



## RESEARCH ARTICLE - MEDICAL TECHNIQUES

## Practices Regarding Human Papillomavirus and Cervical Cancer in A Sample of Paramedical Staff in Al- Najaf Governorate, Iraq

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Article Info.	Abstract
<p><i>Article history:</i></p> <p>Received 01 July 2022</p> <p>Accepted 22 July 2022</p> <p>Publishing 15 November 2022</p>	<p>The papillomaviridae viral family includes HPV. When it comes to female sexually transmitted diseases, the genital tract is the primary site of infection for genital type HPVs, which are further divided into high- and low-risk subgroups depending on the likelihood that they will cause cancer of the genital tract. High-risk HPV strains 16 and 18 cause cervical cancer. Sexual contact or skin-to-skin contact is the primary mode of transmission of HPV.</p> <p>To assess the degree of Practice among a sample of paramedical workers concerning the Human Papillomavirus and Cervical Cancer.</p> <p>Five hospitals and 25 primary health care centers in the Al-Najaf governorate were studied in this cross-sectional observational descriptive cross-sectional research. Starting on December 19th, 2021 and concluding on April 18th, 2022, data was gathered for four months. According to the results of the present research, which included (five hundred) Paramedical employees aged 20-59 years, the age group with the largest proportion (66.4%) was that of 20-29 years. Whereas, in terms of gender, the largest proportion of women (64.6 percent). Almost all paramedics work in urban areas. In addition, almost half of the participants came from medical institutions, accounting for 51.6 percent of the total, while just 2.4 percent were graduates of secondary schools. Only 2.4% of the paramedical staff had any kind of education or training on HPV or cervical cancer. Excellent practice evaluations for the Human Papillomavirus and cervical cancer were much higher among paramedical providers (79 percent). Most of the paramedics who were evaluated for their practices addressing cervical cancer and the human papillomavirus (HPV) received good grades. Health authorities, social groupings, and non-governmental organizations should work together to communicate information about the human papillomavirus and cervical cancer to the general population. In order to educate and sensitize medical professionals about HPV screening technologies and the most current screening and treatment guidelines, conduct educational initiatives.</p>

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### 1. Introduction

The human papillomavirus, often known as HPV, is a DNA virus that is very small, does not have an envelope, and has two strands of DNA. It may infect the epithelial cells that line the skin, mouth, and anogenital mucosa. This virus belongs to the Papillomaviridae family of viruses [1]. One of the most prevalent ways for men and women to get sexually transmitted illnesses is via an infection with the human papillomavirus (HPV) (STIs). There's a strong correlation between certain viruses and human cancer. A virus known as human papillomavirus (HPV) has been linked to an increased risk of cancer [2]. In the late 1990s and early 2000s, prospective epidemiologic studies revealed a temporal link between HPV exposure and the development of CIN and cervical cancer. HR-HPV was recognized as a necessary but not sufficient cause of virtually all cervical malignancies based on these findings and strong biological plausibility obtained from the basic sciences [3]. An environment that discourages frequent cytology screenings and restricts access to treatment as well as societal norms and attitudes about cervical cancer all contribute to cervical carcinogenesis, as can human papillomavirus (HPV) infection duration and the host's immunological condition. There are also other risk factors for gynaecological diseases, such as having several partners and having many children, as well as having a young age of first pregnancy or first sexual contact [4]. The advancement of the cancer stage is very important since it enables the healthcare professional to choose the most appropriate method of treatment. The four-step technique that is now the most common method for treating cervical cancer is known as radical hysterectomy. Pre-cancer cells indicate stage 0. Cancer cells in the uterus and nearby lymph nodes emerge from deeper tissues from the surface during the first stage of the disease, which is called stage 1. In the second stage, cancer has already spread to the cervix and the cervix, but it has not yet descended into the vaginal and pelvic walls. The lower region of the vagina develops cancer during the third and final stage of the illness. At this stage, cancer has already invaded and spread to the rectum, also known as the bladder bowl. It might then spread to other bodies farther away [5]. The transformation zone of the cervix is where cervical malignancies begin. As the illness progresses slowly from dysplasia to severe carcinoma, precancerous alterations may be detected and treated earlier [6].

Nomenclature		
HPV	Human Papillomavirus	MOH
HR	High-Risk	STIs
CIN	Cervical intraepithelial neoplasia	Ministry of Health Sexually Transmitted Infections

Progression of cervical cancer is characterized by four stages: HPV transmission; viral persistence; precancerous cell clone mutation into cancerous cells; and invasion [6]. This disease is becoming more common, thus preventing and treating it are top priorities. The paramedical workforce is dominated by paramedical personnel, who perform the most critical functions and account for the majority of total employment. They are well-liked by the general public and well-established in the poorest and most rural areas of the country [7].

