Public Awareness and Knowledge of Pap smear as a Screening Test for Cervical Cancer among Saudi Population in Aseer Region, Saudi Arabia

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Abstract

Background: Cancer of the cervix is ranked the second most common female cancer worldwide (14). Recently, it was reported to be the fourth most common female cancer. However, the disease burden is now mainly in the less developed regions of the world. The worldwide reported significant decline in the magnitude of cancer of the cervix in the world especially in developed countries is attributed mainly to the wide use of the Papanicolaou (Pap) smear as an effective screening tool for cervical cancer caused by human papilloma virus. If test findings were abnormal, then more sensitive diagnostic procedures are required and if warranted, interventions that aim to prevent progression to cervical cancer.

Aim: To assess the level of public awareness, knowledge, and attitudes towards Pap smear as a screening test for cervical cancer among Saudi women, attending major healthcare facilities in the Aseer region.

Methodology: A descriptive cross-sectional survey was conducted targeting all females in Aseer region, southern Saudi Arabia aged 18 years up to 65 years. A direct interview questionnaire was constructed by the researchers. The questionnaire covered females' sociodemographic data including age, marital status, education, and job title. Female awareness regarding Pap smear and females practice regarding Pap smear was also assessed by four items.

Results: The survey included 956 females whose ages ranged from 18 to 65 years old. About 64% of the females were married and 29.9% were single. As for females' awareness regarding Pap smear test, more than 60% of the females had heard about Pap smear and nearly half knew its importance. Exactly 19.1% of the females reported that Pap smear test should start after marriage and 13.8% said that it should be done every three years. Totally, a very small percentage of the females had good awareness regarding Pap smear test.

Conclusions: In conclusion, the study revealed that there is a great lack of knowledge regarding Pap smear as a screening method of cancer of the cervix among Saudi females in Aseer region. The lack of knowledge was more reported among highly educated working females. The test should be done routinely in obstetrics and gynecology departments of the hospitals for high-risk groups.

Key words: Pap smear, Pap test, cervical cancer, screening, cervix screening, awareness, practice, population

Background

The Papanicolaou test (Pap test, Pap smear) which is also named cervical smear, cervical screening or smear test is a method of cervical screening used to detect potentially precancerous and cancerous changes in the cervix or colon [1, 2]. If test findings are abnormal, then more sensitive diagnostic procedures are required and if warranted, interventions that aim to prevent progression to cervical cancer [3]. The test was independently invented in the 1920s by Dr. Georgios Papanikolaou and Dr. Aurel Babeș and named after Papanikolaou. A simplified version of the test was introduced by Anna Marion Hilliard in 1957 [4]. The Pap smear is performed having cells from the vaginal canal at the outer opening of the cervix at the transformation zone (where the outer squamous cervical cells meet the inner glandular endocervical cells). The collected cells are examined under a microscope to look for abnormalities [5]. The test remains an effective, widely used method for early detection of precancerous cervical changes or even cancer of the cervix. The test may also detect infections and abnormalities in the endocervix and endometrium [6].

In the United States, Pap smear screening is advised at the age of 21 years until the age of 65 (7). Guidelines on frequency vary from every three to five years [7-9]. If abnormal findings are detected, and depending on the nature of the abnormality, the test may need to be repeated in six to twelve months [10]. If the abnormality requires closer scrutiny, the patient may be referred for detailed inspection of the cervix by colposcopy. The person may also be referred for HPV DNA testing, which can serve as an adjunct to Pap testing. Additional biomarkers that may be applied as ancillary tests with the Pap test are evolving [11]

Continuous screening and females' awareness programs in the developed countries were the main factors behind the success of Pap smear testing in these countries. Extensive screening programs and the awareness regarding the test's importance in preventing cervical cancer was the main motive behind these assessments and intervention programs [12, 13]. The current study aimed to assess the females' awareness regarding Pap smear test and its importance in Aseer region, southern Saudi Arabia.

