

Knowledge, attitudes and practices toward cervical cancer and screening among sexually active Saudi females visiting a primary care center in Saudi Arabia

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ABSTRACT

Background/Aim: Women's knowledge of cervical cancer (CC) and awareness of screening procedures are important to improve adherence and reduce mortality. This study was conducted to determine the knowledge, attitudes, and practices toward cervical cancer and screening among sexually active Saudi females visiting a primary care center in Riyadh, Saudi Arabia. **Methods:** We conducted a cross-sectional study among sexually active Saudi females who visited the primary care center of our institution using a self-administered survey questionnaire between July and December 2020. **Results:** Six hundred and one Saudi women participated in the survey with a mean age of 34.0 ± 10.8 years. Three in four women (75.7%) were aware of cervical cancer and 325 (54.1%) believed that doing a Paps smear helped them diagnose and prevent CC. However, 479 participants (79.7%) do not see the need to go for CC screening ($n = 199$, 41.5%) and 113 (23.6%) had not heard of Paps smear screening. There were 109 women (18.1%) who has good knowledge of cervical cancer and screening and 492 women (81.9%) had poor knowledge. **Conclusion:** There was a high proportion of women with poor knowledge and awareness about cervical cancer and screening. Most women do not feel the need to undergo screening. Primary care physicians and healthcare providers should revisit the implementation of policies or information dissemination of programs and materials to increase awareness and knowledge for cervical cancer screening and vaccination throughout primary healthcare centers.

Keywords: Attitudes, cervical cancer, knowledge, practices, screening

Introduction

The 2020 GLOBOCAN reported a worldwide increase in the prevalence of cervical cancer (CC) with 604,000 new cases and 342,000 deaths. It remained the fourth most commonly diagnosed cancer and the fourth leading cause of cancer death among women.^[1] The World Health Organization (WHO) projected the increase of CC to 700,000 between 2018 and 2030, with the annual number of deaths projected to increase from

311,000 to 400,000.^[2] In 2019, various gynecologic societies and WHO considered a global strategy to accelerate the elimination of CC with measurable goals and targets.^[3] These included continued vaccination, screening, and treatment programs.^[2-4]

Screening for CC has been regarded as one of the strategic approaches to early detection of cervical cancer. Studies have shown that screening obviates the development of CC into its later stages and the institution of early management can delay the progression into the more advanced stages.^[5] Screening for CC was recommended for women with average risk at ages 25 – 65 years toward primary human papilloma virus (HPV) screening every 5 years since it was regarded as a more sensitive test for cancer precursor detection and risk stratification.^[6,7] A

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US study showed that CC screening showed college-educated women, women with a regular source of care, women who frequently consulted a physician, women who had health insurance, and women had a higher level of monthly income had more cervical cancer screening compared to their counterparts.^[8] A high rate of Pap screening coverage drop was observed in many countries (30% in Brazil, 18.17% in Ethiopia, 10% in the USA, and between 5 and 59.7% in many Asian countries) and many women were out of date for regular screening.^[9-12] Many women still do not participate in cervical cancer screening in many countries.

The most common barrier to CC screening is knowledge of CC and on the benefits of screening.^[13-15] Women generally do not undergo CC screening because of poor knowledge about CC as well as stigma, embarrassment, or anxiety related to the screening procedure.^[13]

Women who were highly educated were found to be 122 times more likely to be interested in CC screening.^[15] Knowledge of screening and management guidelines are important to improve adherence and avoid both over- and under-use of screening and colposcopy.

Although the prevalence of CC is relatively lower (<3% prevalence of all female cancers) compared to the worldwide prevalence, the overall 3-, 5-, and 10-year reported survival rates were 64, 55, and 40%, respectively.^[16] Another study showed that less than 10% of the surveyed Saudi women had good knowledge and awareness, and 70% had poor knowledge and awareness of CC risk factors and screening.^[17] On the contrary, another recent study showed a high awareness (84%) of CC but only 8% gave a history of CC screening.^[18] A study conducted among 2,200 women in Saudi Arabia by Alnafisah *et al.*^[19] in 2019 showed 79% with moderate knowledge about CC symptoms, prevention, and screening, and 84.7% of them had not undergone a Pap smear test.

