

## Research Article

# Knowledge, Attitudes and Practices towards Human Papillomavirus (HPV) Vaccine & Prevention of Cervical Cancer among Women Attending Primary Health Care

Aloufi NA<sup>1\*</sup> and Albelowi R<sup>2</sup><sup>1</sup>Academy of Family Medicine, Joint Program of Family Medicine, Al-Madinah, Saudi Arabia (KSA)<sup>2</sup>Consultant Family Medicine, Joint Program of Family Medicine, Al-Madinah, Saudi Arabia (KSA)**\*Corresponding author:** Nehal Aaish Aloufi, Joint Program Of Family Medicine, Al-Madinah, Saudi Arabia (KSA)**Received:** March 26, 2022; **Accepted:** April 06, 2022;**Published:** April 13, 2022**Abstract**

**Background:** Cervical cancer is projected to affect 528,000 people worldwide each year. It is the third leading cause of mortality from cancer in developing nations. HPV vaccination was first introduced in 2006, targeting females between the ages of 9-14 years with the aim of preventing HPV that cause cervical precancerous lesions and cancer.

**Methods:** A cross-sectional descriptive study Among Females Attending Primary Health care in AL-Madina AL-Munawarah. All females attending primary health care centers aged 21-65 years or Al-Madina Al-Munawarah. Sample size was 375. The sample size calculated By using Epi-Info version 3.5.1. The study was started after the approval comes from the research committee at Al-Madina region. The researcher took a consent form from the program director of joint program of family medicine and taken it to MOH in Al-Madina City. One primary healthcare center was chosen from each sector.

**Results:** In this study 400 questionnaires were distributed in which 345 participants and response rate was 86.25%, all of them were female and ranged in age from 14 to 65 years. The majority of participants, 112 (32.5%), were between the ages of 26 and 35 years. The majority of participants 222 (64%) were married, Inquiring as to whether you've heard that HPV can cause cervical cancer. 253 respondents said that they had not heard of it. 17% were unaware that HPV is a virus that is transmitted by sexual contact. 7.8% feel it is widespread in Saudi Arabia. 11.9% believe that both men and women are susceptible to infection. 22% that risky sex can raise one's risk of contracting HPV. The majority of individuals expressed concern about the vaccination's negative effects. 250 out of 388 respondents expressed concern about the immunizations' negative effects. Concerning vaccination decisions, 196 believe they should be decided by the individual concerned, while 92 believe they should be made jointly by parents and the individual.

**Conclusion:** Funding for volunteer groups/non-governmental organizations working in the health sector to raise awareness about cervical cancer among healthcare practitioners and the general public might contribute to further reduce the disease's incidence. Public health education is urgently required on the safety and effectiveness of HPV vaccination.

**Keywords:** HPV; Cancer; Women

## Introduction

Cervical cancer is a condition that may be prevented. It is the fourth most frequent kind of cancer in women worldwide. Cervical cancer is projected to affect 528,000 people worldwide each year. Additionally, this cancer type is regarded the second most prevalent in poor nations, with over 400,000 instances diagnosed each year. Cervical cancer is the third leading cause of mortality from cancer in developing nations (230,158 deaths per year) [1].

HPV types 16 or 18 are responsible for around 70% of cervical malignancies. Cervical cancer claims the lives of 288,000 women per year, with 80 percent of these fatalities occurring in underdeveloped nations. HPV infection is mostly spread sexually and affects the

epithelial cells of the cervix and uterus, resulting in precancerous lesions and invasive malignancy [2].

Cervical cancer screening is the primary preventative measure used to lessen the burden of the disease. Cervical cancer screening is mostly used to detect early-stage invasive malignancy. This is accomplished by doing a traditional cytology based Papanicolaou smear (Pap smear) to detect cervical cancer precursors that can be removed prior to progression to invasive carcinoma [3].

Accordingly, the Saudi guideline for cervical cancer screening recommends that the universal screening strategy be followed [4]. The United States Preventive Services Task Force has recommended a Pap smear test every 3 years for women aged between 21 and 65 years.

