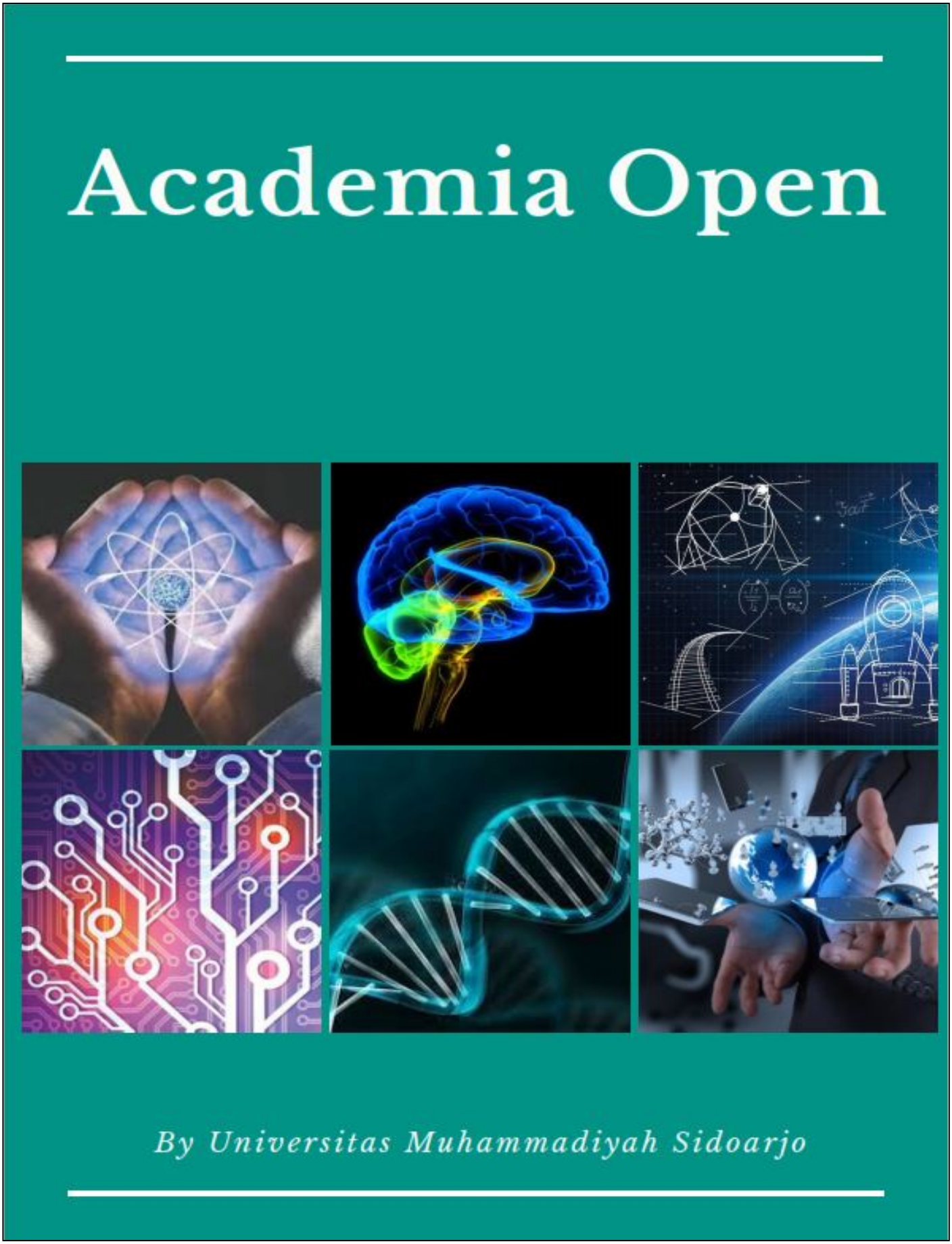
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Conflict of Interest Statement

The author[s] declare that this article was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Cervical Cancer Screening Knowledge and Practices Among Women in Basra

