

Knowledge, Attitudes, and Practice Regarding Cervical Cancer among Sample of Women in Baghdad

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Abstract

Objectives: To determine the knowledge, attitudes, and practices related to cervical cancer, its underlying causes, and preventive measures among women attending primary health care centers in Baghdad. **Subjects and Methods:** A descriptive cross-sectional study with analytic elements was carried out in 20 primary health care centers in Baghdad selected randomly during the period extended from January to May 2023. Four hundred ever-married women were interviewed by using a questionnaire form that include questions related to sociodemographic characteristics, cervical cancer causes, risk factors, and prevention. **Results:** More than half (53.3%) of the participants had a good knowledge score. Human papillomavirus (HPV) as an etiological agent for cervical cancer was mentioned by 6.5%, no one heard about HPV vaccine, 5.3% heard about cervical cancer screening, 3.5% ever had a Pap smear offered by their doctors who were their only source of information about Pap smear test. The risk of sexually transmitted infections (STI), smoking, hormonal contraception, menopause, early marriage, and male condoms were stated by: (96.5%), (94%), (93.3%), (64.5%), (53.8%), and (25.2%) of the participants, respectively. **Conclusions:** Knowledge about HPV, HPV vaccine, and cervical cancer screening among women in Baghdad was poor, while their knowledge about most of the risk factors for cervical cancer was good. Women in Baghdad have a positive attitude toward cervical cancer screening and the HPV vaccine, which was significantly associated with women's knowledge.

Keywords: Attitudes, Baghdad, cervical cancer, knowledge, women

INTRODUCTION

Carcinoma of the cervix is a major public health problem throughout the world and it is the leading cause of cancer-related deaths among women in developing countries. It is the fourth most common cancer in women^[1] globally; there were 604,127 new cases, and 341,831 new deaths registered by the year 2020. Ninety percent of these incidents take place in nations with low and moderate incomes.^[2] Cervical cancer is a devastating malignancy of the cervix, with squamous cell carcinomas reported to be more prevalent than adenocarcinomas.^[3]

It has long been recognized that human papillomavirus (HPV) infection increases the risk of cervical cancer; among women who have cervical carcinomas, the global prevalence of HPV is 99.7%. Anogenital and nongenital warts can be caused by a variety of HPV genotypes; however, carcinogenesis is primarily associated with high-risk or carcinogenic genotypes. Of all CC cases worldwide, HPV types 16 and 18 account for

around 70% of cases; types 31, 33, 35, 45, 52, and 58 account for about 20% of cases.^[4]

On November 17, 2020, the World Health Organization (WHO) unveiled a global strategy aimed at expediting the elimination of cervical cancer as a public health issue. This initiative will pave the way for cervical cancer prevention and control in the future, with 194 countries pledging to eradicate the disease for the first time.^[5]

The HPV vaccine and screening are two extremely effective primary and secondary preventive methods that have made

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Submitted: 12-Dec-2024 **Revised:** 22-Dec-2024
Accepted: 24-Dec-2024 **Published:** 31-Mar-2025

Access this article online

Quick Response Code:



Website:
<https://journals.lww.com/ircm>

DOI:
10.4103/IRJCM.IRJCM_48_24

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How to cite this article: Hussein IF, Kareem BM, Saod MK. Knowledge, attitudes, and practice regarding cervical cancer among sample of women in Baghdad. IRAQI J COMMUNITY MED 2025;38:137-41.

cervical cancer almost entirely preventable. These policies, in the meantime, have not been implemented equally between or within nations.^[6]

Cervarix, Gardasil 9, and Gardasil are the three HPV vaccines available at this time to prevent HPV infection. These vaccinations guard against HPV genotypes 16 and 18, which together account for almost 70% of cervical cancer cases. Men and women between the ages of 9 and 26 are presently advised to get vaccinated by the Centres for Disease Control.^[7]

Assuming a reasonable uptake, HPV vaccination programs can lower the long-term future burden of cervical cancer,^[8] and as a best buy (i.e. an effective and affordable intervention), the WHO currently advises girls between the ages of 9 and 13 to receive a 2-dose immunization.^[2]