Several similar studies aimed to determine the knowledge, attitudes, and practices of Saudi women toward CC and screening. However, we wanted to document the updated knowledge, attitude, and practices of Saudi women toward CC and screening to see if those previous research and institutional promotion campaigns had made an impact on such knowledge, attitude, and practices. We conducted this study to determine the knowledge, attitudes, and practices toward CC and screening among sexually active Saudi females visiting the primary care center in a tertiary center in Riyadh, Saudi Arabia.

Material and Methods

We conducted a cross-sectional study among sexually active Saudi females who were visiting the primary care center in Riyadh, Saudi Arabia, using a self-administered survey questionnaire between July and December 2020. The included participants were 18 years old and above. We excluded

patients who were healthcare professionals and those who had a history of CC. The sample size was calculated based on the formula $n = Z^2 P (1-P)/d^2$, where n is the sample size, Z is the statistic for the level of significance, P is the expected prevalence and d is the allowable error. The calculated sample size was 385.

The survey questionnaire was adapted from the validated questionnaire used by Alnafisah *et al.*^[19] which included sociodemographic information of the participants, questions on knowledge of CC and its signs and symptoms, knowledge about the risk factors for CC, knowledge and attitudes toward CC prevention, and perceived barriers to CC prevention and screening. Ethical approval was obtained from the Institutional Review Board of our institution in Riyadh, Saudi Arabia. With 27 items used for the assessment of knowledge of CC, the lowest possible score was 0 (with all questions answered incorrectly) and the highest possible score was 27 (with all questions answered correctly). The mean knowledge score was taken (mean score of 16) and poor knowledge was set at least <10% of the mean score (that is 14). Statistical analysis was done using the Statistical Package for Social Sciences (SPSS) version 23.0 (SPSS Inc., IBM, Armonk, New York, USA). Responses to the survey questions were expressed as numbers and percentages. Chi-square and independent t-tests were done to determine significant differences between categorical and continuous variables. A P value of < 0.05 was considered statistically significant.

Results

Six hundred and one Saudi women participated in the survey with a mean age of 34.0 ± 10.8 years. Three hundred and ninety-one participants (65.1%) were married and 388 (64.6%) were college educated. There were 200 women (33.3%) who had a history of contraceptive use, 125 (62.5%) of which were contraceptive pills. Fifty-nine women (9.8%) were smokers. There were 38 (6.3%) women who had a family history of cervical cancer. Table 1 shows the detailed sociodemographic profile of the participants.

Table 2 shows the responses to questions about knowledge about CC, knowledge of signs and symptoms of CC, and knowledge of the risk factors for CC of 601 Saudi women. Three in four women (75.7%) heard of CC. The majority of these women ($n = 573$, 95.3%) thought that CC can be treated and 540 (89.9%) thought that it is a preventable disease. Three hundred and twenty-five participants (54.1%) believed that doing a Paps smear helps them diagnose and prevent CC. However, less than half of the participants ($n = 253$, 42.1%) knew that a Paps smear should be done every 3 years. Less than half of the participants knew any of the symptoms of CC. One hundred and forty-three participants (53.1%) believed that a positive family history of CC predisposes one to CC. There were less than 50% of women surveyed who believed that the use of contraceptive pills for a long time, smoking, HIV, multiple sexual partners, smoking, and HPV are risk factors for CC.