For women aged between 30 and 65 years who want to increase the length of the screening interval, a Pap smear test combined with a HPV test conducted every 5 years is recommended [5].

The HPV vaccination was first introduced in 2006, targeting females between the ages of 9-14 years with the aim of preventing several types of HPV that cause cervical precancerous lesions and cancer [6].

The researcher noticed that main barrier of women to screening regarding cervical cancer, receive Papanicolaou (Pap) smear tests and immunization is lack of knowledge about the disease’s signs and symptoms. To assess the knowledge of women about the symptoms, risk factors, prevention, and early diagnosis of cervical cancer.

### Methodology

This was a descriptive cross-sectional study conducted in Almadinah Almunawarah in the Academy of Family Medicine, Ministry of Health from January 2021 to June 2021. Almadinah is located in the western Saudi Arabian province of Hejaz. Almadinah Almunawarah has five hospitals, each of which is signed to have a group of PHCCs, for a total of 54 PHCCs. All women over the age of more than 21 who attended PHC were included. Those patients who were sick and mentally ill were excluded. Epi-Info, version 3.5.1, was used to calculate the sample size. The sample size was calculated to be 375. Based on the most recent Ministry of Health (MOH) update in Almadinah Almunawarah, data was obtained using a multistage technique, with stage 1 stratifying primary health care centers according to which hospital is signed in. Stage 2 involved selecting two primary health care centers at random from each hospital group using the Quraa app. In the third step, every 3<sup>rd</sup> female attending the 4 selected PHCs were enrolled in the study. We chose 60 participants from each PHCs. The number of subjects enrolled in the study was proportionate to the total number of subjects attending each center.

Data was collected after the proposal was approved by Institutional Review Board, General Directorate of Health Affairs, Ministry of health, Al-Madina. The researcher distributed the questionnaire herself and recruited students to serve as data collectors. They were well-trained to answer any follow-up questions from participants after they had given their consent. During working hours, the researcher distributed the questionnaire. To increase the response rate, the researcher gathered the questionnaires at the same time. Confidentiality of data was maintained throughout the project. The questionnaire is written in simple Arabic language and contains 31 questions. The first page contain the consent form, which explain the aim of the study to the participants and clarifies that all data from the study was absolutely confidential.

The main questionnaire includes questions on 4 parts:

The first part includes demographic data of participant which include age, marital status, number of children, educational level and occupation.

The second part of the questionnaire includes question about Knowledge about the Human Papilloma Virus (HPV) infection, risk factors and prevention.

The third part includes include question about Attitudes and beliefs about the HPV vaccine (Safety, reassurance, long and short

side effect).

The fourth and last part of questionnaire includes questions related to Vaccination policy (which group, When be given, who should take decision and knowledge towards HPV infection)

Data was stored and analyzed in Statistical Package for the Social Sciences (SPSS) version 26. Categorical variables were described using frequencies and percentages, whereas numerical variables were described using mean and standard deviation (SD). The chi-square test was used to study the association between categorical variables and the Fischer exact test was used instead of the chi-square test in the case of small frequencies.

### Results

In this study total of 400 questionnaires were distributed in which 345 participants and response rate was 86.25%. All were female and age range from 21-65 years. Most of the participants 112(32.5%) were in the age group 26-35 years, followed by 101(29.3%) in age group 21-25 years. Most of the participants 222(64.3%) were married. Table 1 showing demographic characteristics of the participants.

In our study out of 345, only 92(26.66%) were aware that HPV can cause cervical cancer. 66(71.73%) heard it from internet and social media, 13 from studying different books and 6 from family and friends, and 7 from other sources. Table 2 showing the knowledge of the participants regarding the HPV causing cancer. 17% had idea that HPV is virus and cause transmits through sexual contact. 7.8% believe that it is common in Saudi Arabia. 11.9% think that both men and women can be infected. 22.6% think that unsafe sex can increase the chances of HPV. Rest is given in Table 2.

The most concern of the participants regarding the vaccination was side effects 250 out of 388 were afraid regarding side effects of the vaccinations. Rest of the concerns is given in Figure 1.