Pengetahuan dan Praktik Skrining Kanker Serviks di Kalangan Perempuan di Basra

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Abstract

Background: Cervical cancer is a major global public health issue, ranking as the third most common cancer among women worldwide. **Specific Background:** Effective prevention relies on adequate knowledge and the willingness to undergo screening, yet data on these aspects remain limited in many low-resource settings. **Knowledge Gap:** In southern Iraq, particularly Basra, little is known about women's awareness, attitudes, and practices regarding cervical cancer screening. **Aim:** This study aimed to assess women's knowledge, attitudes, and practices toward cervical cancer screening in primary healthcare centers in Basra. **Results:** A randomized descriptive cross-sectional study was conducted on 400 women aged ≥20 years using systematic and random sampling across 12 health centers. Only 10.5% demonstrated good knowledge, and 2.75% had undergone a Pap smear, with 31.1% citing social media as their main information source. A significant association was found between knowledge and variables such as age, education, employment, and family history of cancer. Despite low screening rates, 62.75% exhibited a positive attitude. **Novelty:** This study is among the few in Iraq to explore the multifactorial dimensions of cervical cancer screening behavior. **Implications:** The findings highlight the urgent need for targeted health education interventions to improve screening uptake and correct misconceptions among women in underserved regions.

Highlights:

1. Low cervical cancer screening and knowledge among women in Basra.
2. Assess knowledge, attitudes, practices toward cervical cancer screening.
3. Poor knowledge, low screening rates, but positive attitudes observed.

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Introduction

The term "cervical cancer" describes cancers that can impact the cervix's cells; these tumors are usually brought on by abnormal cell changes close to the uterine entrance from the vaginal canal. It's a slow-growing cancer with three precancerous stages that are usually detected through national cervical cancer screening programs [1, 2]. The ‘silent killer' nickname for cervical cancer refers to the fact that it doesn't show signs until it has progressed to an advanced stage. However, it takes a while to manifest, giving women plenty of time to spot and treat the condition [3]. Cervical cancer is the third most common cancer among women worldwide [4].

Over 500,000 new instances of cervical cancer are diagnosed worldwide each year [5]. Approximately 250,000 people die from cervical cancer each year. It claims the lives of more than 4,000 Americans annually, with a significantly higher death rate and more gaps in evidence-based care for women, African Americans, and Hispanics residing in low-resource areas [6]. Despite cervical cancer rates in the Middle East having been reported to be lower than in Western nations, this could be attributed to lower HPV infections or sociocultural rejection of extramarital sexual contact [7, 8].

The raw incidence rate of cervical cancer in Iraq, according to the World Health Organization (WHO), is 2.1 per 100,000 women of all ages. According to reports from Iraq, 311 women are identified with cervical cancer each year, with 212 dying from the condition [9]. Furthermore, according to the Iraqi Cancer Board's most recent report, in 2013, 197 cervical cancer cases were reported among Iraqi patients aged 25 to 70 who lived in different regions. The 12th most prevalent cancer among Iraqi women and the 10th most common among those between the ages of 15 and 44 is cervical cancer [10].

Cervical cancer normally takes years, if not decades, to emerge from aberrant cells. These aberrant cells are frequently asymptomatic, causing no or minor symptoms. They can produce the following symptoms if they progress into cancer [11]: Unusual vaginal discharge that may have an uncomfortable odor, Fatigue, and weight reduction, Pain in the abdominal area and pelvis, Pain when passing urine, Abnormal bleeding for example, after intercourse, between periods, or post-menopausal cancer is frequently advanced when symptoms appear.

There are three forms of cervical cancer. Of all cervical cancers found, 80–85% are squamous cell carcinomas, a kind of cancer that develops from the squamous epithelium. One kind of cervical cancer that develops from endo cervical cells is called adenocarcinoma and is responsible for about (10% to 15%) of all invasive cervical cancers [12]. Aden squamous carcinoma is a type of cervical tumor developed from the ecto or endo cervical cells and accounts for about (3%) of all cervical malignancies identified [13].

Most women who get cervical cancer have one or more risk factors that increase their susceptibility to the disease. Risk factors include immune deficiencies, switching sexual behaviors, tobacco use, HIV-infected women, ethnic influences, multiple sexual partners, younger age at first sexual contact, younger age at first conception, steroid contraceptive methods, and infection with, for example, human papillomavirus (HPV), herpes simplex virus type 2, Neisseria gonorrhea, and Chlamydia trachomatis. [14].

Significantly, infection with HPV, which has several carcinogenic subtypes, causes (99.7%) cervical premalignant lesions [15]. There are even more than 130 different strains of HPV, with 20 of them linked to cancer. Men are not checked outside of study protocols; hence rates of HPV-related cervical dysplasia are solely known in women. HPV is transferred by skin-to-skin contact, such as during sexual activity and hand-to-genital region contact. Invasive cervical carcinoma is most usually caused by HPV 16 and 18. [16].

