Evaluation of women's knowledge, awareness and attitudes regarding cervical cancer screening in Makkah

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Abstract:
Background: Cervical cancer is considered the 4th most common cancer of women worldwide. It is the 10th most common cancer in Saudi women. Due to lack of well-organized screening program in KSA most cases of cervical cancer presented to health care services in late stage of disease. **Aim:** to assess the level of knowledge, awareness and attitude about cervical cancer and if the women had undergone screening for cervical cancer or not. **Subjects and Methods:** a questionnaire based cross-sectional study was conducted among the women attending the outpatient clinics in 3 health care facilities chosen randomly from all health care facilities in Makah. A sample size of 210 was calculated. Data was analyzed using SPSS Version 23 **Results:** majority of the women have poor knowledge about cervical cancer (86.2% [181/210]) taking their knowledge mainly from the internet not from doctors. Only (13.8% [29/210]) are aware about screening. Only 21.4% women had undergone screening while 79.9% have favorable attitude towards screening. Although 90% have positive attitude towards vaccination only1.9 % took the vaccine. **Conclusions:** Although majority of women had poor knowledge, majority have positive attitude towards screening and vaccination. Mass media and health care teams should be used to educate women.
Keywords: Cervical Cancer, Screening, Knowledge, Awareness, HPV vaccine.

INTRODUCTION:
Worldwide, cervical cancer is the 4th most common cancer in women with an estimated 570,000 new cases in 2018 representing 6.6% of all women cancer [1]. Cervical cancer is considered as the major cause of women mortality globally [2] with estimated 265,672 deaths in 2012 [3]. In Saudi Arabia, cervical cancer is the 8th common cause of female cancer aged 15 to 44 years [4]. The World Health Organization (WHO) has reported that 6.5 million women in Saudi Arabia aged 15 years and older are at risk of developing cervical cancer. Current estimates indicate that 152 women in Saudi Arabia are diagnosed with cervical cancer and 55 die from the disease yearly [5]. Human papilloma virus (HPV) infection is well-known as a significant major cause of cervical cancer [6] . HPV16 and HPV18 are reported to be linked with majority of low-grade CIN, however, the viral persistence produces the cellular changes leading to high grade CIN and invasive cervical carcinoma [7]. Eighty-nine percent of cervical cancers in Saudi Arabia

were concomitant with HPV infection and about 78.7% of HPV-positive tumors were caused by HPV16 and HPV18 [8]. A declining trend in the incidence of invasive cancer cervix has been reported in the developed countries during the last three decades owed to prevention through the widespread use of Pap smear as a sensitive screening tool [9] conversely, the prevalence of cervical cancer is growing in developing countries due to poor knowledge, mistrust of healthcare system and the great cost of anti HPV vaccine [10]. Although cervical cancer is not a major public health problem affecting females in Saudi Arabia, patients are diagnosed at late stage [11]. In many developed countries, initiation of cervical screening (pap smear) program, showed a major decline in incidence and mortality [12,13]. However, there are no well-established national cervical cancer screening or HPV vaccination programs.([14] As a result, the number of cervical cancer cases in Saudi Arabia has been increasing over the past years [15]. Limited studies in Saudi Arabia have been done on the awareness, knowledge, and attitude towards cervical cancer screening and HPV vaccine[14,15,16,17] . None of these studies was specific for Makkah population, In addition the awareness and knowledge of Pap test as a screening tool for cervical cancer among Saudi women is poor [18]. Although, the public knowledge of HPV is still low,[13,14]Two vaccines for HPV are available and clinical trials showed their high efficacy for prevention of HPV infection and Their associated disease [19]. The high mortality rate from cervical cancer could be reduced through a comprehensive approach that includes prevention, effective screening, early detection and evidence based treatment programs.

The aim of this study is to assess the level of public awareness, knowledge and attitudes towards cervical cancer screening and HPV vaccine among Saudi women in Makkah city, KSA

MATERIALS AND METHODS:

A Cross sectional study was conducted to assess of level of knowledge, awareness and attitude about cervical cancer and its prevention among women in Makkah city, KSA

Women attended health care system in Makkah (primary – secondary or tertiary health care centers and /or hospitals) were interviewed using a semi-structured questionnaire.

Women were included in the study if they are (18 - 65years old), Married, widow or divorced and permanently living in Makkah and excluded if they had cervical cancer or performed hysterectomy due to any cause. Subjects were chosen by Cluster random sample, as all health care facilities (centers and hospitals) were listed, then three health care families were Selected (Umm Alqura academic medical center, Maternity and Children hospital, and security force hospital) by Cluster random sample. For each selected health care facility, data was collected by simple random sample to fulfill the required sample size.