214 participants think that both genders should be vaccinated regarding the HPV, however 93 believed that only female should be vaccinated. Regarding the decision making about vaccinations, 196 think that the decision should be made by the person concern himself, while 92 think that joint decision of parents and person should be made.

Table 3 showing practice of the participants regarding vaccination in HPV patients.

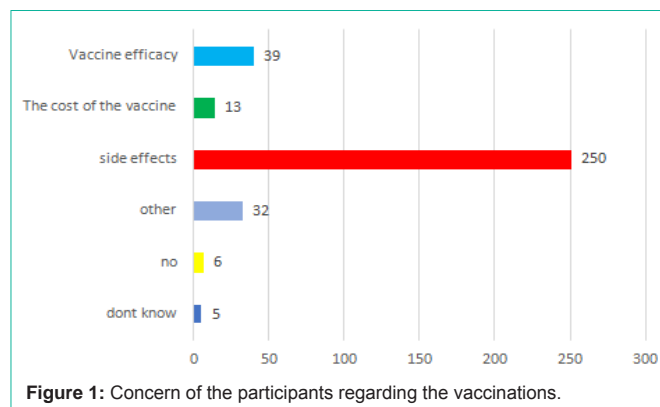


Figure 1: Concern of the participants regarding the vaccinations.

**Table 1:** Showing demographic characteristics of the participants (n=345).

Variable	Frequency	Percentage
<b>Age group</b>		
21-25 years	101	29.3
26-35 years	112	32.5
36-45 years	77	22.3
>45 years	55	15.9
<b>Marital status</b>		
Divorced	15	4.3
Married	222	64.3
Single	101	29.3
Widow	7	2
<b>Number of children</b>		
>4	74	21.4
2	71	20.6
3	31	9
4	37	10.7
no	132	38.3
<b>Education status</b>		
Bachelor's degree	160	46.4
Diploma	19	5.5
High school diploma	105	30.4
Less than high school education	51	14.8
masters and postgraduate studies	10	2.9

## Discussion

The degree of information was found to be inadequate; attitudes about HPV vaccination were unfavorable, exacerbated by a lack of awareness and understanding about cervical cancer prevention and causes. Screening is critical for CC prevention, early identification, and overall care, and is a complex process in comparison to simply knowing about CC.

**Table 2:** Knowledge of the participants regarding HPV.

S. no	Questions	True	False	I don't know
1	Human papillomavirus is a virus of the genital area and is transmitted through sexual contact	61(17.7%)	16(4.6%)	268(77.68%)
2	HPV is common in Saudi Arabia	27(7.8%)	27(7.8%)	291(84.4%)
3	Both men and women become infected	41(11.9%)	36(10.4%)	268(77.68%)
4	Unsafe sexual relations can increase the risk of HPV infection	78(22.6%)	5(1.4%)	262(76%)
5	Most people with inflammation have no symptoms	32(9.3%)	23(6.7%)	290(84%)
6	There is no cure for HPV infection	25(7.2%)	43(12.5%)	277(80.3%)
7	Smoking increase the persistence of the virus and leads to a cancerous change in the cells infected with the virus	51(14.8%)	15(4.3%)	279(80.9%)
8	HPV causes genital warts	57(16.5%)	4(1.2%)	284(82.3%)
9	In women, if the virus persists, this leads to the appearance of abnormal and cancerous cells in the pap smear	83(24.1%)	3(0.9%)	259(75.1%)
10	HPV can cause cancers of other reproductive organ (penis/anus)	53(15.4%)	12(3.5%)	280(81.2%)
12	Prevention against HPV will prevent cervical cancer	77(22.3%)	6(1.7%)	262(76%)
13	Do you think vaccine is safe	198(57.4%)	34(9.9%)	113(32.8%)
14	Do you want to be assured that the vaccine will protect against HPV	278(80.6%)	16(4.6%)	51(14.8%)
15	Are you worried about short term side effects?	216(62.6%)	92(26.7%)	37(10.7%)

The majority found the practice unacceptable, as demonstrated by poor screening and HPV vaccination uptake. The absence of screening services and the non-availability of HPV vaccination in public institutions limited practice. Some women expressed concerns about the vaccination's negative effects and effectiveness, although acceptance of the HPV vaccine was high. The majority of women advocated for a school-based plan that included making the vaccine available free of charge, as well as health education and knowledge about cervical cancer prevention and HPV vaccination.