Cervical screening, also known as secondary prevention, tries to prevent invasive cervical cancers by finding and eliminating premalignant lesions that, if left untreated, might progress to invasive cervical cancer [17]. Traditional cytology, liquid-based cytology, HPV-based screening, and visual examination with acetic acid or Lugol's iodine are among the cervical screening modalities available. The use of screening procedures is typically influenced by the availability of healthcare services and facilities [18]. Cervical cytology and HPV-based screening are widely employed in most high- and middle-income nations, although visual examination with acetic acid or Lugol's iodine might be used in settings with low capabilities [19].

Methods

A randomized descriptive cross-sectional study was conducted from the 1st of February 2022 to the 1st of June 2022 on 400 women who attended the primary health care centers in Basra, the southern part of Iraq, for various medical issues. A random sampling technique was used as the sampling technique selection for this study, a recommended method of sampling for such types of research. Steven K. Thompson Formula was used in this study for sample size calculation: (41)

The sample size was calculated accordingly, and it was 384 women. Sampling errors can be minimized by accurate planning and comprehension of the sampling technique and extension of the sample size to cover all the missing

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cases to reach up to (400 participants). A systemic sampling was used to select the primary care centers by alphabetically organizing all centers in the first, second, and third health sectors. Then each 3rd center was selected as the sample center with a total of 12 primary health care centers. Four centers were selected from each sector as follows: The first sector: Al-Razzi, Al-Ashar, Al-Mohandessin district, and Al-Mutaiha. The second sector: Al-Ribat, Al-Jubaila, Mohammed Al-Durra, and Al-Maaqel. The third sector: Al-Khaleej, Entifada Alqsa, Hai Al-Murabaa, and Al-Abass.

A simple random sampling was used to select the participants for each selected center. The participants were collected from the sectors in Basra city center (first, second, and third health sectors), and each participant had an equal chance to be selected from the sampling poll. A total of 400 women attended primary health care centers in the center of Basra city. All of the participants were randomly selected accordingly. Inclusion criteria are Married or previously married women of the ages 20 years old and above (as the proper age for Pap smear examination) were included in the current study. Exclusion criteria are Participants were <20 years old and Single female.

The study relied on a special-designed questionnaire, which was composed of four parts; part I, including the socio-demographical gynecological and obstetrical aspects; part Ⅱ, including knowledge-related questions about Pap smear and cervical carcinoma, part Ⅲ, including attitude-related questions, and part Ⅳ, including practice-related aspects. Data were collected from the chosen centers by regular 2-day visits per week from February to June 2022, and after the sample was collected the women were informed of all questionnaire aspects. Data was gathered, sorted, and analyzed accordingly.

Frequencies and percentages were analyzed using the Statistical Package for the Social Sciences software version 26 (SPSS-v.26). Descriptive statistics were used to demonstrate participants' demographic characteristics. The Chi-square test was used to find if there is an association between knowledge and different variables. In order to determine which variables contributed to the chi-square results, adjusted standardized residuals were utilized. As the dependent interval in statistics, P-values less than 0.05 were considered statistically significant. This was based on a (95%) confidence interval.

Result and Discussion

Result

	Variables	Frequency (No. 400)	Percent
Age	Mean ±SD	34.07±11.216	
	20-29	192	48.0%
	30-39	126	31.5%
	40-49	51	12.75%
	≥50	31	7.75%
Educational level	Illiterate	23	5.8%
	Read and write	18	4.5%
	Primary Education	113	28.2%
	Secondary Education	107	26.75%
	Institute	51	12.75%
	College Education	80	20.0%
	Higher Education	8	2.0%
Occupation	Employ	93	23.25%
	Housewife	291	72.75%
	Retired	7	1.75%
	Student	9	2.25%

Table 1. *General demographical data analysis of the participants.*

The present study included 400 attendees with a mean age of 34.07±11.216. Most participants were between the ages of 20-29 years (48%), followed by those between the ages of 30-39 years (31.5%), 40-49 years (12.75%), and lastly the ages of 50 years and above (7.75%). Most of the participants had primary and secondary education (28.2% and 26.75%) respectively followed by college education (20%), institute (12.75%), illiterate (5.8%), read and write (4.5%), and finally, only (2%) had higher education. The majority of the participants were housewives about (72.75%), followed by employees (23.25%).