The triple-intervention approach consists of: 1–immunizing 90% of girls by the age of 15; 2–screening 70% of women twice between the ages of 35 and 45; and 3–treating 90% or more of all precancerous lesions found during screening, according to a modeling exercise, over the next century, putting this method into practice will prevent over 62 million fatalities and over 74 million illnesses.^[9] Through screening, early diagnosis and detection can improve treatment and survival rates.^[10]

In countries with very high human development index (HDIs), this objective is expected to be accomplished by 2055–2059; in countries with low HDIs, it may take until the end of the 21st century.^[11]

Like in the majority of Islamic nations, cervical cancer is quite uncommon in Iraq; it makes up only 0.73% of all female cancer cases and is not among the top 10 malignancies in Iraq. Out of 20290 female cancer cases, 263 new cases had been reported by 2020; the crude incidence rate per 100,000 *P* was 1.29.^[12]

In Iraq, the cervical cancer screening program is not well established yet, there is only a pilot project started at 2012 in 4 out of 14 governorates, through which the risk group and ten women a day, selected randomly for 3 days a week underwent the test in a selected PHCCs, otherwise, the pap smear used as a diagnostic test for the symptomatic women, the pilot revealed low prevalence of ca cervix, the program collapsed, then a new idea of initiation of the national cervical cancer screening protocol since 2017 but not established at this time because it has no priority, recently cervical cancer screening program has a great attention and a new program will initiate recently, so it is important to explore the knowledge and attitudes of women in Baghdad in relation to cervical cancer and its screening during that preliminary phase of the program, by knowing that there is no previous study dealing with this issue in Iraq.

SUBJECTS AND METHODS

Baghdad was divided by Tigris into Al-Karkh and Al-Rusafa. A descriptive cross-sectional study was conducted in 20 primary healthcare centers in Baghdad. The PHCCs were selected through a simple random sampling technique, selected

10 primary health care centers in Al Karkh Health Directorate, and another 10 from Al Rusafa. The data collection was carried out during the period extended from January to May 2023. A convenient sample of 400 women aged 15–60 years, ever married, attending the selected PHCCs for different reasons other than obstetrical or gynecological problems. A questionnaire was designed and used for data collection in this study, it consists of 21 close-ended questions and is divided into four parts:

1. Part I: Consists of four questions regarding sociodemographic information of the attendants: age, parity, occupation (housewife or employed whether governmental or self-employment), and education (illiterate, primary, intermediate, secondary schooling, and higher education)
2. Part II: Consists of nine questions that addressing the participants' knowledge in relation to cervical cancer screening and risk factors
3. Part III: Consists of two questions that addressing the participants' attitudes toward cervical cancer screening and vaccine
4. Part IV: Consists of three questions that addressing the participants' previous practice of cervical cancer screening and whether they ask their doctors to do it for them or their doctors offer it to them.

Furthermore, there were additional three questions addressing participants' awareness about the virus that causes cervical cancer and its vaccine, also asking them if they had ever heard about cervical cancer screening and their source of information.

The questionnaire was filled by direct interviews with the attendants while they were waiting for maternity consultation, dental clinics at the selected PHCCs, or when they were attending as patients for other than gynecological or obstetrical problems or bringing their sick children, or other family members.

The scoring method was used to qualify the level of knowledge, by giving two scores to the correct answer and one score for the incorrect answer (to avoid small values in the calculation of the score system). As having nine questions addressing participants' knowledge, the scores are then categorized into poor, acceptable, and good score:

Total score of ≤ 13 considered poor score.

Total score of 14–16 considered acceptable score.

Total score of ≥ 17 considered good score.

Statistical analysis

The data were analyzed by computer, using SPSS Inc., (Chicago, IL, USA), and presented as a frequency, percent, mean, range, and standard deviation, using the Chi-square test for association which was considered significant at $P \leq 0.05$.

Ethics approval

This study was approved by the ethical committee of Al Karkh Health Directorate and Al Rusafa Health Directorate, Baghdad, Iraq on 3rd January 2023.

1. No incentives were offered to the participants in return for their participation.
2. Verbal consent was obtained from the participants before filling the questionnaire.
3. All the participants' information was kept private by keeping it in a secured folder in a password-protected computer owned by the study investigators. No information was shared with any other individuals or entities.

RESULTS

During the study period, 400 women were interviewed; their ages ranged (16–59) years (mean 34.3 ± 10.81).