### 1.1. Study aims

To determine the level of Practices regarding Human Papillomavirus and Cervical Cancer among a sample of paramedical staff.

## 2. Methods and Subjects of Study

### 2.1. Study design

This is observational descriptive cross-sectional research that was carried out in the Al-Najaf governorate at a total of twenty-five primary health care centers as well as five hospitals.

### 2.2. Duration of the study

The collection of data was carried out over the course of a period of four months, beginning on the 19th of December 2021 and concluding on the 18th of April 2022.

### 2.3. Setting of the study

In Al-Najaf governorate is a city in central Iraq about 160 km (100 mi) south of Baghdad. Its estimated population in 2017 was 1,500,522 people. The area of Al-Najaf is about 28,824 square kilometres [8].

### 2.4. Criteria for selection

Paramedical employees from (5) hospitals and (25) basic health care centers in Al-Najaf governorate were chosen at random for this study.

### 2.5. Exclusionary criteria

Physicians, dentists, and physicians who work in pharmacies, staff members who work in administration, paramedical staff members who decline to take part, and paramedical staff members who work overnight.

### 2.6. Technique for gathering data

The study contains 500 samples of Paramedical staff collected randomly from 5 hospitals and 25 primary health care centres (Vaccination unit, IMNCH unit, Nutrition unit, health promotion unit, pregnant women care unit) from the six health sectors of Al-Najaf governorate /Iraq distributed.

### 2.7. Statistical analysis

SPSS-28, the most easily available statistical program, was used to examine the data (Statistical Packages for Social Sciences- version 28). To make it easier to understand, the data were split down into categories including "frequency," "percentage," "mean," "standard deviation," and "width" (minimum-maximum values). The significance of the differences between the various percentages (qualitative data) was evaluated with the use of the Pearson Chi-square test (Yate's correction or Fisher Exact test, depending on the context), which was followed by using the appropriate statistical procedures. When the P-value was less than 0.05 or equivalent to that value, statistical significance was determined to exist.

## 3. Results

Participants in the research come from the Al-Najaf governorate's (5) hospitals and (25) basic health care centers. The total number of participants was five hundred. The socio-demographic characteristics of the paramedical personnel are detailed in Table 1 (In terms of the age range ranging from 20 to 59 years old, the age group spanning from 20 to 29 years old had the highest percentage of individuals participating (66.4%), while the age range spanning from 50 to 59 years old had the lowest percentage of people participating (4.2 percent). Regarding gender, the percentage was highest among females (64.6%), while it was at its lowest among males (35.4 percent). And although the bulk of the paramedical workers (65.4% of them) were married, 32.6% of them were single, and the very lowest number imaginable (2.0%) were either

divorced or widowed. The vast majority of paramedical employees (90.8 percent) resided in metropolitan areas, while just 9.2 percent called rural areas home. In addition, the majority of participants came from medical institutions, which accounted for 51.6% of the total number. On the other hand, the proportion of participants from secondary schools accounted for just 2.4% of the total. In relation to the level of professional education, the highest percentage was made up of medical assistants (27.4 percent), followed by graduates of medical and technical colleges (25.2 percent), laboratory assistants (19.8 percent), nursing college graduates (10 percent), pharmacist assistants and nurses (5 percent), and radiographers and other professionals (3.8 percent) (Science collage, Anesthesia collage). The participants in the survey had an average level of experience ranging from one to four years (51.6 percent), with those aged fifteen to nineteen years having the least amount of experience (4.6 percent). In terms of the kind of health facility, primary health care centers accounted for the largest proportion (60.2%), while hospitals accounted for the lowest number (39.8%). Last but not least, training courses or workshops on topic accounted for 97.6 percent of those that were not entered, while just 2.4 percent of those that were entered were training courses or workshops on subject.