	Variables	Frequency (No. 400)	Percent

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Marital status	Married	381	95.25%
	Divorce	9	2.25%
	Widow	10	2.5%
Marriage No.	1	378	94.5%
	≥ 2	22	5.5%
Contraceptive use	Hormonal contraceptives	120	30.0%
	Coitus interrupts\condom	41	10.25%
	IUCD	18	4.5%
	Ligation	11	2.75%
	Not used	210	52.5%
Family history of carcinoma	Yes	112	28.0%
	No	288	72.0%
Pregnancy no.	Nil	43	10.75%
	1-4	303	75.75%
	≥ 5	54	13.5%

Table 2. *Gynecological data analysis of the participants.*

The majority of the participants were married (95.25%), followed by widows (2.5%), and only (2.25%) were divorced. Additionally, most of them were married only once (94.5%), while (5.5%) were married twice. About half of the participants (52.5%) didn't use any contraceptive, while (30%) used hormonal contraceptives, (10.25%) used coitus contraceptives, (4.5%) used IUCD, and only (2.75%) used ligation. Moreover, most women had no family history of carcinoma (72%) compared to (28%) with a family history of carcinoma. The majority of the participants also had 1-4 pregnancies (75.75%), followed by (13.5%) with ≥ 5 pregnancies, and (10.75%) who hadn't any previous pregnancies.

Variables	Frequency (No. 400)	Percent %
Poor knowledge	298	74.5%
Satisfactory knowledge	60	15.0%

Table 3. *Knowledge scores analysis of the participants.*

Most women had poor knowledge (74.5%), followed by (15%) with satisfactory knowledge, and only (10.5%) with good knowledge.

Variables	Frequency (No. 400)	Percent %
Good attitude	251	62.75%
Fair attitude	52	13.0%

Table 4. ***Attitude score analysis of the participants.***

Most of the participants showed a good attitude (62.75%), followed by (24.25%) with a poor attitude, and only (13%) showed a fair attitude.

Variables	Frequency (No. 400)	Percent %
Good practice	11	2.75%
Poor practice	389	97.25%

Table 5. *Practice score analysis of the participants.*

Most women had poor practice (97.25%), and only (2.75%) with good practice.

Discussion

Based on its hidden course of progress and fatal nature when becoming symptomatic, females' knowledge about

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cervical cancer is an important issue in family medicine.

To ascertain the knowledge, attitudes, and practices of 400 women on cervical cancer, cross-sectional descriptive research was conducted.

There is a difference in the rates of knowledge between Iraqi women and women in nearby countries as well as developed countries. This may be related to the educational background of the participating women, as a high percentage of them (40%), in our study, had their educational level equal to primary school or less in comparison to the other countries which have a much higher level of education among participated women [20].

A study in Ethiopia found that women who did not complete high school were 7.3 times less likely to be aware of the importance of cervical cancer screening than women who completed a diploma level or higher [21]. Similarly, our study found that there is a significant association between educational level and the rate of knowledge. This study found that middle and older women have a higher percentage of knowledge in comparison to the younger age groups. This is opposite to the results of Shrestha et al., in which the level of knowledge among younger females was higher than that of the older age groups [22].

Furthermore, data from a previous study done in Tikrit governorate showed no significant association between age and the level of knowledge [23]. Additionally, it is believed that as women get older, they will consult doctors more frequently for gynecological and obstetric issues. In turn, this will increase their awareness of and willingness to undergo pap tests [24].

The occupation- which may be indirectly related to the educational level – positively influences the women’s knowledge about cervical cancer screening [25]. Based on this concept, the present study found that there is a significant association between Employment history and the rate of knowledge. A study done on 265 women from Baghdad city by Hasan et al., revealed similar results [26]. Furthermore, data from other studies in Africa, and nearby countries had the same outcomes [27, 28].

Almost two-thirds (64%) heard about cervical cancer. This outcome is inferior to that of Tanzania and Yemen, where (83.1 % and 80.6 %), respectively, knew about cervical cancer [29, 30].

The findings revealed that only (40.7 %) of women heard about Pap smears even though most of them know about cervical cancer; this is so far from the results obtained from Arab Gulf countries, which were (65 %) in Bahrain, (76%, 75%, and 67%) in Qatar, United Arab emirate and KSA respectively [31, 32].

Between (4% and 21%) of attendees correctly answered questions about the details and requirements of the technique, reflecting inadequate knowledge in this study. The results are dissimilar from those from research by Shrestha in Norway (2014), which revealed that (53.0 %) were aware of the benefits of screening and it is a screening test; the same study revealed that (34.0%) of women were aware that screening must be done 10–20 days before menstruation [33].

