

# Attitudes, knowledge, and practices in relation to cervical cancer and its screening among women in Saudi Arabia

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## ABSTRACT

**الأهداف:** تقييم المعلومات والوعي والممارسة المتعلقة بسرطان عنق الرحم، كيفية الكشف عنه، ومسبباته، وطرق الوقاية منه بين السيدات اللواتي يعشن في المملكة العربية السعودية

**الطريقة:** وزع 600 استبيان شخصي بشكل عشوائي على نساء تم اختيارهن من طبقات مختلفة من عامة السكان في جدة – المملكة العربية السعودية. تم إرسال هذا الاستبيان أيضاً إلى معلمات المدارس، الأقارب، الأصدقاء، بالإضافة إلى مقابلات مباشرة للمريضات اللواتي قمنا بزيارة العيادات الخارجية خلال انتظارهم لمواعيدهم – مستشفى جامعة الملك عبد العزيز خلال الفترة من شهر يناير 2008م حتى مارس 2008م. كان هناك 500 مستجيب (83.3%).

**النتائج:** كانت المعلومات عن فيروس الورم الحليمي البشري (HPV) كعامل مسبب لسرطان عنق الرحم و التطعيم ضد فيروس HPV معروفة عند 72 (14.4%) و 49 (9.8%) من المستجيبات. بينما كان 338 (67.6%) من المستجيبات على علم بلطاخة بابانيكولا، أجرت 84 سيدة فقط (16.8%) هذا الاختبار. أن السبب الأساسي لعدم إجراء لطاخة بابانيكولا هو عدم المعرفة.

**خاتمة:** أن مستوى المعرفة بسرطان عنق الرحم لدى النساء في المملكة العربية السعودية أقل بكثير من المستوى الموجود في الدول المتقدمة. هناك حاجة لتثقيف و تعزيز الوعي عن سرطان عنق الرحم لدى السكان

**Objectives:** To assess the knowledge, attitude, and practices related to cervical cancer screening, and its underlying etiology and preventive measures among women living in the Kingdom of Saudi Arabia.

**Methods:** Six hundred self-administered questionnaires were distributed to randomly selected women from different groups in the general population of Jeddah, Kingdom of Saudi Arabia. These questionnaires were sent out to school teachers, relative, friends, as well as, through direct interview of patients visiting the outpatient clinic while awaiting for their

appointments at the King Abdul-Aziz University Hospital from January to March 2008. There were 500 respondents (83.3%).

**Results:** The knowledge of the human papilloma virus (HPV) as an etiological agent for cervical cancer was expressed by 72 (14.4%), and the HPV vaccine by 49 (9.8%) of the respondents. Whereas, 338 (67.6%) of the respondents were aware of the Pap smear, however, only 84 (16.8%) had undergone the test. The main reason for not having a Pap smear was the lack of awareness.

**Conclusion:** The awareness on cervical cancer among women in Saudi Arabia is far behind that in the developed countries. There is a need to educate and promote awareness of cervical cancer in this population.

*Saudi Med J 2009; Vol. 30 (9): 1208-1212*

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*Received 8th June 2009. Accepted 30th July 2009.*

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Carcinoma of the cervix is a major public health problem throughout the world. Cervical cancer is the most common cancer of the female genital tract, and accounts for approximately 250,000 deaths per year worldwide, most of which occur in developing countries.<sup>1</sup> A significant drop in its incidence has been reported in developed countries as a result of intensive cervical screening programs.<sup>2-4</sup> Evidence from epidemiological studies, coupled with recent advanced molecular biology findings have established a strong causal association between infection by certain serotypes particularly 16, and 18 of the sexually transmitted human papilloma virus (HPV) and cervical cancer.<sup>5</sup>