Sample size was calculated as 420 women based on a study conducted in Riyadh City on Public Awareness and Knowledge of Cervical Cancer Screening with 53.9% awareness and according to the following equation

$N = Z^2 pq/d^2$

Where q = 1 – p, 95% confidence interval for proportion p with margin of error d 0.05 [18].

Semi-structured interviews were conducted to identify Socio demographic as (age, sex, education, occupation, residence, marital status, and economic level, etc), Health data (past and family history of cervical cancer), Data about knowledge on cervical cancer (symptoms and risk factors, related causes, etc) and Data about knowledge and awareness on cervical cancer prevention (screening, follow-up, vaccination and the source of information).

Statistical analysis:

Data was analyzed by using IBM advanced SPSS statistical package version 23. Data was presented using descriptive statistics in the form of frequencies and percentages for categorical variables, and means and standard deviations for quantitative variables. Quantitative continuous data was compared using Student t-test in case of normal distribution. Qualitative variables were compared using chi-square test. To identify the independent predictors of knowledge and awareness towards cervical cancer, multiple logistic regression analysis was used. Statistical significance was set at p-value <0.05.

Ethical Considerations:

The current study was approved by the Faculty of Medicine [Medical Ethics Board], UQU. A simple and clear explanation of the Research aim and Procedure was provided to the study population. Written and/or verbal consent was obtained from study population. Data Confidentiality was guaranteed. All data was solely used in the proposed research.

RESULTS:

210 women participated in this study. Table (1) is showing the knowledge and awareness levels about cervical cancer and Pap smear as screening test. 87.1 % of the ladies show poor awareness about cervical cancer. Women aged between 30 and 50 have a better knowledge about cervical cancer than other age groups (P=0.01). However, we found no statically relationship between working, educational level and cervical cancer knowledge. Working ladies are more aware about cervical cancer screening (p= 0.005). Although, we found no statically relationship between age group, educational level and awareness about cervical cancer screening. Table (2) is showing Cancer screening awareness and the attitude toward HPV Vaccines. There was no statically relationship between age groups, educational level, working and the attitude toward HPV Vaccines.

Table (1) is showing the knowledge and awareness levels about cervical cancer and Pap smear

Total knowledge about cervical cancer (n=210)	
Poor	183 (87.1%)
Good	27 (12.9 %)
knowledge about symptoms (n=210)	
Yes	98 (46.7%)
No	112 (53.3%)
knowledge about risk factors (n=210)	
Yes	102 (48.6%)
No	108 (51.4%)

knowledge about risk factors (n=210)	
Yes	32 (15.2%)
No	178 (84.8%)
Knowledge about methods for prevention (n=210)	
Yes	82 (44.3%)
No	117 (55.7%)
How did you know about methods for prevention (n=82)	
Magazine	7(8.5%)
TV	12(14.6%)
Friends	20 (24.3%)
Internet	13(15.8%)
Doctors	18(21.9%)
Other	12(14.6%)
Did you hear about Pap smear (n=210)	
Yes	29 (13.8%)
No	181 (86.2%)

Table (2) Cancer screening awareness

	Cancer screening awareness				
	Aware	**Not aware**	**Total**	**X^2**	**P - value**
Educational level (high)	20(69%)	67 (37.2%)	87 (41%)	11.967	0.018
Occupation (working)	18 (62.1 %)	62(34.4%)	80(38.3%)	8.067	0.005
Aware about vaccine	8(27.6 %)	19 (10.5%)	27(12.9%)	6.515	0.017
Positive attitude to screening	27 (93.1 %)	140 (77.8 %)	167(79.9%)	3.653	0.04
Previously screened	12(41.4 %)	33 (18.2 %)	45 (21.4%)	7.954	0.007