In general, the majority of research participants (74.5%) have poor knowledge about Pap smear testing and cervical cancer, while only (10.5%) had good knowledge. About half of the respondents were unaware of the signs and symptoms of cervical cancer. Women who are uninformed of the signs and symptoms of cervical cancer are more likely to be unaware of the need for routine Pap screening tests, which increases the likelihood that they may initially arrive with advanced illness [34].

Furthermore, only one-third (33.5%) of women included in this study were oriented about the possible risk factors of cervical cancer. Similarly, just a tiny proportion of participants in research in Ghana knew that sexual activity was a risk factor for cervical cancer [35], whereas (69.7%) of women in Estonia were aware of this relation [36]. Women must be aware of the risk factors for cervical cancer since ignorance of these variables may reduce the number of Pap screening tests that they undertake [37].

Despite the high prevalence of cervical cancer, similar studies done elsewhere also revealed that women in Kinshasa, Congo, Nigeria, and Botswana had poor levels of awareness of the disease [38, 39]. On the other hand, Surveys from nearby countries, such as Iran, Kuwait, and Turkey, also showed significantly higher rates of knowledge than those in our study [40, 41]. The first stage in the lengthy process of conditions to achieve a reduced incidence and mortality is to increase women's awareness.

Married women, having more than five children, and the use of contraceptive pills, are all associated with increased knowledge of women about cervical cancer screening in this study. This is in line with a study by Butho et al. that discovered married women in Portland and Jamaica had a two-fold higher Pap smear prevalence than unmarried women. The reason for this can be husband support [42].

Many previous studies showed that a positive family history of cervical cancer is an important influencing factor for women to improve their knowledge as well as attend cervical cancer screening programs [43]. In this study, the result showed that there is a significant association between a family history of cancer and the female’s knowledge.

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In this study, (62.75%) had a good attitude regarding cervical cancer screening. Surprisingly, about (42%) were unsure about their involvement in the cervical cancer screening program even after getting full information about it.

Similar results were obtained from a study done in Saudi Arabia in which, more than half of the women thought that cervical cancer might be prevented with early diagnosis and agreed to take part in a screening test (65). Our results were higher than the findings from the Nepalese study, which found that (38%) of their population had an adequate attitude toward cervical cancer screening [44].

A systematic review of 19 published studies from different sites of the world, including Europe, Asia, and the Middle East revealed that although (40.2%) of respondents had a favorable attitude toward cervical cancer screening, there is still a disconnect between perception and reality [45].

The practice of a person is influenced by their beliefs and understanding of the causes and consequences of a certain condition. Only 11 (2.75 %) of the 400 women in our research obtained Pap smear tests at least once in their entire life, and this is similar to results obtained from studies in Ghana (0.8%) [46].

The former findings regarding cervical cancer screening practice are much lower than that reported by a study in Baghdad by Tiba and her colleague (25%) and other Arab countries (Bahrain, Qatar, Saudi Arabia, Kuwait, United Arab Emirate), which range from (20%) to more than (40 %) [47-52].

Data from the developed countries also showed some variability in practice regarding screening; it was only (5.2 %) for women in Switzerland [42, 53], in comparison to (33 %) of women in Germany [54, 55].

Investigating the factors affecting women’s knowledge is an important aspect. There is a need for such information given the lowest percentage of women in our survey who stated refusing to get a pap test (20%). Two significant obstacles—the absence of symptoms and the lack of knowledge—represent (25% and 45%) of the total difficulties in his study, respectively. Another suggested cause is the expected embarrassment of conducting a test, which is an unpleasant operation [56, 57].

In this study, the lack of testing and inconsistent screening practices may be caused by the ineffective transmission of proper information about Pap smears and cervical cancer screening. The sources of information also contribute to successful knowledge transfer. For instance, spreading information about Pap screenings and cervical cancer may be helped by the use of mass media, health programs, and speeches [58, 59].

In this study, the majority of females heard about the screening from social media, in comparison to Ibrahim et al., a study in which, relatives and friends were the major sources [60-62].

Conclusion

Just 10.5% of the 400 women surveyed knew enough about cervical cancer screening procedures, and 2.75 percent had Pap smears. Participants showed inadequate cervical cancer screening habits and knowledge. The majority, however, showed a favorable opinion toward it. Fare was 13.0% and attitude was decent at 62.75%. The participants' average age was 34.07± 11.21. For 31.1% of participants, social media was the primary source of information about cervical cancer screening tests. a number of false beliefs about screening tests and cervical cancer. Knowledge and the age of the research group are significantly correlated. Knowledge was significantly correlated with employment, family history of cancer, and educational attainment.

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