancer cervix and the available preventive vaccines. Therefore, the awareness of PHC physicians will greatly influence the success of prevention of cervical cancer. The aim of this study was to evaluate physicians' knowledge regarding HPV infection, cancer cervix and vaccines in PHC centers.

SUBJECTS and METHODS

The health care system in Kuwait is divided into five regional health authorities. PHC is provided through 92 centers distributed in the health regions proportionate to their population. This study was a cross sectional descriptive survey that was conducted from February to August 2012 in all 24 PHC centers located in a randomly selected health region (Capital). All currently working 206 physicians in the selected center were asked to participate in the study.

Data of this study was collected through a specially designed questionnaire that was derived from other published studies dealing with the same topic as well as from our own experience. It contained data related to personal characteristics as well as physicians' knowledge regarding cervical cancer epidemiology, risk factors, clinical features, screening and causative agents. Knowledge questions were multiple choice ones, each question was awarded "1" marks with the correct answer while each wrong answer was given a "0" mark. The final part of the questionnaire was related to the physicians' opinions regarding cervical cancer vaccine.

The participants were assured that the outcome would not be used for performance appraisal of the individuals. The participants were requested to complete the answers without consulting materials, textbooks or fellow staffs. They were given 10 minutes to do so. The answered questionnaires were then returned to the principal investigators directly

A pilot study was carried out on 10 physicians to test the clarity, applicability of the study tools, identify the difficulties that may be faced during the application. Also, the time needed for filling the questionnaire by the staff was estimated during this pilot study. The necessary modifications according to the results obtained were done.

All the necessary approvals for carrying out the research were obtained. The Ethical Committee of the Kuwaiti Ministry of Health approved the research. A written format explaining the purpose of the research was prepared and signed by the physician before filling the questionnaire. In addition, the purpose and importance of the research were discussed with the director of the health center.

Statistical analysis

The Statistical Package for Social Sciences (SPSS-17) was used for data processing. Simple descriptive statistics were used (mean $\pm$ standard deviation for quantitative variables and frequency with percentage distribution for categorized variables).

RESULTS

Of the 206 questionnaires sent to PHC physicians in, 125 were available for analysis with a response rate of 60.7%. The mean age of respondents was 37.3 ± 9.6 years, 65.6% were female. About two thirds (65.6%) were Kuwaiti physicians and 60.0% had higher degree than university education, 54.4% were family physicians. And 78.4% were ever married. (Table 1)

Table 1: General characteristics of the participating physicians

Variable	No.	%
Gender		
M	43	34.4
F	82	65.6
Age groups		
<30	26	20.8
30-39	65	52.0
40-49	12	9.6
≥50	22	17.6
Nationality		
K	82	65.6
NK	43	34.4
Education		
University	50	40.0
Higher	75	60.0
Job		
FP	68	54.4
GP	57	45.6
Marital status		
Single	27	21.6
Ever married	98	78.4
Total	125	100.0

The overall physicians' percentage knowledge score was $63.4\% \pm 8.9\%$. Table 2 reveals the proportion of participants answered correctly statements related to cervical cancer. Regarding its epidemiology, 44.0% of physicians answered correctly that cervical cancer is the most common among gynecological cancers, 96.0% that the cause of cervical cancer is infection, and 97.6% that the causative agent is virus. However, only 24.8% were aware that cervical cancer ranked as the leading cause of mortality amongst gynecological cancer. The mean percentage knowledge score of this domain was $64.2\% \pm 17.9\%$.

The proportion of correct answers regarding the risk factors of cervical cancer was 96.8% for multiple sexual partners 92.8% for infection with HPV, 60.0% for poor hygiene, 70.4% for early age of first coitus, 47.2% for smoking, 48.8% for family history of the disease, 36.8% for multiparty and 26.4% for contraception. The mean percentage knowledge score of this domain was $65.7\% \pm 10.6\%$.

Physicians' knowledge regarding the presenting features of cervical cancer varied and percentage of correct answers was 67.2% for no symptoms, 35.2% for lower abdominal pain, 86.4% for bleeding per vagina, 66.4% for discharge per vagina, 44.8% for menstrual problem, 64.8% for weight loss, 87.2% for post coital bleeding, and 54.4% for anemia. The mean percentage knowledge score of this domain was $58.5\% \pm 15.1\%$.