Regular Papanicolaou's (PAP) smear screening has reduced the incidence of mortality from cervical cancer tremendously.<sup>3</sup> This simple screening test can detect pre-invasive, and invasive disease process in very early stages, at which it can be prevented, treated, and cured. This screening method has been proven to reduce the incidence and mortality from cervical cancer up to 80% in developed countries.<sup>6</sup> Therefore, this test is recommended for all sexually active females worldwide.<sup>7</sup> In the United Kingdom, there are organized screening services that are provided free of charge to all women 20-64 years of age.<sup>8</sup> In the Kingdom of Saudi Arabia, cervical cancer occurs in 4.1/100,000 females in the population. It accounts for 7% of all newly diagnosed cancers in females, and is the eighth leading cause of cancer death in Saudi females.<sup>9</sup> An intensive screening program for cervical cancer is not well established, and despite the availability of the Pap smear test among different health sectors, we noted that the number of cases of cervical cancer has been increasing over the past 2 decades. The aim of this study was to determine the level of awareness of Saudi women regarding cervical cancer screening, their sources of information, and their general attitudes toward this problem.

**Methods.** This cross-sectional study involved the distribution of 600 questionnaires to randomly selected divorced, widowed, or married women from different groups in the general population of Jeddah, Kingdom of Saudi Arabia. These questionnaires were sent out to school teachers, relative, friends, as well as, through direct interview of patients visiting the outpatient clinics, while the patients are awaiting their appointments at the King Abdul-Aziz University Hospital from January to March 2008. Participants answered coded and open-ended questions on the self-administered questionnaire that assessed their knowledge, attitudes, and practices regarding cervical cancer screening, and HPV. Each questionnaire was semi-structured, consisting of 16 questions. The first 8 questions on the questionnaire gathered background information on the participant. The next 8 questions were divided into those assessing the participant's knowledge, attitudes, and practices regarding cervical cancer and screening, including their understanding of its underlying etiology and preventive measures (Table 1). After the completion of the last 8 questions, women were asked to read the given educational pamphlet on Pap smear and HPV vaccine, and then each are asked whether she would be willing to undergo the Pap smear test, and if she would allow her daughter to receive the HPV vaccine. This was explained carefully in the introductory statement. Most of the women completed the questionnaire,

and read the pamphlet without assistance. A research assistant assisted a few who had difficulties. Completed questionnaires were obtained from 500 respondents (83.3%). The Bioethical and Research Committee of the King Abdu-Aziz University Hospital approved this study.

**Statistical analyses.** Data entry and analyses were undertaken using the computer software Statistical Package for Social Sciences (SPSS Inc., Chicago, IL., USA) version 2002. The quality of the entry process was checked by reentering a random sample of 10% of the cases, and running frequencies to check for extreme values. In the analysis, appropriate frequencies were generated. As the results of this knowledge, attitudes, and practice study are mainly qualitative in nature, descriptive results are presented. The results are grouped under knowledge, attitudes, and practice areas. Differences between categorical variables were analyzed using the Chi-square test, and *p*-values of less than 0.05 were considered significant.

**Results.** Five hundred of the returned questionnaires were suitable for analysis. The respondents consisted of 339 (67.8%) Saudi women, and 161 (32.2%) expatriates who live in Saudi Arabia from over 16 countries, mainly from Yemen, Egypt, and Pakistan. Of the 500 respondents, 210 (42%) were public servants, 140 (28%) were teachers, 60 (12%) were nurses, and 59 (11.8%) were physicians. The 31 (6.2%) remaining respondents did not state their occupation. Three hundred and three (60.6%) of the respondents were working, and 197 (39.4%) had no job. The overall median age was 42 years. We did not include single women in this study. Those included consisted of 42 (8.4%) divorced or

**Table 1 -** Questionnaire evaluating Saudi public awareness on cervical cancer and screening.

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Age
Nationality
Smoking history
Have you had any major medical illness that required hospitalization?
Level of education
Occupation
Current working status
Parity
Have you ever heard about the virus that causes cervical cancer?
Have you ever heard about the vaccine that prevents cervical cancer?
Have you ever heard about screening tests for cervical cancer?
What was your source of information about cervical screening?
Have you ever had a Pap smear?
Did you ask your doctor to do it for you?
Did your doctor offer it to you?
What was the reason for not having the test done?
If you were given a pamphlet about the Pap smear and vaccine for HPV:
Would you do the test?
Would you let your daughter receive the HPV vaccine when she is in school?