In research done on Al-Ahsa medical students, almost half of the participants were aware of the early signs and symptoms, as well as risk factors, for cervical cancer [7]. The greater awareness of these students in comparison to our cohort may be explained by the fact that these students, particularly those in their final year, must have recently had cervical cancer taught as part of their curriculum and were therefore more knowledgeable about the illness. This means that medical students get no comprehensive education regarding cervical cancer. As a result, they are most likely unaware prior to practice. This demonstrates the absence of continuing medical education initiatives for healthcare workers in the area about cervical cancer screening and prevention. Furthermore, owing to the low prevalence of cervical cancer in Saudi Arabia, healthcare practitioners encounter few instances of cervical cancer and so lack awareness about the HPV vaccination and other preventive measures [8]. This demonstrates the critical nature of continuing medical education in assisting healthcare professionals in remaining current on significant illnesses and in keeping ahead of recent innovations in healthcare.

When no systematic screening programs are in place, cervical cancer screening is generally "opportunistic", meaning that women visiting clinics for various problems are referred for cervical cancer screening by healthcare staff. This is mostly done by gynecological department employees; but, if healthcare professionals from other disciplines begin sending eligible patients as well, the number of individuals having cervical cancer screening will significantly grow [9,10].

Because the majority of women in our sample were young and

**Table 3:** Practice of the participants regarding HPV vaccinations.

S. no	Questions	Agree	Don't agree	I don't know	Strongly agree	Strongly disagree
1	Do you agree to give information to adolescents about HPV infection and its health consequences?	127(36.8%)	16(4.6%)	28(8.1%)	171(49.6%)	3(0.9%)
2	Do you agree to give information to adolescents about HPV prevention?	135(39.1%)	12(3.5%)	29(8.4%)	169(49%)	0
3	Do you agree to educate the community about prevention methods, including vaccination, as part of the reproductive health education program?	128(37.1%)	6(1.7%)	24(7.0%)	186(53.9%)	1(0.3%)
4	If the vaccination was recommended, would you agree to take it?	124(35.9%)	109(31.6%)	0	97(28.1%)	15(4.3%)

married, they were almost certainly sexually active. Although several sexual partners are a risk factor for cervical cancer, we omitted that personal question from the questionnaire because we believed it would be insulting to the Saudi culture. It is strongly advised that women over the age of 21 have a Pap smear performed [11]. Also, HPV vaccine can be taken by women until the age of 26 years [12]. Gardasil (quadrivalent vaccine effective against HPV types 6, 11, 16, and 18) and Cervix (bivalent vaccine effective against HPV types 16 and 18) are the two vaccines approved by the US FDA in 2006 and 2009, respectively [13]. These are commonly used in developed nations, and their usage in poorer countries should be promoted. These vaccinations were licensed in 2010 in Saudi Arabia for girls aged 11 to 26 years [14]. Due to the low incidence and increased expense to the health system, HPV vaccination could not be included in Saudi Arabia's national immunization programs. As a result, it is now available to a small group of persons, including women who have been verified to be at risk of HPV infection or who voluntarily choose to get vaccinated [15].

These immunizations are accessible in specific hospitals across Saudi Arabia. KFMC is one of these hospitals, and young female staff members can take use of this resource to protect themselves against HPV infection. According to the findings of our survey, the majority of our personnel is unaware that this vaccination is accessible at KFMC. This underscores the critical need of developing measures to educate personnel not just about the advantages and necessity of HPV vaccination, but also about its availability at the KFMC site. These immunizations are accessible in specific hospitals across Saudi Arabia. KFMC is one of these hospitals, and young female staff members can take use of this resource to protect themselves against HPV infection. According to the findings of our survey, the majority of our personnel is unaware that this vaccination is accessible at KFMC. This underscores the critical need of developing measures to educate personnel not just about the advantages and necessity of HPV vaccination, but also about its availability at the KFMC site.