Table 1: Sociodemographic profile of the 601 survey participants

Variables	Mean±SD	n (%)
Age in years	34.0±10.8	
Age groups		
≤30 years old		262 (43.6)
31-45 years old		243 (40.4)
>45 years old		96 (16.0)
Marital status		
Married		391 (65.1%)
Single		173 (28.8%)
Divorced		27 (4.5%)
Widow		10 (1.7%)
Educational level		
Non-educated		4 (0.7)
High school		141 (23.5)
College		388 (64.6)
Postgraduate		51 (8.4)
Others/not indicated		17 (2.8)
Use of contraception, yes	200 (33.3)	
Pill	125 (62.5)	
Copper IUD	30 (15.0)	
Implants	5 (2.5)	
Hormonal IUD	17 (8.5)	
Patch	6 (3.0)	
Tubal ligation	2 (1.0)	
Others	15 (7.5)	
Smoking, yes	59 (9.8)	
Cigarette	12 (20.3)	
Electronic cigarette/vape	10 (17.0)	
Hubble bubble	35 (59.3)	
Others	2 (3.4)	
With family history of cervical cancer	38 (6.3)	

There were 479 participants (79.7%) who had not gone for CC screening. The most common reason was that they did not see the need to go for CC screening (n = 199, 41.5%) followed by “not heard of Paps smear screening” (n = 113, 23.6%) and screening is painful (n = 82, 17.1%). [Figure 1] The most common source of information among the participants was social media (n = 214, P = 35.6%) [Figure 2].

There were only 109 women (18.1%) who had good knowledge of CC and cervical screening and 492 women (81.9%) had poor knowledge of CC and screening. The level of knowledge of CC was significantly correlated with the level of education (r = 0.101, P = 0.014). There were significantly more women who had a college degree and above who had good knowledge than those who had high school and less education (n = 91/109, 83.5% versus n = 16/109, 14.7%, P = 0.016). There were no significant differences in the proportion of patients who had poor and good knowledge based on marital status and having a family history of CC (P = 0.162 and P = 0.667, respectively). There was also no significant differences in the mean age of participants as to their knowledge of CC (poor knowledge = 34.5 ± 11.1 years versus good = 34.0 ± 9.5 years, P = 0.696). The level of knowledge was also significantly correlated with the feeling of embarrassment toward CC screening (r = -0.119, P = 0.009), and Paps smear is a painful procedure (r = 0.093, P = 0.043).

Table 2: Responses to questions on knowledge of cervical cancer, screening, symptoms, and risk factors among 601 Saudi women

Questions	n (%)
Knowledge of cervical cancer	
Heard about cervical cancer, yes	455 (75.7)
Knows anyone with cervical cancer, yes	55 (9.2)
Thinks that cervical cancer can be treated, yes	573 (95.3)
Thinks that cervical cancer can be prevented, yes	540 (89.9)
Heard about human papilloma virus (HPV), yes	125 (20.8)
Heard about Paps smear, yes	439 (73.0)
Prevention of cervical cancer*	
Paps smear	325 (54.1)
Early diagnosis	351 (58.4)
HPV vaccination	139 (23.1)
Use of condom during sexual intercourse	49 (8.2)
Quit smoking	174 (29.0)
Regular check-up	494 (82.2)
Use of barrier contraceptives	18 (3.0)
Frequency of doing Paps smear test	
Every year	321 (53.4)
Every three years	253 (42.1)
Once in a lifetime	27 (4.5)
Thinks that HPV vaccine is effective for prevention of cervical cancer	450 (74.9)
Knowledge of symptoms*	
Post-menopausal bleeding	271 (45.1)
Bleeding and pain during sex	232 (38.6)
Excessive vaginal discharge	174 (29.0)
Bleeding between menstrual periods	252 (41.9)
Others	139 (23.1)
Knowledge of risk factors for cervical cancer*	
Use of contraceptive pills for a long time	260 (43.3)
Smoking	164 (27.3)
Sexually transmitted disease	244 (40.6)
Family history of cervical cancer	319 (53.1)
Human immunodeficiency virus	143 (23.8)
Early onset of sexual activity	46 (7.7)
Multiple sexual partners	290 (48.3)
Human papilloma virus	176 (29.3)
Living with a cervical cancer patient	15 (2.5)

*Multiple response question

Discussion

This study aimed to determine the knowledge, attitudes, and practices toward CC and screening among sexually active Saudi females. Although CC is relatively uncommon in Saudi Arabia, it is well-known that women of the reproductive age and those who are sexually active are most vulnerable and are the most exposed to the development of CC.