Regarding knowledge about cervical cancer screening and vaccine, 60.8% of physicians knew correctly that women aged 25-44 years should attend for screening according to WHO once every 3 years, while, only 28.8% knew that women aged 45-60 years should attend for screening according to WHO once every 5 years. On the other hand, the majority of them (84.8%) were aware that there is a vaccine that protect from cervical cancer, and 69.6% knew that this vaccine does not protect against all cervical cancer, moreover, 71.2% were aware that girls who have been vaccinated will need to attend for screening. The mean percentage knowledge score of this domain was $63.0\% \pm 22.9\%$.

All physicians know that HPV is the causative agent for cervical cancer. Most of them (97.6%) were aware that HPV is transmitted sexually, 88.0% knew correctly that HPV cause other diseases, 95.2% thought that HPV could be detected. Pap smear, PCR, and biopsy as available techniques for HPV detection were correctly known by 91.2%, 55.2% and 53.6% of respondents respectively. The mean percentage knowledge score of this domain was $69.2\% \pm 17.5\%$.

Table 2: Proportion of participants answered correctly statements related to cervical cancer

Statement	No.	%
Epidemiology:		
Cervical cancer is the most common among gynecological cancers.	55	44.0
Cervical cancer is the leading cause amongst gynecological cancer	31	24.8
The cause of cervical cancer is		
– Genetic (F)	37	29.6
– Infection	120	96.0
– Environmental (F)	40	32.0
The organism causing the infection is		
– Viruses	122	97.6
– Bacteria (F)	79	63.2
– Parasite (F)	98	78.4
– Fungus (F)	96	76.8
Mean % score = 64.2%±17.9%		
Risk factors of cervical cancer		
Multiple sexual partners	121	96.8
Infection with HPV	116	92.8
Poor hygiene	75	60.0
Early age of first coitus	88	70.4
Smoking	59	47.2
Family history of the disease	61	48.8
Multiparity	46	36.8
Old age (F)	72	57.6
Contraception (IUCD ,OCP)	33	26.4
Nulliparity (F)	67	53.6
Mean % score =65.7±10.6		
Clinical features of cervical cancer		
No symptoms	84	67.2
lower abdominal pain	44	35.2
Bleeding per vagina	108	86.4
Discharge per vagina	83	66.4
Fever (F)	83	66.4
Menstrual problem	56	44.8
Itching (F)	63	50.4
Weight loss	81	64.8
Swelling of cervix (F)	26	20.8
Post coital bleeding	109	87.2
Anemia	68	54.4
Mean % score = 58.5%±15.1%		
cervical cancer screening:		
Women aged 25-44 years should be screened every 3 years according to WHO	76	60.8
Women aged 45-60 years should be screened every 5 years according to WHO	36	28.8
There is a vaccine protect from cervical cancer	106	84.8
The vaccine does not protect against all cervical cancer	87	69.6
Girls who have been vaccinated will need to attend for screening	89	71.2
Mean % score = 63.0%±22.9%		
Hepato-papilloma virus (HPV)		
HPV is the Virus responsible for a wide range of diseases including cervical cancer	125	100.0
HPV cause other diseases?	110	88.0
HPV can be detected?	119	95.2
HPV is transmitted by		
– Oro-fecal (F)	83	66.4
– Sexual	122	97.6
– Blood (F)	69	55.2
– Environmental (F)	75	60.0
The Technique available for HPV detection		
– Blood test (F)	77	61.6
– Pap smear	114	91.2
– PCR	69	55.2
– Biopsy	67	53.6
Mean % score = 69.2%±17.5%		
Overall % score =63.4% ± 8.9%		

(F): False

Concerning physicians, opinions regarding cervical cancer vaccine, only 28.0% knew friends or family member who received the vaccine in Kuwait, 23.2% frequently recommended the vaccine for their patients. Lower percentage thought that Kuwaiti women were aware about the risk of getting cervical cancer and the presence of the vaccine (17.6%), only 10.4% thought that the media covered the subject about cancer cervix and its vaccine well. However, the majority of physicians (75.2%) thought that it is necessary to introduce the vaccine in schoolgirls in Kuwait.

