Knowledge and Attitude of Human Papilloma Virus, Cervical Cancer and its Prevention in the Western Region of Saudi Arabia

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Abstract: Background: Cervical cancer remains a problem worldwide in women. It is not only the fourth most common cancer, but also the fourth most common cause of death in women. Human papillomavirus (HPV) is one of the most common causes of sexually transmitted infection and it is now known to be a risk factor for the development of cervical cancer. However, it is considered as a preventable disease, as many prevention strategies have been developed in order to combat its occurrence. There is a scarcity of data from the Middle Eastern region regarding knowledge and attitude of women towards HPV infection, cervical cancer prevention and the HPV vaccine. Aim: The aim of this cross-sectional study was to evaluate knowledge, awareness and attitude towards HPV disease and vaccine and to assess the acceptance of routine Pap smear screening for cervical infection and cancer in a religious society among females living in the Western Region of Saudi Arabia. Methods: A sample size of 319 subjects were included in the study; married, divorced or widowed women from different groups such as students, housewife’s, health care workers, teachers, sales or retired women. All were invited to participate and complete an electronic questionnaire. Results: Concerning knowledge about cervical cancer, more than two third of participants 274 (85.9%) heard about cervical cancer and 270 (84.6%) were not aware about HPV. Regarding prevention about 112 (62.2%) of participants never had a pap smear done in the last 3 years. Amongst the participants (89.2%) never took the vaccine. This study highlights the need for educational programs regarding HPV infection and its complications such as cervical cancer. Conclusion: The present study shows inadequate levels of knowledge and awareness about HPV as well as transmission of infection and importance of Pap smear test screening.

Keywords: HPV, Cervical cancer, Pap smear, Sexually Transmitted Infection

1. Introduction

Cervical cancer is both the fourth most common cause of cancer and the fourth most common cause of death from cancer in women worldwide and was associated with an estimated 530,000 new cases and 275,000 deaths in 2008 [1]. In Saudi Arabia, cervical cancer ranks as the eleventh most frequent cancer in women, and the eighth most frequent cancer among women between the ages of 15 and 44 years old [2]. The World Health Organization (WHO) has reported that 6.51 million women in Saudi Arabia aged 15 years and older are at risk of developing cervical cancer. Current estimates indicate that 152 women in Saudi Arabia are diagnosed with cervical cancer and 55 die from the disease each year [3]. The etiological role of human papilloma virus (HPV) in the development of pre-invasive and invasive lesions of the cervix, vagina and the ano-genital region is well established.

Human, papillomaviruses are members of a family of small, non-enveloped papillomaviruses having a double-stranded DNA (ds DNA) genome. Composed of approximately 7.9 kilobases (kb) [4], all HPVs infect either the cutaneous or mucosal surfaces of epithelial cells. Approximately 189 HPV genotypes from this diverse group of viruses have been sequenced and classified according to their phylogenetic position, biological niche, and oncogenic potential with new types discovered regularly [5,6]. Based on their oncogenic potential, the 30-40 types from the α-genus of HPVs that infect the human genital tract can be subdivided into low- and high-risk types. Low-risk HPV types include HPV6 and 11. These low-risk viruses have been associated with benign anogenital warts or condylomata. By contrast, at least 12 high-risk HPV (HRHPV) types, HPV-16, -18, -31, -33, -35, -39, -45, -51, -52, -56, -58 and -59, have been associated with anogenital cancers as well as precursor neoplastic lesions [7-8].

The understanding of the oncogenesis of cervical cancer has improved to such an extent that new technologies to detect persistent HPV infection are now being used for management of infected persons. Furthermore, vaccination against infection with specific high risk HPV is now commercially available and is likely to change the future of the disease.

The primary target population for vaccination with the HPV vaccine remains females that have not encountered vaccine-related HPV types. Therefore, the focus has been on young adolescent girls prior to initiation of sexual activity, i.e. the 9 to 13 year age group [9]. The main aim will be high vaccine coverage in this group. This approach has been shown to have the most cost effective reduction in disease burden. Vaccination of older females (already sexually active) has
been suggested as a possible secondary target group worth investigating. The World Health Organization (WHO) advises vaccination in this population provided that resources are not diverted from the primary target group. Vaccination in males has also been debated. The WHO does not advocate vaccination in this population group at present, based on cost-benefit analyses [10].

2. Methods

Study design and setting
A cross sectional study was conducted in some neighborhoods in the Western Region of Saudi Arabia based on an electronic questionnaire during the period from 18June,2017to 31July, 2017after the study was approved by Institutional Review Board ( IRB ) at Umm Al-Qura University. Married, divorced, or widowed women from different groups such as students, house wife’s, health care workers, teachers, sales or retired women , were the target population of our study . The objectives of the study were explained to them, and after they agreed and signed the written consent form they were included in the study. Single females were excluded from the study.

Sample Size:
Assuming a percentage of awareness of cervical cancer at around 71%, according to previous literature, a sample size of 319 subjects was needed, at a confidence level of 95% with a margin of error of 5% [11] we managed to reach 319 subjects.