This study showed that the majority of our respondents (81.9%) had poor knowledge of CC and CC screening. Our study showed a higher rate of poor awareness and knowledge with rates from India (69.39%), China (48.9%), Iran (29.1%), Qatar (15-20%), and Kuwait (47.7%) to name a few.^[20-24] The wide variations in the reported rates may be due to the differences in the study designs and the characteristics of the respondents, the questionnaire survey as well as other factors that may have affected the outcome of the statistical result. However, based on how much

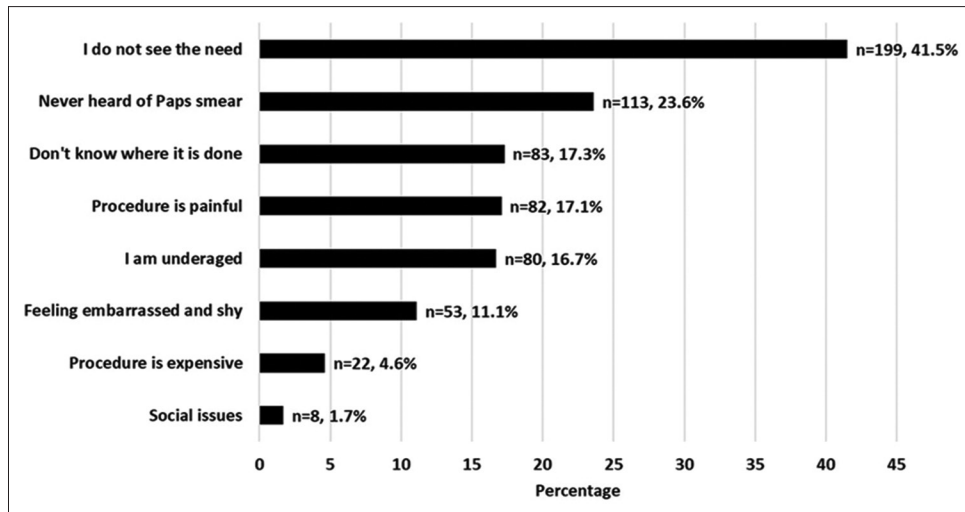


Figure 1: Reasons why 479 of 601 women participants do not go for CC screening

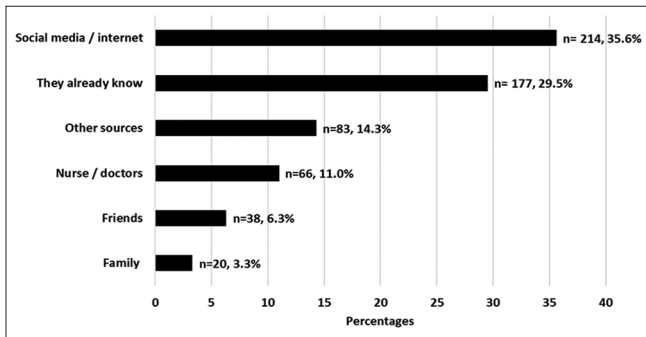


Figure 2: Sources of information and knowledge of CC among 601 participants 177

percentage of our women who have heard of CC, our results were far better at 75.7% compared to the countries that were mentioned earlier.^[20-24] Furthermore, our study showed that 54.1% of our respondents believed that doing a Paps smear helps them diagnose and prevent CC, although 79.7% of these women have not gone for CC screening, which was far better than the approximately 95% of surveyed women in Jordan who had never undergone a Paps smear, but our rate had a higher percentage of non-screening compared to other Middle East countries like Kuwait (63%) and Jordan.^[25-27] Many previous studies conducted in Saudi Arabia showed high rates of non-screening for CC.^[17,28-30]

Another finding of this study was that of the 479 participants who did not undergo CC screening, 199 perceived that Paps smear was not necessary and some 113 participants had not even heard of Paps smear as a screening tool for CC. This is alarming because it reflects poor knowledge and poor attitude toward CC and CC screening. In contrast to the study done by Sait *et al.*^[28] in 2019, 67.6% of participants were aware of the Paps smear test, but only 16.8% had been screened mainly due to lack of awareness. In another study conducted in Saudi Arabia, 42.8% refused to undergo a Paps smear because they did not know someone who had tried a Paps smear.^[19] Several other major reasons for not undergoing Paps smear such as fear and painful

procedure were not expressed much by our survey respondents. Instead, a majority of our participants said that “they do not see the need for CC screening.”