Regarding participants' knowledge about the cervical cancer screening test, there were more than three-quarters of the studied sample stated that the test can detect the disease early, more than half of them stated that it is not useless after menopause and only one-third of them stated that there is a need for the screening in asymptomatic women.

Regarding participants' knowledge about cervical cancer screening and cervical cancer risk factors is shown in Table 1.

Participants' knowledge score was ranged from (10 to 18), mean knowledge score were 15.5 ± 1.3 , there were 213 (53.3%) participants their knowledge score was good, 161 (40.3%) participants their knowledge score was acceptable and 26 (6.5%) participants their knowledge score was poor.

There is no significant association between participants' knowledge score and sociodemographic characteristics, as shown in Table 2.

There is a significant association between participants' knowledge score and their attitude toward HPV vaccine, as shown in Table 3.

DISCUSSION

Women in the third world are at risk of serious health problems in every stage of life. These include HIV, high maternal mortality rates, and cancer of the cervix later in life. Cervical cancer is a preventable disease, and its prevention is mainly done by the detection of the premalignant lesion by cervical screening.

The overall knowledge score of the participants was good; more than 50% of them had a good knowledge score, while Elshami *et al.*'s study in Palestine 2021^[13] reported that only 25% of the participants had a good knowledge score that is may be due to the difference between the two populations.

The study showed that there was no significant association between participants' knowledge and their sociodemographic characteristics, such as age, occupation, parity, and educational level, that agrees with Elshami *et al.*'s study in Palestine 2021^[13] they noticed that no significant association between participants' knowledge and their sociodemographic characteristics, while Muthuramalingam and Muraleedharan's study in India 2023^[14] show that cervical cancer screening is substantially higher among women with education.

In the other hand, the study showed a significant association between participants' knowledge and their attitude toward HPV vaccine, and no association with their practice while Mukosha *et al.*'s study in 2022^[15] showed a significant association between participants' knowledge and their attitude and practice toward cervical cancer screening, that is may be due to embarrassment or pain that they thought caused by Pap smear.

The results showed that only 31% of the participants stated that there is a need for Pap test in asymptomatic women; this result is nearly similar to that reported by Mijiti *et al.* study in China in 2023,^[16] which showed that about 68% of the participants said that Pap tests are unnecessary for women who are asymptomatic. The possible explanation is the wrong attitude and practice, which is disseminated in our society; of using Pap test as a diagnostic test of cancerous problems.

In spite of poor participants' knowledge about the HPV vaccine, 96.75% of them stated that they are willing to have their daughters receive the HPV vaccine because it would prevent illness which reflects a high degree of acceptance and a positive outlook toward HPV vaccination. That is what was also reported by Kristina *et al.*'s study in Yogyakarta 2020,^[17] which shows that although parental approval and belief in the HPV vaccine was high, there was still a lack of awareness and information about the HPV vaccine and cervical cancer.

Table 1: Distribution of the studied sample according to knowledge about cervical cancer screening and cervical cancer risk factors

Knowledge aspects	Correct answer, n (%)	Incorrect answer, n (%)
Cervical cancer screening can detect the disease early	338 (84.5)	62 (15.5)
Screening is not useless after menopause	224 (56.0)	176 (44)
There is a need for screening in asymptomatic women	124 (31.0)	276 (69)
Early marriage is a risk factor	215 (53.8)	185 (46.2)
Menopause isn't a risk factor	142 (35.5)	258 (64.5)
Smoking is a risk factor	376 (94.0)	24 (6)
STIs are risk factor	386 (96.5)	14 (3.5)
Hormonal contraception is a risk factor	373 (93.3)	27 (6.7)
Male condom isn't a risk factor	303 (75.8)	97 (24.2)
STIs: Sexually transmitted infections		

Table 2: Association between participant's knowledge score and sociodemographic characteristics