Measures and Outcomes:
The data was collected by a questionnaire consisting of 4 parts which included sociodemographic data, knowledge about cervical cancer, awareness about Human Papillomavirus vaccine, and attitude toward Pap smear. The main aim was to determinenkowledge and attitudes towards Pap smear screening, Human Papillomavirus and its relation to cervical cancer among females living in Western Region, SaudiArabia.

Analysis:
The data were analyzed using IBM SPSS version 22.0.0. All percentages and frequencies of the available data was analyzed, Chi-square test was done to get relations between different categories. A p value of ≤0.05 was considered statistically significant. Missing data were excluded from the analysis.

3. Results

A total of 319 women were included in the study, the age of participant was categorized into (20-30y, 31-40, 41-50, 51-60, and above 60) and the percentage of them was (19.4%,33.5%,31.3%, 14.1%, 1.6%), and 293(91.8%) were Saudi women, the majority of them has bachelor (66.5%), about (35.7%) of women was not working. (89.6%) of women was married, about (63.6%) has 3 or more children. (Table 1)

Concerning knowledge about cervical cancer, more than two third of participants 274 (85.9%) heard about cervical cancer and 238 (85.9%) of them think that cervical cancer is preventable, about 270 (84.6%) did not hear about HPV, more than two thirds of participants 280 (87.8%) had no abnormal vaginal discharge, a total of 194 (60.8%) did use any type of contraception. (Table 2)

About awareness of cervical cancer screening, a total of176 (55.2%) heard about it, about 87 (49.4%) of participant think the best time for screening is after marriage, about 69 (39.0%) didn't know how many times should the screening done, about 112 (62.2%) of participant don't do pap smear last 3 years, a about 112 (62.2%) of participant has positive Pap smear, a total of 76 (43.2%) was not screened. (Table3)
Table 3: Awareness of pap smear as a screening test

<table>
<thead>
<tr>
<th>Question</th>
<th>Count (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Have you heard about screening for cervical cancer by pap smear</td>
<td>Yes 176  (55.2) No 143  (44.8)</td>
</tr>
<tr>
<td>2- What is the best time to have a Pap smear test</td>
<td>Childhood 1 (0.6) After puberty 16 (9.1) After marriage 87 (49.4) I don’t know 72 (40.9)</td>
</tr>
<tr>
<td>3-How often do you think do you need to go for a pap smear each</td>
<td>Each1 year 44 (24.9) Each 3 years 49 (27.7) Each 5 years 15 (8.5) I don’t know 69 (39)</td>
</tr>
<tr>
<td>4-Have you ever had a pap smear test within the last 3 years</td>
<td>Yes 68 (37.8) No 112 (62.2)</td>
</tr>
<tr>
<td>5-If yes what was the result</td>
<td>Positive 50 (71.4%) Negative 20 (28.6%)</td>
</tr>
<tr>
<td>6-How many times have you been screened in your life</td>
<td>0 76 (43.2) 1 32 (18.2) 2 26 (14.8) 3 and more 42 (23.9)</td>
</tr>
</tbody>
</table>

Regarding the vaccination of HPV, a total of 282 (88.4%) didn't heard about it, 15 (40.5%) of participant hear about it from media, about 11 (29.7%) of participants think the best age of vaccination is after puberty, a total of 33 (89.2%) of participants didn't take the vaccine, 191 (60.6) of them because they didn't hear about it, more than 20 of participants 31 (83.8%) think that the screening of cervical cancer should not be stopped after vaccination. (Table 4)

The level of knowledge estimated by knowledge score and percentage was very low. (Figure.1), (Table5)

Table 5: Sum and percentage of knowledge out of 9 Questions

<table>
<thead>
<tr>
<th>Characters</th>
<th>Freq. (%)</th>
<th>Poor knowledge</th>
<th>Good knowledge</th>
<th>P-value</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>0(0.00)</td>
<td>26(8.2)</td>
<td>26</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1(11.11)</td>
<td>25(7.8)</td>
<td>25</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2(22.22)</td>
<td>66(20.7)</td>
<td>66</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3(33.33)</td>
<td>88(27.6)</td>
<td>88</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4(44.44)</td>
<td>62(19.4)</td>
<td>62</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5(55.56)</td>
<td>23(7.2)</td>
<td>23</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6(66.67)</td>
<td>9(2.8)</td>
<td>9</td>
<td>0</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>7(77.78)</td>
<td>15(4.7)</td>
<td>15</td>
<td>0</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>8(88.89)</td>
<td>4(1.3)</td>
<td>4</td>
<td>0</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>9(100.00)</td>
<td>1(0.3)</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>total</td>
<td>319(100.0)</td>
<td>290</td>
<td>29</td>
<td>319.000*</td>
<td>0</td>
</tr>
</tbody>
</table>

Appendix 1

Original Bloom’s Cut Off Points [13]

- 80-100% (Good Knowledge)
- 60-79% (Moderate Knowledge)
- <60% (Poor Knowledge)

