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Original Article

Nurses, Knowledge and Attitude regarding Cervical Cancer Screening in Erbil City

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ABSTRACT

Background and objectives: Cervical cancer occurs in the cells of the cervix and the lower part of the uterus that connects to the vagina. Cervical cancer is a condition that can be prevented with the proper screening and prevention techniques. Healthcare practitioners with sufficient expertise, especially nurses, play a crucial role in enlightening the community about the need and availability of screening tests, so it is important to explore the knowledge and attitude of nurses about cervical cancer and screening. This study aimed to assess the level of knowledge and attitude of nurses towards cervical cancer screening and its associated factors in Erbil city

Methods: A quantitative, descriptive cross-sectional study was conducted in Teaching Hospitals in Erbil City, Kurdistan Region, Iraq, from September 1st, 2021, to September1st, 2022. Also, nonprobability (convince) sampling techniques were used for a sample, which included 284 nurses. Data was collected through face-to-face interviews using a questionnaire designed by the investigator. Descriptive statistics SPSS version 25 was used, and statistics of frequencies, percentages, and inferential statistical analysis of Chi-square test and fisher exact test were used.

Results: Less than one-third (25.7%) of the study sample aged between (29–33) years, the majority (94.7%) were married, and less than half (49.30%) of them graduated with a technical diploma. More than one-third (38.7%) had 1–5 years of nursing experience. More than half (53.3%) of the participants achieved a good overall knowledge score and had a positive attitude (95.5%) toward cervical screening. The primary source for obtaining information regarding cervical cancer and screening was healthcare workers (37.6%), followed by medical textbooks (14.8%). There was a highly significant association between age and the overall knowledge of nurses regarding cervical screening (P-value = 0.007).

Conclusion: Kurdistan nurses have a good knowledge and a positive attitude regarding cervical cancer screening. A highly significant association was found between the level of knowledge and the age of the participants. Examining their practice and their role in encouraging women of the Kurdish society to performing cervical cancer screening is recommended. However nurses, need continuous knowledge and training through seminars and lectures regarding cervical cancer screening.

Keywords: Nurses; Knowledge; Attitude; Cervical Cancer; Cervical Screening.

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INTRODUCTION

Cervical cancer is the fourth most common cancer in women, ranking after breast cancer (2.1 million cases), colorectal cancer (0.8 million), and lung cancer (0.7 million) [1]. Cervical cancer is characterized by symptoms including abnormal vaginal bleeding and foul-smelling vaginal discharge. However in many situations, women with cervical cancer have no symptoms [2]. Human papillomavirus (HPV), a sexually transmitted infectious disease, is the most common cause of cervical cancer. Several common risk factors recognized to be associated with cervical cancer worldwide. Sexually transmitted infections (primarily HPV and herpes simplex virus), reproductive sexual factors (multiple sexual partners, early age at first sexual activity, early age at first delivery, parity, and hormonal birth control pills),behavioral factors (cigarettes and obesity), and host factors (genetic sensitivity) are all known to be associated with cervical cancer [3]. Over the past several decades, the incidence of cervical cancer has decreased in developed countries [4]. This is mainly attributed to increased awareness and more effective screening and prevention strategies employed in these countries [5, 6]. In 2018, there were 570,000 new cases and 311,000 deaths from cervical cancer worldwide [1]. Africa has the world's highest cervical cancer incidence and fatality rates, roughly ten times higher than western countries. Organized screening programs can effectively control cervical cancer [7]. According to the World Health Organization (WHO), the crude incidence rate of cervical cancer in Iraq is 2.1 per 100,000 women of all ages[8]. .Kurdistan is a self-governing province in northern Iraq. It has a population of 8.35 million people and occupies an area of around 40.000 square kilometers, with 36 million people living in Iraq [9].In Iraq, studies conducted in various cities have indicated an increased frequency of several types of cancer. However, very few studies have been conducted to assess cancer incidence in the country, particularly in the Kurdistan Region. Ramadhan et al. (2011) showed an increased risk of all cancers, including cervical cancer .In recent years, in the first study on cancer incidence in the Kurdistan Region, the risk of cancer has increased in the Kurdistan Region of Iraq as a result of several environmental and epidemiological factors. For example, the incidence of cancer in Halabja city, Kurdistan, is ten times greater than the usual rate owing to the long-term repercussions of the chemical bombing in 1988 [10]. Early diagnosis and treatment of cervical precancerous lesions are critical for lowering cervical cancer morbidity, and death [11] can be prevented by early detection and treatment. Cervical cancer screening programs like the pap smear test visual inspection with acetic acid application (VIA) and HPV screening test have been proven to be the most effective way to prevent cervical cancer. Until 2004, there were no cervical cancer screening programs in the Kurdistan Region. The Ministry of Health in the Kurdistan Region created screening after first study on cervical intraepithelial neoplasia (CIN) the results revealed dysplasia in 4.4% of the population .The program was launched in Erbil in 2006, Duhok in 2008, and Sulemania in 2009 [12]. While there is no mandatory requirement to check for cervical cancer the recommendation of doctors and nurses appears to be the most powerful motivator [13].Nowadays nurses play a various of roles including patient advocate, caregiver, and research investigator. Nurses can offer correct information to the public to increase knowledge, awareness, and attitudes, thereby motivating females in the community to follow recommended cervical cancer screening procedures [14].Nurses may educate