Sociodemographic characteristics	Knowledge levels			Total, <i>n</i> (column %)	<i>P</i>
	Poor (<14), <i>n</i> (row %)	Acceptable (14–15), <i>n</i> (row %)	Good (≥16), <i>n</i> (row %)		
Age (years)					
<20	4 (10.3)	14 (35.9)	21 (53.8)	39 (9.8)	0.946
20–29	5 (4.8)	41 (39.4)	58 (55.8)	104 (26.0)	
30–39	9 (6.6)	56 (41.2)	71 (52.2)	136 (34.0)	
40–49	6 (7.4)	31 (38.3)	44 (54.3)	81 (20.3)	
≥50	2 (5)	19 (47.5)	19 (47.5)	40 (10.0)	
Educational level					
Illiterate	2 (4.8)	19 (45.2)	21 (50)	42 (10.5)	0.342
Primary	10 (10.1)	46 (46.5)	43 (43.4)	99 (24.8)	
Intermediate	5 (7)	23 (32.4)	43 (60.6)	71 (17.8)	
Secondary	4 (4.2)	38 (39.6)	54 (56.3)	96 (24.0)	
Higher	5 (5.4)	35 (38)	52 (56.5)	92 (23.0)	
Occupation					
Housewife	23 (7.4)	123 (39.7)	164 (52.9)	310 (77.5)	0.38
Employee	3 (3.3)	38 (42.2)	49 (54.4)	90 (22.5)	
Parity					
Para 0	3 (970)	12 (38.7)	16 (51.6)	31 (7.8)	0.191
Para 1	4 (5)	26 (32.5)	50 (62.5)	80 (20)	
Para 2	3 (3.4)	40 (46)	44 (50.6)	87 (21.8)	
Para 3	9 (9.6)	31 (33)	54 (57.4)	94 (23.5)	
Para 4 +	7 (6.5)	52 (48.1)	49 (45.4)	108 (27)	
Grand total	26 (6.5)	161 (40.3)	213 (53.3)	400 (100)	

Table 3: Association between participant's knowledge score and their practice and attitudes

Attitude and practice aspects regarding pap smear and HPV vaccine	Knowledge score level			<i>P</i>
	Poor (<14), <i>n</i> (%)	Acceptable (14–15), <i>n</i> (%)	Good (≥16), <i>n</i> (%)	
Will you let your daughter receive HPV vaccine				
Yes	23 (5.9)	153 (39.5)	211 (54.5)	0.004*
No	3 (23.1)	8 (61.5)	2 (15.4)	
Will you do a Pap smear				
Yes	23 (6.4)	138 (38.5)	197 (55.0)	0.1
No	3 (7.1)	23 (54.8)	16 (38.1)	
Ever had pap smear				
Yes	0	6 (42.9)	8 (57.1)	0.6
No	26 (6.7)	155 (40.2)	205 (53.1)	
Doctor offer it to you				
Yes	0	6 (42.9)	8 (57.1)	0.6
No	26 (6.7)	155 (40.2)	205 (53.1)	

HPV: Human papilloma virus

The present study revealed that 35.5% of the participants disagree with menopause as a risk factor in cervical cancer and 56% of them stated that screening is not useless after menopause. These results are different from that reported by Tadesse *et al.*'s study in Ethiopia,^[18] in which only 7% of the participants stated the elderly women should be screened, this may be due to the old misinformation that cancers in general, including cervical cancer are geriatric diseases.

The result revealed that 84.5% of the participants agree with the ability of cervical cancer screening in detecting the disease early in spite of their poor knowledge about cervical cancer

screening. This figure is near to what has been reported by Almaz Tadesse *et al.*'s study in Ethiopia,^[18] as 73.2% of women agree with the ability of cervical cancer screening in the prevention of cervical cancer.

This study shows that 94% of the participants stated the risk of smoking in cervical cancer, which is much less than what has been reported by Tadesse *et al.*'s study in Ethiopia,^[18] in which only 9% of the participants stated the risk of smoking in cervical cancer. This may be due to the continuing awareness campaigns against tobacco and its products in Iraq.

The result reveals that 96.5% of the participants stated the risk of STI in cervical cancer. This result is higher than that reported by Elshami *et al.* study in Palestine 2021.^[13] They noticed that 76% of the population sample were aware of a link between cervical cancer and STI. A possible explanation is the consideration of STI as a taboo in our society.

The current study showed that 93.3% of the participants knew the risk of hormonal contraception in cervical cancer; this result is higher than that reported by Elshami *et al.*'s study in Palestine,^[13] who reported that 60% of the participants believed in the risk of hormonal contraception in cervical cancer.