4. Discussion

Cervical cancer is a preventable disease if detected early. The main key to early detection is screening. The success of any screening program will depend on proper rendering of services, health professionals, easy availability, low cost, and above all the awareness and attitude of women who receive the service. (12). The aim of this study was to
determine the awareness and attitude towards HPV disease and vaccine, and also to assess the acceptance of routine Pap smear screening for cervical infection and cancer among females living in the Western Region of Saudi Arabia. A total of 319 women responded to the questionnaire, of these 293(91.8%) were Saudi women and 26 (8.2%) were non-Saudi. The mean age of the participants was (39.5 years). Our results show, in accordance with Original Bloom's Cut Off Points [13] (Appendix 1), that the participants generally, have poor levels of knowledge and awareness about HPV, cervical cancer, transmission of infection, pap smear test that used to detect infection, risk factors such as smoking and vaccine. Eighty percent of participants never heard about HPV, while more than two thirds of participants 280 (87.8%) had no abnormal vaginal discharge, a total of 194 (60.8%) did use any type of contraception. (Table 2) As far as knowledge about Pap smear as a diagnostic tool for cervical cancer screening was concerned, only 176(55.2%) of participants heard about it, while 143(44.8%) were not aware of it. Only 68(37.8%) of participants were screened by Pap smear in the last 3 years, while 112(62.2%) were never screened. (Table 3) Regarding knowledge about vaccination for HPV, 282(88.4%) of participants never heard about the vaccine, while only 37(11.6%) knew about it. (Table 4) The level of knowledge which was estimated by knowledge score (Figure 1.) (Table 5) was very low overall. Regarding knowledge about HPV, 66% of respondents heard about this virus, while 88% were aware of the Pap smear test. The level of knowledge regarding the remaining questions on the questionnaire varied from poor to zero. (14)

Ideström et al. published in 2002 some data about the screening program and Pap smear in Swedish region [15], where a screening program has been in existence since 1970. Comparing our study to Ideström's study, there was a significant difference between the history of previous Pap smear testing among the population of our study (37.8%) and that among the women of the Swedish region (95%). This difference could be attributed to the early existence of the PAP testing there compared to that in the Saudi society. In a study conducted in Iraq, it was shown that only (53.54%) of the respondents had heard about papillomavirus HPV, while, previous study that conducted in California on students females show higher knowledge rate about HPV (75.5%) [16], another study conducted in Natal, Brazil, showed that most participants (70.9%) had poor levels of knowledge about HPV [17]. In a study that was conducted on Chinese and African undergraduate medical student, Mpemba et al., [18] found that (61.2% and 58.5%) knew about HPV. The majority of participants had a very low knowledge levels about cervical cancer which was caused by HPV infection, only 73(36.87%) of them correctly answered, In Qatar, AL-Meer et al., [19] found that just over (85%) had heard about cervical cancer. Only 70(35.35%) of the women respondents knew that HPV is a sexually transmitted agent, different studies had yielded different results, for instance, Lima et al; [18] found that (20.0%) of the women knew that HPV was transmitted by sexual contact. In Colombia, (80.2%) of respondents didn't know that HPV was sexually transmitted [20], while in Thailand, Phiammongkhol et al., [21] reported higher levels of knowledge (83.2%) among nurses. This study showed that the women had very limited knowledge and aware about pap smear test, only (28.79%) correctly answered that pap smear is the test that used to detect abnormal cervical cells (precancerous cells), while other studies in Qatar, Saudi Arabia and Kenya, Brazil reported higher levels of knowledge and awareness about pap smear test (76%, 67.7%, 75%, 68.9%) respectively [19, 22, 23, 24]. Only 30% of the sampled women in the UAE heard about HPV infection (25). This is relatively low compared with another Islamic country like Turkey (45-46%) Dursun et al.; 2009; [26], Ilter et al., 2010 [27], and non-Islamic countries like Belgium (50%) Donders et al; 2008 [28]. This may be due to the conservative nature of UAE community, which is very similar to our study as Saudi Arabia is also a conservative Islamic country with very strict laws, even more then the UAE. Regarding the HPV vaccine in our study (88.4%) of participants never heard of it, while only (11.6%) know about it. This is not surprising since knowledge in the UAE is still low despite the fact that public programs for HPV vaccine are in place in the UAE since 2007.

5. Conclusion

The present study shows inadequate levels of knowledge and awareness about (HPV), cervical cancer, and transmission of infection and Pap smear test among the subjects. Infection of HPV and its complications such as cervical cancer have an adverse effect on women.

6. Recommendations

- A national cervical cancer screening program needs to be implemented in Saudi Arabia in general and in Makkah City in particular.
- Awareness campaign should be intensified through the popular and social media in the Western region.
- Awareness workshops must be held by the Ministry of Health (MOH) in the Western region to all family physicians and Obstetrics and Gynecology physicians about the disease and it preventative measures.
- Finally, physician should make more efforts to increase the awareness about Pap smear and HPV vaccine to their patients and their role in preventing cervical cancer.

No Conflict of Interest

References