Table 1 Sample distribution of paramedics based on their socio-economic status

Socio-demographic characteristics.		No	%
Age (years)	20---29	332	66.4
	30---39	97	19.4
	40---49	50	10.0
	50---59 years	21	4.2
	Mean±SD (Range)	29.9±8.3 (20-59)	
Gender	Male	177	35.4
	Female	323	64.6
Marital status	Unmarried (single)	163	32.6
	Married	327	65.4
	Divorced/Widowed	10	2.0
Residence	Rural	46	9.2
	Urban	454	90.8
Period of employment	1---4	258	51.6
	5---9	101	20.2
	10---14	53	10.6
	15---19	23	4.6
	=>20years	65	13.0
	Mean±SD (Range)		7.7±7.8 (1-33)
Educational level	Secondary school	12	2.4
	Diploma	258	51.6
	Bachelor & higher	230	46.0
Professional level	Med Tech College Graduate	126	25.2
	Medical assistant	137	27.4
	Nursing College Graduate	50	10.0
	Pharmacist Assistant	25	5.0
	Laboratory Assistant	99	19.8
	Nurse	25	5.0
	Radiographer	19	3.8
	Others	19	3.8
Health institution working in	Hospital	199	39.8
	PHC center	301	60.2
Have you entered training courses or workshops	No	488	97.6
	Yes	12	2.4
How many times	1	12	
How many days	3	4	
	5	8	

The overall all score for knowledge is shown in Fig. 1 in which, approximately (86.2%) of studied sample were with fair (acceptable) knowledge of HPV & Cervical cancer general Information. While a small percentage (6.4%) were with poor knowledge, while the rest (35.3%) have good knowledge about HPV & Cervical cancer general Information.

Table 2 Revealed the practices of studied sample towards HPV & Cervical, approximately 96.6% of paramedical staff (Follow preventive measures to avoid HPV infections), 83.8% of paramedical staff (Allow children to be vaccinated against HPV), while 17.8% of paramedical staff (Screen or refer a patient for a pap smear), while 95.2% of paramedical staff (See a doctor if having signs and symptoms of HPV infections). According to the World Health Organization and Ministry of Health, 90.4 percent of paramedical staff (Take HPV vaccine if available) and 95.4 percent of paramedical staff (Follow all guidelines to prevent transmission of HPV infection according to WHO and MOH) and 96.0 percent of paramedical staff (Take HPV vaccine if available) (Take HPV vaccine if available).

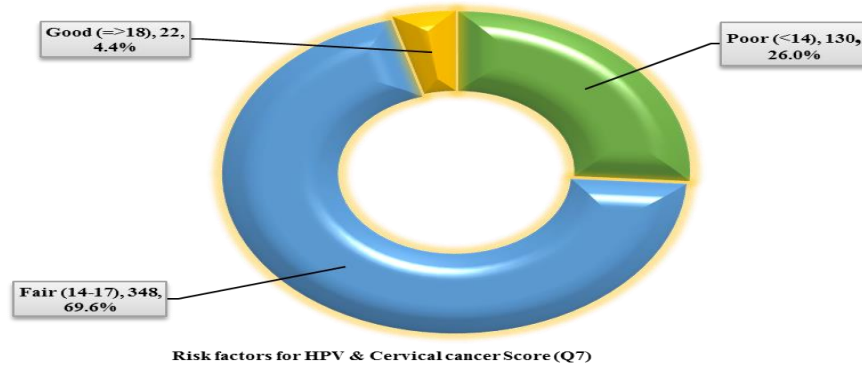


Fig 1. knowledge score towards HPV & Cervical cancer general Information

Table 2 Revealed the practices of the studied sample towards HPV & Cervical

Part IV: Practices	Yes		No	
	No.	%	No.	%
Follow preventive measures to avoid HPV infections	483	96.6	17	3.4
Allow children to be vaccinated against HPV	419	83.8	81	16.2
Screen or refer patient for pap smear	89	17.8	411	82.2
See doctor if having signs and symptoms of HPV infections	476	95.2	24	4.8
Take HPV vaccine if available	452	90.4	48	9.6
Follow all the guidelines to prevent transmission of HPV infection according to WHO and MoH	477	95.4	23	4.6
Educate patients on vaccination and other preventive measures to prevent the spread of HPV infection	480	96	20	4

The Practice score for HPV & Cervical cancer is shown in Fig. 2; the highest percentage of the studied sample (79%) had good practise scores regarding HPV & Cervical, while only (5%) of them had bad practice score for it.