CONCLUSIONS

In summary, the participants' knowledge score was generally good. The HPV vaccine and cervical cancer screening are well liked by Baghdadi women. Participants' practice related to cervical cancer screening was poor. There was no significant association between women's knowledge and their sociodemographic variables.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

- Choi S, Ismail A, Pappas-Gogos G, Boussios S. HPV and cervical cancer: A review of epidemiology and screening uptake in the UK. *Pathogens* 2023;12:298.
- Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, *et al.* Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin* 2021;71:209-49.
- Zhang S, Xu H, Zhang L, Qiao Y. Cervical cancer: Epidemiology, risk factors and screening. *Chin J Cancer Res* 2020;32:720-8.
- Lintao RC, Cando LF, Perias GA, Tantengco OA, Tabios IK, Velayo CL, *et al.* Current status of human papillomavirus infection and cervical cancer in the Philippines. *Front Med (Lausanne)* 2022;9:929062.
- Organization P| PAH. A Cervical Cancer-Free Future: First-Ever Global Commitment to Eliminate a Cancer. Available from: <https://www.paho.org/en/news/17-11-2020-cervical-cancer-free-future-first-ever-global-commitment-eliminate-cancer>. [Last accessed on 2024 Jan 07].
- PATH. Global HPV Vaccine Introduction Overview. PATH Solutions; 2022. Available from: <https://www.path.org/our-impact/resources/global-hpv-vaccine-introduction-overview/>. [Last accessed on 2024 Jan 07].
- Centers of Disease Control and Prevention. HPV Vaccine Schedule and Dosing. CDC; 2021. Available from: <https://www.cdc.gov/hpv/hcp/schedules-recommendations.html>. [Last accessed on 2024 Jan 17].
- Lei J, Ploner A, Elfström KM, Wang J, Roth A, Fang F, *et al.* HPV vaccination and the risk of invasive cervical cancer. *N Engl J Med* 2020;383:1340-8.
- Canfell K, Kim JJ, Brisson M, Keane A, Simms KT, Caruana M, *et al.* Mortality impact of achieving WHO cervical cancer elimination targets: A comparative modelling analysis in 78 low-income and lower-middle-income countries. *Lancet* 2020;395:591-603.
- WBD. World Bank Country and Lending Groups – World Bank Data Help Desk. The World Bank; 2022. p. 1-8. Available from: <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-k-country-and-lending-groups>. [Last accessed on 2024 Jan 14].
- Brisson M, Kim JJ, Canfell K, Drolet M, Gingras G, Burger EA, *et al.* Impact of HPV vaccination and cervical screening on cervical cancer elimination: A comparative modelling analysis in 78 low-income and lower-middle-income countries. *Lancet* 2020;395:575-90.
- Alrawag KJ. Cervical cancer in Iraqi females., Annual Report Iraqi Cancer Registry 2021; 2021.
- Elshami M, Thalji M, Abukmail H, Al-Slaibi I, Alser M, Radaydeh A, *et al.* Knowledge of cervical cancer risk factors among Palestinian women: A national cross-sectional study. *BMC Womens Health* 2021;21:385. [doi: 10.1186/s12905-021-01510-2].
- Muthuramalingam MR, Muraliedharan VR. Patterns in the prevalence and wealth-based inequality of cervical cancer screening in India. *BMC Womens Health* 2023;23:337.
- Mukosha M, Muyunda D, Mudenda S, Lubeya MK, Kumwenda A, Mwangu LM, *et al.* Knowledge, attitude and practice towards cervical cancer screening among women living with human immunodeficiency virus: Implication for prevention strategy uptake. *Nurs Open* 2023;10:2132-41.
- Mijiti Y, Yusupu H, Liu H, Zhang X, Maimaiti G, Kawuli R, *et al.* Survey on cervical cancer knowledge and its influencing factors among 2,578 women in Shache county, Kashi, China. *BMC Womens Health* 2023;23:1-8. Available from: <https://bmcmwomenshealth.biomedcentral.com/articles/10.1186/s12905-023-02390-4>. [Last accessed on 2024 Jan 31].
- Kristina SA, Lienaningrum AS, Wulandari GP. Beliefs and acceptance of human papillomavirus (HPV) vaccine among parents in urban community in Yogyakarta. *Int J Pharm Res* 2020;12:662-7.
- Tadesse A, Tafa Segni M, Demissie HF. Knowledge, attitude, and practice (KAP) toward cervical cancer screening among adama science and technology university female students, Ethiopia. *Int J Breast Cancer* 2022;2022: 2490327.