The importance of CC screening apart from knowledge about CC, its risk factors, and its clinical signs and symptoms has to be relayed to women who are of reproductive age. The importance and benefit of vaccination against HPV as a preventive measure have to be consistently allied to primary health care services to decrease the morbidity and mortality of CC. Having a high level of awareness or knowledge of CC has to be translated to prevention and action toward vaccination and increased uptake of screening procedures such as Paps smear. This has to be done in our population since our study results showed that despite 54.1% believing that doing a Paps smear helps them diagnose and prevent CC, many still do not undergo CC screening for reasons that can easily be addressed by proper information-dissemination and education of these women. Furthermore, this study highlighted which particular women sectors needed a heightening drive for such information-dissemination campaigns, i.e., lower educated women and women in past their 40s.

Comparing our results with similar previous studies conducted in Saudi Arabia showed that a high proportion of women still have poor knowledge, poor attitude, and poor awareness about cervical cancer and screening. This implies that the promotion campaigns toward awareness, knowledge, and actions set by our authorities have not been fully met. Primary care physicians who are on the frontlines of care and who are in contact with women in the rural areas have a greater advantage of promoting awareness, vaccination campaigns, and re-education toward CC awareness and CC screening. Primary care physicians should be encouraged to educate and promote awareness among Saudi women, and educational intervention programs should be part of their training and expertise. Despite so many papers that

have been published on CC and screening, there seems to be a continuous rise in the prevalence of CC as a major cause of mortality among women, and Saudi Arabia is not spared from this. Despite so much research on the need to educate women on CC and screening procedures who are vulnerable and who are at high risk for CC, there is still a high proportion of women who do not go for screening. This will be a never-ending story; thus, we recommend that strategies are actively implemented to screen, vaccinate, and continuously educate women on CC and screening to the grassroots through schools, universities, healthcare providers, and social media. Primary care physicians and healthcare workers in the suburbs and rural areas should incorporate in their program a regular home visit to deliver the message to increase awareness, knowledge, and uptake of CC screening. All of these measures will improve CC awareness and increase the uptake of CC screening, and hopefully decrease the morbidity and mortality of CC in the future.

Since this study was conducted in a single primary care center of an institution, this may not reflect the entire picture of the general female population of Saudi Arabia when it comes to CC and CC screening which serves as a limitation to the study. However, despite this, we were able to deduce new information such as many women do not find the need to undergo screening, which is a major barrier to CC screening. It would certainly be a demanding task for doctors and healthcare providers to institute measures to offer women CC screening, education, vaccination, and follow-ups, however, if such steps will be taken seriously and consistently, step by step, the desired outcome will be achieved.

Conclusion

The current study demonstrated a high proportion of poor knowledge and awareness about cervical cancer and screening among the surveyed Saudi women. The most common reason for refusal to subject themselves to screening is that they do not feel the need to undergo screening. Primary care physicians and healthcare providers should revisit the implementation of policies or information dissemination of programs and materials to increase awareness and knowledge for cervical cancer screening and vaccination throughout the primary healthcare centers.

Key points and take-home messages

- There is still a high prevalence of poor knowledge of cervical cancer, poor attitude, and poor practice toward cervical screening among Saudi women attending the primary care centers despite several types of research and institutional efforts that are recommended to increase awareness and promote screening for cervical cancer. Many women do not want to undergo CC screening because they do not feel the need to undergo screening.
- A dedicated approach is required particularly among primary care physicians to include in their program the promotion and education of women regarding cervical cancer and the importance of CC screening. It must be part of primary care physicians' discussion with their patients who are in the

reproductive age, re-educate and heighten awareness about cervical cancer and discuss the benefits of CC screening and vaccination.

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Conflicts of interest

There are no conflicts of interest.

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