Methodology

A descriptive cross-sectional survey was conducted targeting all females in Aseer region, southern Saudi Arabia aged 18 years up to 65 years. A direct interview questionnaire was constructed by the researchers after intensive literature review. After constructing the questionnaire, five experts in the field of the questionnaire topic reviewed the items independently to assess their content validity and applicability. All modifications were applied till reaching the final form. A pilot study was conducted to assess the tool clarity and reliability including 15 females who were excluded from the final study. The tool was completed within 20 minutes per case and had reliability coefficient (alpha Cronbach's) of 0.76. The questionnaire covered females' sociodemographic data including age, marital status, education and job title. Female awareness regarding Pap smear was assessed using 10 questions covering its importance, proper age to have and to stop having the test, and frequency of doing the test. Females' practice regarding Pap smear was also assessed by four items.

Data analysis

After data were extracted, it was revised, coded and fed into statistical software IBM SPSS version 22 (SPSS, Inc. Chicago, IL). All statistical analysis was done using two tailed tests. P value less than 0.05 was considered to be statistically significant. For awareness items, each correct answer was scored one point and total summation of the discrete scores of the different items was calculated. A female with score less than 60% (5 points) of the maximum score was considered to have poor awareness while good awareness was considered if she had a score of 60% (6 points or more) of the maximum. Descriptive analysis based on frequency and percent distribution was done for all variables including demographic data, awareness items and females' practice. Univariant relations between females demographic and practice data with awareness level were done based on Pearson chi-square test.

Results

The survey included 956 females whose ages ranged from 18 to 65 years old. About 64% of the females were married and 29.9% were single. University education was recorded for 77.7% of the females and 47% were working females while 25.6% were housewives (Table 1).

Considering females' awareness regarding Pap smear test, Table 2 demonstrates that 67.3% of the females had heard about Pap smear and 48.3% know its importance. Exactly 19.1% of the females reported that Pap smear test should start after marriage and 13.8% said that it should be done every three years. Only 10.8% of the females knew that Pap smear is not recommended after the age of 60 years and 15.7% knew the difference between Pap smear test and upper cervical smear. Totally, 13% of the females had good awareness regarding Pap smear test.
With regard to the source of females' awareness (Graph 1), obstetric and gynecology clinic was the most reported source (47.7%) followed by social media (20.4%), friends and family (16.2%) while health care providers was reported by 10% of the females.

As for Pap smear practice (Table 3), 22.8% of the females previously had undergone Pap smear and 23.2% were advised by their doctors to do it. Also 88.7% of the participant females never asked their physician to do a Pap smear test.

On relating female's awareness with their characteristics, Table 4 demonstrates that 25.6% of females with a basic level of education had good awareness level compared to 11.4% of those with university level with recorded statistical significance (P=.010). Also 16.7% of housewives

had good awareness level compared to 10.2% of working females (P=.042).

Good awareness level was recorded among 23.9% of females with previous history of doing Pap smear compared to 9.8% of others who didn't (P=.001). Exactly 21.6% of the females who were advised to undergo Pap smear by their physicians had good awareness level compared to 10.4% of those who didn't (P=.001). Also 14% of the females who think that they need to know more about Pap smear had good awareness compared to none of the others (P=.001).

Table 1. Personal data of Saudi female respondents in Aseer region, Saudi Arabia

Personal data	No	%
Age in years		
< 20 years	49	5.1%
20-29	279	29.2%
30-39	242	25.3%
40-49	331	34.6%
50+	55	5.8%
Marital status		
Single	286	29.9%
Married	613	64.1%
Divorced/ widow	57	6.0%
Educational level		
Illiterate	3	.3%
Basic	54	5.6%
Secondary	156	16.3%
University	743	77.7%
Job		
Housewife	245	25.6%
Student	262	27.4%
Working	449	47.0%