women more about the risk factors of carcinoma of the cervix. A pessimistic outlook, lack of awareness, and understanding of cervical cancer screening techniques among healthcare practitioners [15], particularly nurses, might seriously challenge cervical cancer control. [15].Nurses are role models for other women if they routinely get cervical cancer screening checks, they may encourage their colleagues to do the same [16]. The aim of this study is to assess the knowledge and attitude of the nurses regarding cervical cancer screening in Erbil city.

METHODS

A quantitative, descriptive cross-sectional study was conducted. The study was carried out in Erbil City, Kurdistan region Iraq from September 1st, 2021, to September 1st, 2022, with convenience (convince) samples consisting of 284 nurses who worked in Maternity Teaching Hospital, Rzgary Teaching Hospital, Raparin Paediatric Teaching Hospital, Hawler Teaching Hospital, Surgical Teaching Hospital - Cardiac centre, and East emergency Teaching Hospital and have agreed to participate in the research. The study included the female nurses who were willing to participate in the study, regardless of their degrees of education (primary and high school of nursing, diploma, bachelor, master, Ph.D.). Volunteer nurses were excluded from the study. The Yamane formula has been used to estimate the sample size N= sample size, E2= Margin of error, confidence level =95% and margin of error =0.05. [N= N/(1+N(e)2], N=985/1+985 (0.05)2 and n=284 nurses. Direct face-to-face interviews ranging from 25–30 minutes using a questionnaire developed by the researcher were conducted in different hospitals. The questionnaire consisted of three parts. The first part included the socio-demographic characteristics of the study sample such as age, level education, working experience, residency, marital status and family history of cervical cancer. The second part consisted of 11 questions about nurses' knowledge of cervical screening. Responses were evaluated as follows: correct = 1 and incorrect = 0. Nurses' responses to questions regarding cervical cancer screening knowledge were divided into three categories and scored as follows: poor knowledge (0 to 3), good knowledge (4 to 7), and high knowledge (8 to 11).The final part consisted of seven items evaluating the attitudes of nurses regarding cervical cancer screening. Responses were ranked as follows: disagree = 1, neutral = 2, and agree =3. Attitudes were divided into two categories and scored as follows: positive (14 to 21) and negative (7 to 13).Eighteen experts in related fields validated the questionnaire, and the pilot study of 25 nurses indicated that the tool was eligible for data collection. The Cronbach's Alpha (reliability of the questionnaire) was 0.75. Before data collection, the researcher explained the research process and study aims to participants and asked each of the participants who agreed to participate to complete a consent form. Formal permission was obtained from the Hawler Medical University/College of Nursing and General Directorate of Health in Erbil Kurdistan /Iraq. All participants have the right to withdraw from the study at any time. The researchers have promised to keep the data information for confidentiality and anonymity. The data were analyzed using SPSS software for statistical analysis Version 25, to calculate descriptive statistical analysis (frequency and percentage). Inferential statistical analysis (chi-square and fisher exact test) was used to determine the association between variables, the (p-value ≤ 0.05) is considered statistically significant.