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widowed women, and 458 (91.6 %) married women. Nulliparous women constituted 108 (21.6%) of the respondents, while 337 (67.4%) had 1-4 children, and 55 (11%) had more than 4 children. The level of education among respondents is shown in Table 2. The knowledge of the HPV as an etiological agent for cervical cancer as expressed by the respondents, and awareness of the HPV vaccine is shown in Table 3. Three hundred and thirty-eight of the respondents were aware of the Pap smear test, whereas 162 were unaware of it (Table 3). Of those who were aware, 188 obtained information from books or magazines (media). Only 120 received information on cervical screening from their doctors (Table 4). Only 84 (16.8%) of the respondents had ever had a Pap smear. Of these, 47 stated that their physician offered it. We also evaluated potential differences in levels of awareness, and/or practice regarding cervical screening (Pap smear), and the HPV vaccine between groups of different ages. Group I consisted of 330 (66%) women aged 18-40 years and group II consisted of 170 (34%) women aged 41-66 years. Compared with group I, a significantly greater percentage of women in group II had previously been aware or undergone a Pap smear ( $p < 0.0001$ ) (Table 5). However, the level of awareness on HPV and the HPV vaccine did not differ between groups (Table 5). Table 6 presents the reasons that the 416 respondents who had not previously had a Pap smear did not undergo the test. After we gave each participant an educational pamphlet on cervical cancer, cervical screening, and the HPV vaccine, 292 (58.4%) of the women accepted the concept of screening, and expressed their willingness to have a Pap smear. In addition, the majority of the women ( $n=381$ , 76.2%) were happy with the introduction of the HPV vaccine to our community, and stated that they are willing to have their daughters receive it.

**Discussion.** Women in the third world are at risk for some serious health problems in every stage of life. These include human immunodeficiency virus/acquired immunodeficiency syndrome, high maternal mortality rates, and cancer of the cervix later in life. Cervical cancer is a preventable disease, and a key aspect of its prevention is the detection of the premalignant lesion by cervical screening.<sup>2</sup> The major findings of the present study showed that 67.6% of the respondents were aware of the cervical screening (Pap smear), however, only 16.8% had ever had the test. Most of those who were aware of the screening had got their information from the media or doctors. The major drawback of this study is the high percentage (83.8%) of respondents who had tertiary education, which is not usually expected in a typical population of a developing country. Roberts et al<sup>10</sup> found a positive relationship between the education

**Table 2** - Level of education.

Level of education	n	(%)
Illiterate	12	(2.4)
Elementary school	48	(9.6)
High school	21	(4.2)
Medical university degree	109	(21.8)
Non-medical university degree	310	(62)

**Table 3** - Level of awareness on Pap smear among respondents (N=500).

Level of awareness on Pap smear	n	(%)
<i>Previously aware of the Pap smear test</i>		
Yes	338	(67.6)
No	162	(32.4)
<i>Previously aware of HPV that causes cervical cancer</i>		
Yes	72	(14.4)
No	428	(85.6)
<i>Previously aware of the HPV vaccine</i>		
Yes	49	(9.8)
No	451	(90.2)

HPV - human papilloma virus

**Table 4** - Sources of information on cervical screening among 338 aware respondents.\*

Sources of information	n	(%)
Media	188	(55.6)
Relative	34	(10.05)
Friend	42	(12.4)
Doctor	120	(35.5)

\*Few participants obtained their information from more than one source.