Table 3: Physicians' opinions regarding cervical cancer vaccine

Physicians opinions	No.	%
Did you know that any of your friends or family had received the vaccine in Kuwait?		
No	74	59.2
Yes	35	28.0
Do not know	16	12.8
How often do you recommend cervical cancer vaccine to your patient?		
Never	53	42.4
Rarely	43	34.4
Frequently	29	23.2
Do you think that Kuwaiti women are aware about their risk of getting cervical cancer and the presence of vaccination?		
No	80	64.0
Yes	22	17.6
Do not know	23	18.4
Do you think that media in Kuwait covered the subject about cervical cancer well?		
No	97	77.6
Yes	13	10.4
Do not know	15	12.0
Is it necessary to introduce cervical cancer vaccine in schoolgirls in Kuwait?		
No	13	10.4
Yes	94	75.2
Do not know	18	14.4
Total	125	100.0

DISCUSSION

The majority of respondents in our survey were unable to recognize cervical cancer as a major public health problem. Only about less than a half (44.0%) of participants were able to correctly identify cervical cancer as being the most common gynecological cancer. However, in Pakistan only about a quarter of the health professionals interviewed were able to correctly identify cervical cancer as being the most common gynecological cancer as also reported for India (Ali et al 2010, Lee et al 2007). Also, a quarter of participants identified cervical cancer as an important killer amongst gynecological cancers in women. This was an unexpected finding that the PHC physicians are unaware of the fact that cervical cancer is the second leading cause of cancer-related mortality among women in developed countries and is still the leading cause of death due to gynecological cancers in the developing countries (Anorlu, 2008). This was on the contrary to the results of a study done in Thailand which showed that the majority of the respondents were aware of the burden imposed by cervical cancer on health system and had moderate level of knowledge regarding cervical cancer and HPV (Nganwai et al., 2008).

Studies done on knowledge about cervical cancer, HPV infection and its prevention in general population showed inadequate information of the participants on the concerned topic (Tebeu et al., 2007; Lee et al., 2007; Mosavel and El-Shaarawi, 2007). On the basis of these findings it can be expected that considering the knowledge about this disease in health professionals, the knowledge in general population of Kuwait will be even less. All participants in the current study were aware that HPV infection can lead to cervical cancer. These results show sufficient knowledge of HPV infection being the cause of cervical cancer among PHC physicians in Kuwait as 98% of cervical cancer in our part of the world is due to HPV infection, as reported in a study done in India (Lee et al., 2007). These results differ from other studies done in the rest of the world showing less than satisfactory knowledge about the cause of cervical cancer in the community as well as health professionals (Lee et al., 2007; Nganwai et al., 2008; Mosaveland El-Shaarawi, 2007).

Despite that the overall mean score in this area was moderate (65.7%), the respondents who were able to correctly identify HPV infection as cause of cervical cancer were further assessed about their knowledge about the mode of infection where 97.6% correctly reported sexual contact as the mode of transmission for HPV.

infection and 88.0% of participants were knowledgeable about the information that HPV is also responsible for other diseases as skin warts. In the view of 95.2% of the participants, HPV could be detected but slightly more than half (55.2%) correctly reported PCR to be the test used for detection of HPV infection. This showed that half of the study subjects who were aware of HPV infection and its relation to cervical cancer had moderate knowledge about HPV infection itself. These results showed better knowledge about HPV infection in health professionals as compared to general population as shown by various studies done worldwide.(Lee et al., 2007;Nganwai et al., 2008;Mosavel and El-Shaarawi, 2007)

Risk factors for cervical cancer include early onset of sexual activity, multiple sexual partners, infection with HPV, poor hygiene, family history of disease the disease, smoking, high parity, low socioeconomic status, old age, and prolonged use of oral contraceptives.(Goldsmith et al., 2007; Castellsague et al., 2002;Anttila et al., 2001).In our study most PHC physicians stated that unsafe sexual practices, infection, early onset of sexual practice as common risk factors that was in accordance with our literature search. However, poor hygiene, family history and nulliparity as risk factors were some of the misconceptions present. In agreement with Shapley et al., 2006, in the current study the most frequent symptoms at presentation selected by participants were postcoital bleeding (87.2%), abnormal vaginal bleeding (86.4%), vaginal discharge that may be watery, mucoid, or purulent and malodorous (66.4%). Pelvic or lower back pain and bowel or urinary symptoms mostly suggest of advanced disease (35.2%).Postcoital bleeding as a common presenting feature of cervical cancer were correctly identified in our study by 87.2% of the participants. Lower abdominal pain, weight loss, menstrual problems were not known in higher percentages among the physicians. This emphasizes on the need to increase the awareness about cervical cancer in health professionals who are involved in the primary care of general patient population and form an important source of guidance for them.