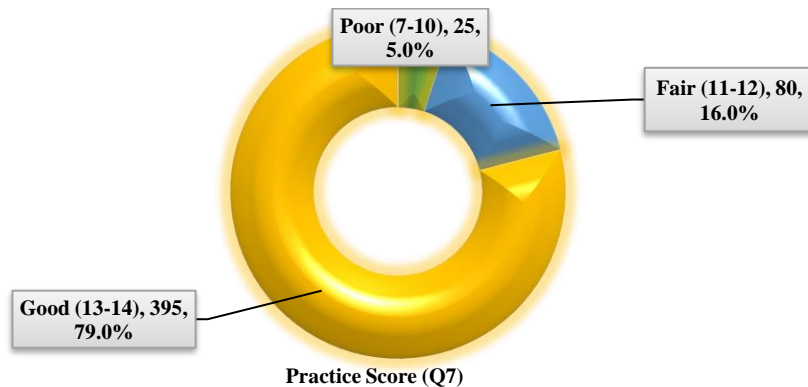


Fig 2. Showed the Practice Score for HPV & Cervical cancer

The association between studied sample demographic characteristics and practice score towards human papillomavirus and cervical cancer, represented in Table 4. no significant association found ( $P = 0.092, 0.075, 0.353, 0.057, 0.087, 0.116, 0.518$ ) respectively, except in the gender, marital status and the main source of information the association showed statistically significant ( $p = 0.011, 0.006, 0.043$ ).

Table 3 The correlation between the demographic characteristics of the studied samples and the practice score about the human papillomavirus and cervical cancer

Row %	Practice Score (Q7)								P-value
	Poor (7-10)		Fair (11-12)		Good (13-14)				
	No.	%	No.	%	No.	%			
Age (years)	20---29	12	3.6	49	14.8	271	81.6	0.092	
	30---39	5	5.2	18	18.6	74	76.3		
	40---49	6	12.0	11	22.0	33	66.0		
	50---59 years	2	9.5	2	9.5	17	81.0		

Gender	Male	15	8.5	33	18.6	129	72.9	0.011*
	Female	10	3.1	47	14.6	266	82.4	
Marital status	Unmarried (single)	3	1.8	38	23.3	122	74.8	0.006*
	Married	22	6.7	41	12.5	264	80.7	
	Divorced/Widowed	-	-	1	10.0	9	90.0	
Residence	Urban	5	10.9	4	8.7	37	80.4	0.075
	Rural	20	4.4	76	16.7	358	78.9	
Educational level	Secondary school	1	8.3	3	25.0	8	66.7	0.353
	Diploma	17	6.6	41	15.9	200	77.5	
	Bachelor & higher	7	3.0	36	15.7	187	81.3	
Professional Level	Medical Technology College Graduate	5	4.0	24	19.0	97	77.0	0.057
	Medical assistant	8	5.8	22	16.1	107	78.1	
	Nursing College Graduate	2	4.0	9	18.0	39	78.0	
	Pharmacist Assistant	4	16.0	7	28.0	14	56.0	
	Laboratory Assistant	5	5.1	9	9.1	85	85.9	
	Nurse	-	-	7	28.0	18	72.0	
	Radiographer	-	-	1	5.3	18	94.7	
Period of employment	Others	1	5.3	1	5.3	17	89.5	0.087
	1---4	9	3.5	43	16.7	206	79.8	
	5---9	5	5.0	10	9.9	86	85.1	
	10---14	3	5.7	9	17.0	41	77.4	
	15---19	2	8.7	8	34.8	13	56.5	
Health institution working in	=>20years	6	9.2	10	15.4	49	75.4	0.116
	Hospital	5	2.5	33	16.6	161	80.9	
	PHC center	20	6.6	47	15.6	234	77.7	
Training courses/workshops	No	25	5.1	79	16.2	384	78.7	0.518
	Yes	-	-	1	8.3	11	91.7	
The main source of information	Family	1	10.0	2	20.0	7	70.0	0.043*
	Friends	4	13.3	9	30.0	17	56.7	
	During study	7	3.2	32	14.4	183	82.4	
	TV	-	-	-	-	-	-	
	Internet	4	2.9	22	15.7	114	81.4	
	HCW	7	9.2	10	13.2	59	77.6	