RESULTS

According to the results, less than one-third of the participants (25.7 %) were between 29 and 33 years old. Regarding their educational background, approximately half of the study sample (49.3%) holds a technical diploma/degree. The study samples also reveal that more than one-third (38.7%) of the participants had one to five years of working experience. About 65.1% of participants are married, and most of them (94.7%) live in the cities. More than a quarter of the participants (30.6%) work in maternity teaching hospitals. Ninety-three percent of nurses did not have a history of cervical cancer in their family. Only 6.7% reported a family history of cervical cancer among their mother, sister, grandmother, and aunt (31.6%, 21.1%, 31.6%, and 15.8%, respectively) (Table 1).Table 2 illustrates the knowledge levels of participants regarding cervical cancer screening. Most of the participants (83.8%) correctly responded to the statement, "If cervical changes are detected early, they can be easily cured," and 81.0% of the participants believed that cervical biopsy could detect cancer of the cervix. More than three-fourths (76.8%) knew a pap smear test might reveal precancerous and cancerous abnormalities. Table 3 demonstrates the attitude of nurses regarding cervical screening Eighty-two percent of nurses agreed with the statement "Screening helps in controlling of carcinoma," and (72.6%)agreed with the statement "Speculum examination and Pap smear are doctors and nurses' procedures." Less than half (48.2%) of participants believed carcinoma of the cervix could not be transmitted.

Table 1 :Distribution of the socio-demographic characteristics of the study sample (n=284)

Variables	subgroups	F.	(%)
Age (groups)	19-23	32	(11.3)
	24-28	66	(23.2)
	29-33	73	(25.7)
	34-38	43	(15.1)
	≥39	70	(24.6)
Level of	Preparatory nursing	54	(19.0)
	Technical Diploma	140	(49.3)
	Bachelor	81	(28.5)
	Postgraduate	9	(3.2)
Working	1-5	110	(38.7)
	6-10	63	(22.2)
	11-15	47	(16.5)
	≥16	64	(22.5)
Marital status	Single	90	(31.7)
	Married	185	(65.1)
	Divorced/Widowed and Separate	9	(3.2)
Residence	Urban	269	(94.7)
	Rural	15	(5.3)
Name of hospital working in	Maternity Teaching Hospital	87	(30.6)
	Raparin pediatric Teaching Hospital	35	(12.3)
	Hawler Teaching Hospital	70	(24.6)
	Rizgary Teaching Hospital	38	(13.4)
	Surgical Specialty Teaching hospital	36	(12.7)
	Cardiac center		
	East Emergency Teaching Hospital	18	(6.3)
As a nurse do u have any family History of cervical cancer?	yes	19	(6.7)
	No	26	(93.3)
If yes who?	Mother	6	(31.6)
	Sister	4	(21.1)
	Aunt	6	(31.6)
	Grandmother	3	(15.8)

Table 2: Nurse's knowledge towards cervical cancer screening.

Variables	Correct	Uncertain	Incorrect
	F. (%)	F. (%)	F. (%)
-During the visit for the screening, a few cells will be collected from your cervix in the form of a sample.	212 (74.6)	63 (22.2)	9 (3.2%)
-A pap test can detect both cancerous and precancerous lesions	218 (76.8)	40 (14.1)	26 (9.2)
-If cervical changes are detected early they can be easily cured.	238 (83.8)	34 (12.0)	12 (4.2)
-Pap smear test is the only method it can be used for detecting cervical cancer	112 (39.4)	79 (27.8)	93 (32.7)
-Married women should be screened at least once in whole life	193 (68.0)	57 (20.1)	34 (12.0)
-Pap smear test it must be done by using vaginal ultrasound	86 (30.3)	100 (35.2)	98 (34.5)
-Healthy women need to have regular cervical screening once every three years from age 25-65 when cervical screening is normal	138 (48.6)	96 (33.8)	50 (17.6)
Cervical screening it's not necessary until the end of life.	61 (21.5)	70 (24.6)	153 (53.9)
-The Best time for doing a pap smear test is during menstrual flow	59 (20.8)	10 (35.6)	124 (43.7)
-Cervical biopsy can detect cancer of cervix	230 (81.0)	42 (14.8)	12 (4.2)

Table 3: Attitude of the nurses towards cervical cancer screening.