**Table 5** - Level of awareness and practice between age groups.

Questions asked on awareness and practice	Group I	Group II	P-value
Previously aware of cervical cancer screening test (Pap smear)	218	120	<0.0001
Previously aware of HPV vaccine	39	10	0.155
Previously aware of HPV that causes cervical cancer	56	16	0.064
Previously had a Pap smear	43	41	<0.0001

HPV - human papilloma virus

**Table 6** - Reasons for not having a Pap smear among 416 respondents.

Reasons	n	(%)
Lack of awareness	150	(36.1)
Not stated	140	(33.6)
Embarrassed /feeling shy	50	(12.1)
Not recommended by the physician	76	(18.3)

level and awareness of cervical screening. Thus, the level of awareness could be lower than what was found in this study where the level of education is lower.

Further analysis of our awareness data revealed that the level of awareness on Pap smear was less in the group of women aged 18-40 years compared with the group of women aged 41-66 years. In the absence of a systematic screening program, the expected practice is to opportunistically screen eligible women when they come to health care facilities for other reproductive services. In this opportunistic screening system, the onus is on the health care worker who handles the eligible women to offer each woman screening, or to refer her to a health care facility where screening can be carried out. Awareness of cervical cancer was high, but needs to be improved considering the increase in the prevalence of cervical cancer in the developing countries.<sup>1</sup> In this study, 85.6% of the women were not aware of HPV as a risk factor for cervical cancer. Therefore, the awareness campaign should be intensified through the popular means identified by students and other young people.<sup>11</sup> In this study, only 84 (16.8%) of the respondents had ever had a Pap smear and most of these was carried out more than 3 years ago.

Kim et al<sup>12</sup> conducted a study in Chicago in a sample consisting of 159 Korean-American women, 40-69 years of age. Twenty-six percent of the respondents had never heard of the Pap smear test. Only 34% of respondents reported having had a Pap smear for screening, while another 20.8% reported having had a Pap smear due to health problem. The most frequently cited reason for not having had a Pap smear was the absence of disease symptoms. Multiple logistic regression analyses revealed that education and usual sources of health care were significant factors related to having heard of, or having had a Pap smear. The findings from this Kim et al's<sup>12</sup> study had important implications for health practitioners and policy makers who serve this ethnic population. While 55% of women who did have a Pap smear in this study did so, because a health care worker asked them to do it, this rate is much lower than what is observed in developed countries.<sup>13</sup> The differences in the levels of awareness may be partly explained by educational status.<sup>10</sup> Education of the health care provider is important as demonstrated by the results of our study; 45% of the women who had undergone a previous Pap smear stated that their physician had not recommended it. Of those women who had not had a previous Pap smear, 18.3% stated that their physician had not recommended it.

Badrinath et al<sup>13</sup> conducted a study in the United Arab Emirates (UAE), in which they assessed the knowledge, attitudes, and practices of UAE female primary care physicians regarding cervical screening through a self-

administered questionnaire. Of the 98 physicians who participated in the study, only 40% reported ever having performed a Pap smear. The authors identified various training needs, and a training program on cervical screening is being developed based on the results of this study.<sup>13</sup> While we await a national screening policy to be advocated, greater public awareness should be created and physicians should make greater use of opportunistic cervical screening.

In conclusion, the knowledge on cervical cancer screening among Saudi women is far behind that in developed countries. There is a need to educate and promote awareness among Saudi women regarding cervical cancer screening and prevention. A national cervical cancer screening program needs to be implemented in Saudi Arabia. Regional cervical screening initiatives and strategies should be encouraged, and the primary health care system should be supported. Media-led educational intervention is also important. There is a particular need to educate and promote awareness among women with risk factors for cervical cancer. It is important to offer women emotional support, as they might be experiencing fear and anxiety on the results of the Pap smear. Until we achieve an appropriate level of screening, opportunistic screening needs to be carried out by encouraging all health care workers in other departments to refer all eligible women who come into their care for cervical cancer screening. When effective screening programs and treatment modalities exist, then follow-up is essential to avoid morbidity and mortality from cervical cancer.

**Acknowledgment.** *I would like to express my sincere thanks and appreciation to my dear wife and children for their great help and effort in collecting the data. Special thanks to my fellow Ahmad Al-Marastani for his support and help.*

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#### Related topics

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