Unlike most other cancers, cervical cancer is readily preventable when effective programs are implemented to detect and treat its precursor lesions (Sherris et al., 2005) Underutilization of cervical cancer prevention services by women in the high-risk age group of 30–60 years can be attributed to health service factors such as lack of awareness of health professionals about the screening test and its guidelines, poor availability, poor accessibility, and poor quality of care provided, women's lack of information, and cultural and behavioral barriers. Bhurgri et al., 2007 reported that only 40% of the respondents were aware that Pap smear is the screening test for cervical cancer. Our study also evaluated the knowledge of physicians about Pap smear with 91.2% of the participants were aware about this. This showed adequacy of our health professionals' knowledge about the primary prevention of cervical cancer. This result cannot explain why most of the cervical cancer in the region presents late in advanced stage (Bhurgri et al., 2007). Other studies done in high and low income countries showed higher prevalence of awareness about the screening test. In a recent study in Pakistan, Imam SZ et al., 2008, reported that the knowledge of availability of screening for cervical cancer amongst general population was only 5% and of the sample only 2.6% had ever received a Pap test. One of the reasons for this finding could be the lack of knowledge of health professional themselves, who are responsible to educate general population.

In the current study 60.8 % physicians knew that women aged 25-44 years should attend for screening, according to WHO, once every 3 years. In contrast, Pakistani guidelines recommend Pap smear to be done every 3 years. However, according to the American Cancer Society guidelines screening should be carried out every year and that interval can be extended to 3 years.(Imam SZ et al., 2008; Goldsmith et al., 2007)

Prevention of HPV infections is very essential in prevention of cervical cancer. The advent of HPV vaccine has been a major breakthrough. Many studies have been done worldwide recently on the knowledge and awareness, attitude, beliefs and practices about HPV vaccine. In the current study, 84.8% of PHC physicians were aware that there is a vaccine which protect from cervical cancer and 71.2% were aware that girls who have been vaccinated will need to attend for screening. This was consistent with studies that reported better knowledge in developed countries like the USA, Belgium and Australia, but other countries like Thailand, Turkey and China had poor information about HPV and HPV vaccine (Nganwai et al., 2008;Lee et al.,2007;Hanisch et al., 2007;Donders et al., 2008;Rosenthal et al., 2007;Baykal et al., 2008; Kwan et al., 2008).

In the current study, the majority of physicians (75.2%) thought that it is necessary to introduce the vaccine in schoolgirls in Kuwait and only about one fifth (23.2%) frequently recommended the vaccine for their patients. It was reported that most health care providers felt comfortable counselling about the vaccine and administrating it (Pearce et al., 2009). Duval et al., 2007 reported that most of the Canadian physicians in their study indicated that they expected an important benefit from HPV vaccination and intended to prescribe the HPV vaccine to patients.

In the current study, only 17.6% of physicians thought that Kuwaiti women were aware about the risk of getting cervical cancer and the presence of the vaccine and only 10.4% thought that the media covered the subject about cancer cervix and its vaccine well. This indicated the non-awareness of women about the topic. In consistent with that, Chow et al.,2010 evaluated Asian mothers' and physicians' knowledge and attitudes about HPV vaccination. Their results showed that physicians should be more proactive in discussing and recommending the HPV vaccine. In addition, the study by Barnacket al., 2010 revealed that religiosity, perceiving their children as susceptible to HPV and perceived negative consequences of HPV infection were significant

predictors of parents' willingness to vaccinate for HPV. Therefore, the physicians' decision to vaccinate their own children was important to encourage parents to vaccinate their children (Barnack et al., 2010).

CONCLUSION

The overall knowledge PHC physicians was moderate. This suggested that physicians' levels of knowledge and understanding of cervical cancer as well as its preventable nature should be improved. For successful screening programs, all healthcare workers must understand the causative relationship between HPV and cervical cancer as well as the importance of screening as a preventive measure. Vaccination against the most oncogenic HPV types is recommended by the Standing Committee on Vaccination (STIKO) for 12-17 year old girls since March 2007. (Horn et al., 2013) Continuing physicians' education may contribute to strengthening cervical cancer screening and vaccination programs. Physicians have to translate the scientific language to something understandable for the public.

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