Attitude	Disagree		Neutral		Agree	
	F.	(%)	F.	(%)	F.	(%)
Like any woman, I am susceptible to developing cervical cancer.	37	(13.0)	73	(25.7)	174	(61.3)
Carcinoma of the cervix cannot be transmitted from one person to another.	51	(18.0)	38	(13.4)	195	(68.7)
Screening helps in controlling of carcinoma	24	(8.5)	27	(9.5)	233	(82.0)
*Cultural belief prevent me from having cervical screening	113	(39.8)	42	(14.8)	129	(45.4)
*Pap smear is unnecessary if there are no signs and symptoms.	118	(41.5)	51	(18.0)	115	(40.5)
Speculum examination and Pap smear are doctors and nurses procedures.	32	(11.3)	40	(14.1)	212	(74.6)
*Cervical cancer is a sexual transmitted disease	87	(30.6)	35	(12.3)	162	(57.0)

*Disagree is the correct response. For all the other statements, 'agree' is the correct response.

A high statistically significant association was found between nurses' age and overall knowledge regarding cervical screening (p-value=0.007). No significant association was found between the level of education and overall knowledge of the study samples regarding cervical screening, the value of (p -value= 0.128). According to the present study's findings, there was no significant association between the working experience group and overall knowledge of cervical screening (p-value= 0.275) (Table 4).

Table 4: The association between some demographic characteristics (age, level of education and working experiences) of the nurses with overall knowledge towards cervical cancer screening (n=284)

Variables	Poor knowledge F. (%)	Good knowledge F. (%)	High knowledge f. (%)	Total f. (%)	P*	
Age						
19-23	5(1.8)	20(7.0)	7(2.5)	32(11.3)		
24-28	2(0.7)	45(15.8)	19(6.7)	66(23.2)	**0.007**	
29-33	7(2.5)	32(11.2)	34(12.0)	73(25.7)	**HS**	
34-38	6(2.1)	17(6.0)	20(7.0)	43(15.1)		
≥39	2(0.7)	38(13.4)	30(10.6)	70(24.7)		
Education						
Preparatory nursing school	5(1.8)	30(10.6)	19(6.7)	54(19.1)		
Technical diploma	15(5.3)	73(25.7)	52(18.3)	140(49.3)	**0.128**	
Bachelor	2(0.7)	42(14.7)	37(13.0)	81(28.4)	**NS**	
Postgraduate	0(0)	7(2.5)	2(0.7)	9(3.2)		
Working experience						
1 – 5	10(3.5)	67(23.6)	33(11.6)	110(38.7)		
6-10	6(2.1)	32(11.3)	25(8.8)	63(22.2)	**0.275**	
11-15	3(1.1)	22(7.7)	22(7.7)	47(16.5)	**NS**	
≥16	3(1.1)	31(10.9)	30(10.6)	64(22.6)		

Figure 1 demonstrates the overall knowledge of nurses regarding cervical screening and indicates that 53.5% had overall good knowledge, 38.7% had a high level of knowledge, and 7.7% had poor knowledge.

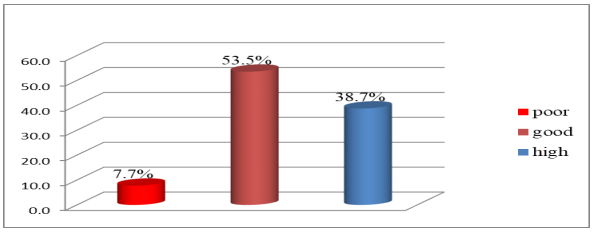

Figure 1: Distribution of the study participants by the level of knowledge
regarding cervical screening n=284

Figure 3 reveals that the overall attitude of the participants was positive (90.5%), and only (9.5%) had a negative attitude regarding cervical screening.

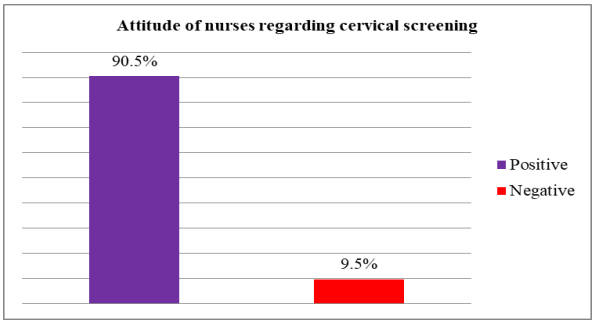

Figure 3: Illustrates overall attitude of nurses regarding cervical cancer screening.