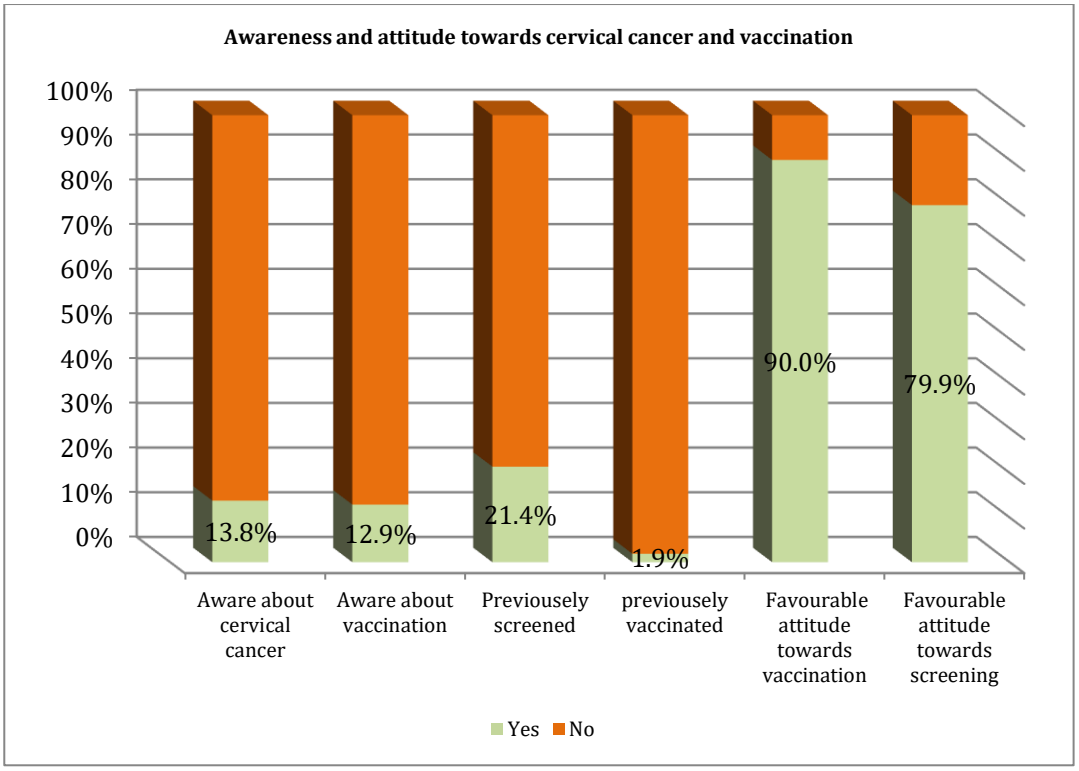

Figure 1 shows Awareness and attitude towards cervical cancer and vaccination

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error				Lower	Upper
(Constant)	37.235	3.146		11.835	.000	31.023	43.446
family history of cervical cancer	3.225	.755	.026	4.269	.000	1.734	4.716
source of knowledge about cervical cancer	.339	.088	.032	3.849	.000	.165	.512
Awareness about vaccinations	-15.140-	.419	-.231-	-36.166-	.000	-15.967-	-14.314-
Previously vaccinated	5.096	.953	.034	5.348	.000	3.215	6.977
Previously screened	1.325	.625	.024	2.120	.035	.091	2.558

Table (3) Linear regression analysis

Dependent Variable: total knowledge score

Predictors of knowledge score: family history of cervical cancer, source of knowledge of bout cervical cancer, Awareness about vaccinations, previously vaccinated and Previously screened. Variables excluded from model: Age, occupation, marital state, smoking, educational level and parity,

Table (3) Linear regression analysis

DISCUSSION:

Cervical cancer is known as preventable cancer. Primary prevention of cervical cancer is through HPV vaccination and secondary prevention through early detection by Pap smear. Unfortunately, our study result showed a poor knowledge about cervical cancer in 87.1 % of our population, and a low level of awareness with only 13.8% of the

population was aware of cervical cancer screening which is very low compared to other studies in the Kingdome. This low level of awareness could be due to small sample size. Only 21.4 % of our population has been screened before. This low level of previous screening is close to most of the studies in Saudi Arabia. **Sait et al.** found a higher level of awareness of pap smear in a study conducted in Jeddah, Saudi Arabia. 67.6% of the population was aware. However, only 16.8% were screened by Pap smear. (20) This is similar to **Al Khudairi et al.** study in Riyadh that reported 53.8% have heard about pap smear and only 24.9% undergone screening. (4) A study of university students in Riyadh, Saudi Arabia by **Al-Shaikh et al.** reported a poor knowledge about cervical cancer in 95.7% and 46.7% have heard about the pap smear. (9)These numbers of screening in the kingdom close to the numbers in other Middle-east countries.(21,22) However, the level of awareness still much lower than in the developed countries. (23)

We found a relationship between the education level and awareness about cervical cancer the same thing reported by **Al Sairafi et al.** (21)

Regarding HPV vaccine, we found only 1.9% were vaccinated and this is mostly due to low awareness about the vaccine. Our study showed only 12.9% were aware of the vaccine. Which is close to a study by **Al-Shaikh et al.** 10.9% (9) and **Sait et al.** 9.8% (20) A slightly higher level was reported in a study conducted by **Gari et al**. in the western region of Saudi Arabia. They reported that 20.8% the population have heard about the vaccine.(24)In regard to other countries, **Durusoy et al.** reported 25.1% of the Western Turkey university students were aware of vaccine. (25) **Tsakiroglou et al.** study in Greece reported that 62% of the population heard about the vaccine.(26) In the United States, **Jain et al.** study in 2007 on HPV awareness and vaccination reported a much higher level of awareness. 78.9% were aware of HPV vaccine. (27)

Despite the poor knowledge and low awareness level in our population, they showed a favorable attitude to screening 79.9% and vaccination 90%. these are higher percentages compared to other studies. (21,24)

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