#### 4. Discussion

It was essential to explore the knowledge, attitude and practices of para-medical staff toward Human papillomavirus and cervical cancer. So this study finds results to evaluate general awareness of paramedical staff regarding Human papillomavirus and cervical cancer. Paramedical staffs are the key persons in delivering health-care services, as these paramedical staffs are the first to come in contact with the patient, so it is essential that the paramedical staffs be more aware about new and re-emerging threats to health to update educational program. The study includes numbers of socio-demographic information about study participant found in table (1), the highest percentage (66.4%) of study sample were from age group (20-29 years) and the lowest percentage (4.2%) of study sample were from age group (50-59). In comparison with other studies in other countries. This result was similar to what was reported by [9] in Pakistan who found the highest percentage (66.4%) of the participants were from age group (20-30). But This result was different from what had been reported by [10] in south India who found that the highest percentage (34.33%) of study participant was from age group (40-55 years) and the lowest percentage (15.33%) of study participant was from age group (20-29 years). This difference may be due to the fact of the age group that is less than 30 years may be less familiar and less interested in these diseases than older ages. The proportion of participant of health care providers was females (64.6%) higher than males (35.4%), this result is consistent with what had been reported in India by [11], (58.2%) were female and also (71.6%) of the participants was females done by [12] in India. This may be due to that the female's participant were having more interesting to participate in the study more than male. The study was observed (32.6%) single para-medical staff, the percentage (65.4%) were married and (2% widow and divorced), in comparison with other reported studies this result was similar with other reported study done by [13] in Central Ethiopia who found the higher percentage (61.4%) was married. But disagree with the study result done in Iran by [14] and in Pakistan by [15] which shows that most of study participant were single (81.5%), (68%) respectively. This difference may be due to that the study was conducted in Pakistan was on students who were younger than 24 years old, so the majority of the sample was unmarried, while the current study was on health workers and their ages ranged between 22 to 63 years, so the higher percentage of them were married. In the present study, according to residence of para-medical staff, the majority (90.8%) of the participant was from urban area and (9.2%) was from rural area. This result was similar to what had been reports in study done in Baghdad by [16], who found the percentage (74.67%) was from urban and (25.33%) was from rural. But disagree with the study done in India by [10], which recorded (36%) was urban and (64%) was rural. This deference may be due to that the Iraqi people from rural part of Iraq did not complete their study so the majority of participant were urban participant. Regarding educational qualification in the current study, the highest percentage (51.6%) was from diploma. when compared the current study with similar studies in other countries, this result was similar with other reported study done by [17] in Ghana who found the higher percentage (48.1%) of study sample were from diploma degree. In the

current study, the highest proportion of the sample (27.4%) was from medical assistant and this result was in disagreement with what was reported in Baghdad by [16], (34.21%) Were medical technologist (College of health & medical technologies), this difference may be due to those with diploma degree and medical assistant have more information and therefore have a desire to participate. It was observed that with years of experience in current study, the highest percentage (51.6%) from participant was for those who had equal or less than 4 years' duration of work. Compared with other countries, this result is similar to what was reported in India by [18], who found that those with years of work of less than 6 years constitute the highest percentage in the study sample. This may be due to that the participant in these studies (who have shorter years of experiences) were having more interesting to participate. Data demonstrated that (60.2%) of the studied sample were from primary health care centers and (39.8%) from hospitals. This result disagrees with the result of the study that was done in Delhi-NCR, INDIA by [19], which carried out in Public and private health care centers. The reason behind the inclusion of both primary health care centers and hospitals in the current study is in order to encompasses as many as possible number of the paramedical staff.

The practices of paramedical staff toward HPV & Cervical Cancer were more than (83.8%) for all items except (17.8%) for (Screen or refer patient for pap smear). When compare with other studies, This result is consistent with the finding of other reported study done by [20] in India, who found that the percentage (36.6%) of participant answered correctly to similar item. The percentage (83.8%) of para-medial staff answered correctly to "( Allow children to be vaccinated against HPV)", this result is consistent with other reported study done by [21] in King Abdul-Aziz Medical City (KAMC), Central Region, Saudi Arabia who found that the percentage (82.08%) of the study participant agrees to the same point. The majority percentage (90.4%) of para-medial staff agree that "(Take HPV vaccine if available HPV)", this result was in line with the result of other reported study done by [12] in India who found that the percentage (51.46%) of the study participant agree to the same point. The high percentage of studied sample (79.0%) had good practice regarding HPV & Cervical Cancer, (16.0%) of them had fair practice and only (5.0%) had poor practice regarding them. This result is inconsistent with what had been reported by the previous study conducted by [22] in Indonesia who found that the Practice related to the understanding of Human Papillomavirus, Cervical Cancer, and vaccination was still low (score of <60). The deference in result may be due to that Southeast Asian countries were weak countries until the beginning of the nineties of the last century, so there is still a weakness in the competencies of the educational and health fields in those countries. Regarding association, no significant association found between studied sample demographic characteristics and practice score towards human papillomavirus and cervical cancer except in the gender, marital status and the main source of information the association showed statistically significant ( $p=0.011, 0.006, 0.043$ ), there is no previous study on this element for comparison.

## 5. Conclusion

Most of the paramedical personnel who were assessed obtained satisfactory scores for their practices regarding cervical cancer and the human papillomavirus.

## 6. Recommendation

Health authorities, social groupings, and non-governmental organizations should work together to communicate information about the human papillomavirus and cervical cancer to the general population. In order to educate and sensitize medical professionals about HPV screening technologies and the most current screening and treatment guidelines, conduct educational initiatives.

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