Figure 2 indicates the main sources of obtaining information regarding cervical screening by participants. Healthcare workers (37.6%) was the most common source for gaining knowledge regarding cervical cancer screening, followed by medical textbooks (14.8%), Google (14.3%), social media (14.1%), television/ radio (10.1%), friends and spouses (6.1%) and newspaper (3.0%),

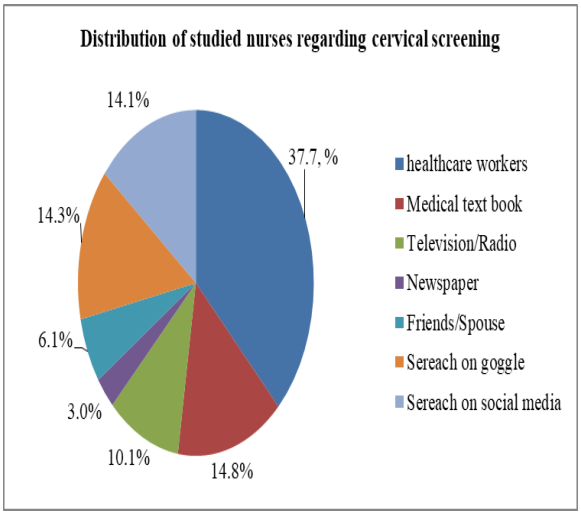

Figure 2: Illustrates nurse's source of information regarding cervical screening

DISCUSSION

Cervical cancer is the most common malignancy among women worldwide with about half a million cases per year, with four out of five women coming from developing and underdeveloped nations. [10]. The key to addressing cervical cancer is effective screening. In Kurdistan, there is no mandatory requirement to check for cervical cancer [17]. In recent years, there appears to have been an increase in non-communicable diseases, as in prior decades. In developed countries, cervical cancer prevention has been successful thanks to simple and inexpensive screening tests that aid in the identification of pre-invasive cervical changes that develop and progress slowly over the years prior to the development of invasive cervix cancer, and treatment of these precursor lesions has greatly reduced the incidence of invasive cervix cancer in worldwide. Other procedures, such as colposcopy and cervical biopsies, necessitate training and money [18]. This study aimed to learn more about nurses' knowledge and attitudes towards cervical screening. Thus, staff nurses can play

acrucial role in cervical cancer screening if they are adequately trained, and their services are utilized in the right direction. The present study has shown that most respondents had good knowledge of cervical screening [19].The socio-demographic characteristics of nurses regarding cervical screening The subjects in this study included female nurses (n = 284), with the highest percentage of nurses between the ages 29 to 33 years old. More than two-thirds of the study sample were married. This result is supported by other studies reporting that the participants were aged between 26 and 30 years and were married (61.7%) [17], ages of samples were between 26 and 40 years, and a majority (90%) of them were married [16]. In a cross-sectional study by Ayub in Pakistan among nursing staff, their ages were between 25-34, and more than two-thirds of nurses (72%) were married [18]. Another result agrees with the present study, which was done in an institution in rural India by Shekhar among nursing staff their age was between (20-29) and most of them (86.6%) were married [19]. The result disagrees with a study done among doctors and nurses indicating the highest percentage of participants their ages were between (21 – 30) years old (32.9%) [20].Another that two-thirds of participants (67.9%) were married and their ages were between 41-50 years is also in disagreement with the present study [21]. The current study shows that, the highest percentage of study samples (49.5%) held a technical diploma/degree. Like a study done in Addis Ababa-Ethiopia by Getahun et al., less than one-third of health workers (25.9%) held a diploma in nursing [22]. In contrast, a study reported more than two-thirds of study sample 68.9% held bachelor's degrees [19]. In the current study, only 6.7 % of participants had a family history of cervical cancer. They were first-degree relatives, consisting of the mother, sister, grandmother, and aunt. Similarly, a study conducted in Saudi Arabia found that 3.8% were first-degree relatives [23]. Our study demonstrates that most of study sample had between 1 -5 years of working experience. A similar study by Getahun in Addis Ababa, Ethiopia, found that the majority had 1-9 years of working experience. This result disagrees with a study conducted in Tanzania, where more than half of the nurses had more than 20 years of working experience [24]. Assessment of knowledge of nurses regarding cervical screening