In Riyadh, Saudi Arabia, research was done to see if an educational program had any influence on female healthcare students' understanding of cervical cancer screening and prevention. The findings were encouraging, with all scores increasing considerably after the instructional intervention. This research sheds more light on the need and significance of instructional activities, which may take the form of lectures accompanied by multimedia aids.

## Conclusion

To summarize, in order to lessen the burden of cervical cancer, concerted government effort is required to improve the efficiency

of the health system's delivery. Appropriate funding for volunteer groups/non-governmental organizations working in the health sector to raise awareness about cervical cancer among healthcare practitioners and the general public might contribute to further reduce the disease's incidence. Public health education is urgently required on the safety and effectiveness of HPV vaccination.

## References

- Ferlay J, Soerjomataram I, Dikshit R, Eser S, Mathers C, Rebelo M, et al. Cancer incidence and mortality worldwide: sources, methods and major patterns in GLOBOCAN 2012. *Int J Cancer*. 2015; 136: E359-E386.
- Makoha FW, Raheem MA. Gynecological cancer incidence in a hospital population in Saudi Arabia: the effect of foreign immigration over two decades. *J Obstet Gynaecol Res*. 2008; 34: 538-542.
- Denny L, Herrero R, Levin C, Kim JJ. Cervical Cancer. In: *Cancer: Disease Control Priorities, Third Edition (Volume 3)* edn. Edited by Gelband H, Jha P, Sankaranarayanan R, Horton S. Washington (DC): World Bank. 2015.
- Al-Mandeel HM, Sagr E, Sait K, Latifah HM, Al-Obaid A, Al-Badawi IA, et al. Clinical practice guidelines on the screening and treatment of precancerous lesions for cervical cancer prevention in Saudi Arabia. *Ann Saudi Med*. 2016; 36: 313-320.
- Moyer VA. Screening for cervical cancer: U.S preventive services task force recommendation statement. *Ann Intern Med*. 2012; 156: 880-891.
- Human papillomavirus (HPV) and cervical cancer. 2020.
- Al-Darwish AA, Al-Naim AF, Al-Mulhim KS, Al-Otaibi NK, Morsi MS, Aleem AM. Knowledge about cervical cancer early warning signs and symptoms, risk factors and vaccination among students at a medical school in Al-Ahsa, Kingdom of Saudi Arabia. *Asian Pacific Journal of Cancer Prevention*. 2014; 15: 2529-2532.
- Jradi H, Bawazir A. Knowledge, attitudes, and practices among Saudi women regarding cervical cancer, human papillomavirus (HPV) and corresponding vaccine. *Vaccine*. 2019; 37: 530-537.
- Al Khudairi H, Abu-Zaid A, Alomar O, Salem H. Public awareness and knowledge of pap smear as a screening test for cervical cancer among Saudi population in Riyadh City. *Cureus*. 2017; 9.
- Sait KH. Attitudes, knowledge, and practices in relation to cervical cancer and its screening among women in Saudi Arabia. *Saudi Med J*. 2009; 30: 1208.
- Centers for Disease Control and Prevention. Morbidity and mortality weekly report. Vancomycin-Resistant *Staphylococcus aureus*-Pennsylvania. 2002; 51: 902.
- US Food and Drug Administration. Drugs@ FDA. 2006.
- US Food and Drug Administration. Drugs@ FDA. 2006.
- Hussain AN, Alkhenizan A, McWalter P, Qazi N, Alshmassi A, Farooqi S, et al. Attitudes and perceptions towards HPV vaccination among young women in Saudi Arabia. *Journal of family & community medicine*. 2016; 23: 145.
- Alsbeih G. HPV infection in cervical and other cancers in Saudi Arabia: implication for prevention and vaccination. *Frontiers in oncology*. 2014; 4: 65.