Table 2. Females' awareness regarding Pap smear in Aseer region, Saudi Arabia

Knowledge items		No	%
Know about Pap smear	No	313	32.7%
	Yes	643	67.3%
Know importance of Pap smear.	No	494	51.7%
	Yes	462	48.3%
Know the time for Pap smear.	No	616	64.4%
	Yes	340	35.6%
Proper time for Pap smear	Don't know	375	39.2%
	After marriage	183	19.1%
	After age of 30	148	15.5%
	After age of 40	250	26.2%
Know frequency for Pap smear.	No	731	76.5%
	Yes	225	23.5%
Frequency of doing Pap smear.	Don't know	490	51.3%
	Every 3 years	132	13.8%
	Every year	166	17.4%
	Every 6 months	168	17.6%
Know when to stop Pap smear.	No	520	54.4%
	Yes	436	45.6%
Time to stop Pap smear.	Don't know	520	54.4%
	After age of 60	103	10.8%
	After age of 50	227	23.7%
	After age of 70	106	11.1%
Know the difference between Pap and upper cervical smear.	No	806	84.3%
	Yes	150	15.7%
Interested to know more regarding Pap smear.	No	69	7.2%
	Yes	887	92.8%
Knowledge level	Poor	832	87.0%
	Good	124	13.0%