Adequate knowledge about cervical cancer and its screening is crucial for nurses as it determines their screening practice for cervical cancer. The present study has shown more than half (53.3%) of respondents had good knowledge of cervical screening. A similar investigation was reported by Sait [25]. In our study, more than one-third (48.6%) of participants knew that screening should begin at 25 years or 3 years after starting sexual activity whichever is earlier. This is comparable with a research conducted in tertiary institutions in rural India among nurses, which was a cross-sectional study [16]. The current study illustrates, that most nurses responded that “married women should be screened at least once in their whole life”. This is comparable with the study conducted by Devi et al. in south India [26]. Our study demonstrates three-fourths of participants knew that if cervical changes are detected early they can be easily cured. A similar study investigation was reported by Desaraju and Cody [20]. In the current study, more than three-quarters of the participants knew that biopsy can detect cancer of the cervix. Similar investigations were reported by Singh et al and Shekhar et al [17, 19]. In the present study, more than one-third of the participants (37.6%)

received information about cervical screening from healthcare workers. It is matched with studies conducted in different countries [27, 21, 28]. In contrary, research conducted in Tanzania by Urasa and Darj among 137 nursing staff the study showed the study samples got information through nursing school and social media as a main source for gaining their knowledge regarding cervical cancer screening (53.3%, 47.4% respectively) [24]. The current study showed that most participants (76.8%) knew that a pap smear test can detect both cancerous and precancerous lesions. This result agrees with studies done by authors Singh et al and Ayub et al [17, 18]. Married nurses were more aware than unmarried women, because they are more likely to approach a health facility for obstetric, gynaecological, or other reasons, where they would be offered opportunistic screening during these visits. Additionally,, partners in long-term relationships demonstrate real care for one other's health and may play a crucial role in screening and other health maintenance. These finding matches a study has done by Siahpush et al [29].Regarding the knowledge of samples toward cervical cancer screening, more than half of them had a good level of knowledge (53.35%), more than one-third of nurses (38.7%) had a high knowledge and only 7.7% had a poor level of knowledge. This could be because nurses were interested in receiving cervical screening information, but do not have opportunities to improve their knowledge. It also could be due to the level of education as 49.30% had a nursing diploma, The present study demonstrated that nurses are key providers of women's education during admission and pre-discharge. This leads to increased awareness toward the disease prevention and cervical screening programs to improve the women's health outcome and reduce the cost of care [17].Assessment of the attitude of the participants regarding cervical screeningThe current study demonstrates that four-fifths (82.0%) of the participants agreed that "screening helps in controlling carcinoma." This result agrees with a cross-sectional study done in Riyadh, Saudi Arabia [23]. In our study, about three-fourth (74.6%) of participants agreed "to the speculum examination and Pap smear are doctor and nurses procedure". This result disagreement with a study done by Devi et al. which mentioned the speculum examination and Pap smear are only doctors' procedures[17].Another cross-sectional study conducted among healthcare workers by Henna et al. in a tertiary hospital in Riyadh, Saudi Arabia indicated two-thirds of participants were nurses (66.1%). A majority of the nurses (76.2%) mentioned that the speculum examination and pap smear can only be done by doctors [26]. The study revealed more than two-thirds (68.7%) of participants responded that "carcinoma cannot be transmitted from one person to another" which agreed with another similar study [23]. Association between overall knowledge and some demographic characteristics The score range among participants was wide and we found a highly significant inverse association between age and overall knowledge (p-value = 0.007) among nurses. Findings are similar to the studies conducted by Rahman and Kar in Pakistan among nursing staff which showed there was a highly significant relationship between overall knowledge regarding cervical screening among the respondents (p-value=0.007)[33]. In the present study, there was no a significant association between the level of education and the overall knowledge of nurses. A finding which is in agreement with the result of the studies [32, 23]. In contrast to a study done

in Egypt by Abdulraof et al, there was a significant association between level of education and overall knowledge [11]. Regarding nurses working experiences the current study showed that there was no a relationship between overall knowledge and working experience, matched with a study done in Ethiopia, India and Tanzania [22,23,24]. In contrast, another study done in Egypt demonstrated there was a significant association between work experience and overall knowledge [11].

CONCLUSION

In developing countries like Iraq, healthcare personnel, particularly nurses, are at the heart of the health system. Most of the nurses in the current study illustrated a good understanding of cervical cancer screening and a positive attitude toward it. Age was a significant factor associated with their knowledge. However, regular training in the form of a seminar or lecture for all healthcare providers or as part of the orientation program for newly hired nursing staff is suggested. This will provide a chance to raise women's awareness of screening tests and their comfort and confidence in them. Nurses routinely subjected to screening exams may act as other women's role models.

CONFLICT OF INTEREST

None of the writers have any conflicts of interest or sources of financial support.

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