Figure 1. Source of information regarding Pap smear among respondent females

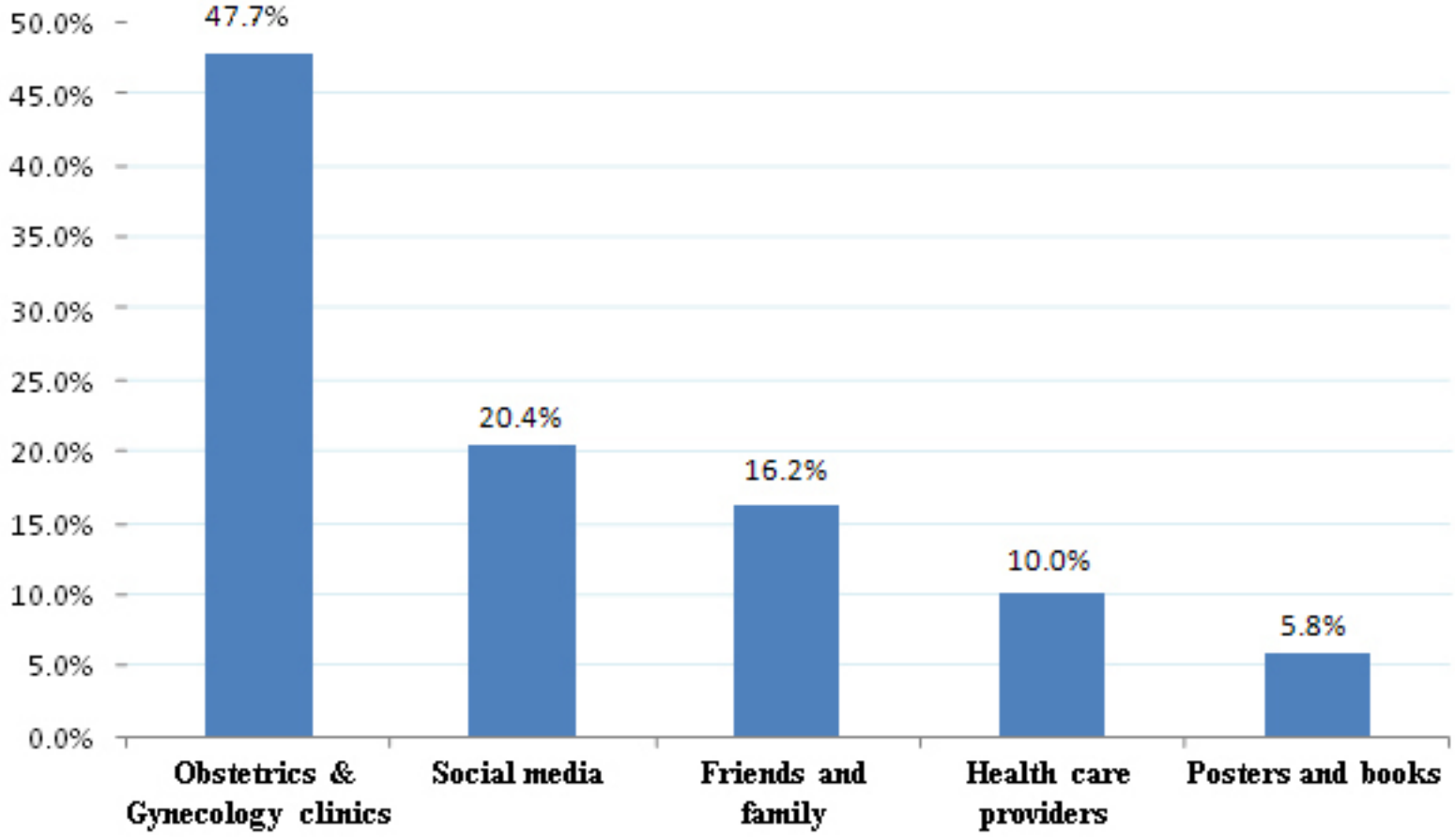

Table 3. Practice regarding Pap smear among females in Aseer region, Saudi Arabia

Practice	No	%
Previously did Pap smear		
No	*738*	*77.2%*
Yes	*218*	*22.8%*
Advised by physician for Pap smear		
No	*734*	*76.8%*
Yes	*222*	*23.2%*
Advised relatives/ friends to do Pap smear		
Never	*766*	*80.1%*
Sometimes	*161*	*16.8%*
Usually	*29*	*3.0%*
Asked your physician for Pap smear		
Never	*848*	*88.7%*
Sometimes	*82*	*8.6%*
Usually	*26*	*2.7%*

Table 4. Distribution of awareness regarding Pap smear according to females' personal data and practice

Factors		Knowledge level				P-value
		Poor		Good		
		No	%	No	%	
Age in years	< 20 years	43	87.8%	6	12.2%	.454
	20-29	242	86.7%	37	13.3%	
	30-39	203	83.9%	39	16.1%	
	40-49	295	89.1%	36	10.9%	
	50+	49	89.1%	6	10.9%	
Marital status	Single	242	84.6%	44	15.4%	.232
	Married	542	88.4%	71	11.6%	
	Divorced/widow	48	84.2%	9	15.8%	
Educational level	Illiterate	3	100.0%	0	0.0%	.010*
	Basic	40	74.1%	14	25.9%	
	Secondary	131	84.0%	25	16.0%	
	University	658	88.6%	85	11.4%	
Job	Housewife	204	83.3%	41	16.7%	.042*
	Student	225	85.9%	37	14.1%	
	Working	403	89.8%	46	10.2%	
Previously did Pap smear	No	666	90.2%	72	9.8%	.001*
	Yes	166	76.1%	52	23.9%	
Advised by physician for Pap smear	No	658	89.6%	76	10.4%	.001*
	Yes	174	78.4%	48	21.6%	
Interested to know more regarding Pap smear	No	69	100.0%	0	0.0%	.001*
	Yes	763	86.0%	124	14.0%	

P: Pearson X2 test * P < 0.05 (significant)

Discussion

Cancer of the cervix was ranked the second most common female cancer worldwide [14]. Recently, it is reported to be the fourth most common female cancer [15]. However, the disease burden is now mainly in the less developed regions of the world [16]. The worldwide reported significant decline in the magnitude of cancer cervix in the world, especially in developed countries is attributed mainly to the wide use of the Papanicolaou (Pap) smear as an effective screening tool for cervical cancer caused by human papilloma virus (HPV) [17].

Cervical cancer is reported as a main cause of mortality especially in case of late presentation [18]. Improving the population awareness regarding cervical cancer and its risk factors in the general population is a vital action, and the practice of getting a Pap smear done regularly is even a significant predictor, particularly in the population with low socio-economic level with limited formal education [19]. There is a defect of knowledge regarding Pap smear testing amongst females who are in the at-risk group.
In Saudi Arabia, cervical cancer is ranked the ninth most common cancer in Saudi females. Moreover, it comprises approximately 2.6% of all newly diagnosed cancers in Saudi females. Human papilloma virus (HPV) [20]. Despite the well-acknowledged benefits of Pap smear and its availability in various healthcare facilities in Saudi Arabia, an intensive screening program for cervical cancer is not well established. Moreover, no formal nationwide campaigns to vaccinate females have been commenced. As a result, it has been observed that the

number of cases of cervical cancer has been increasing over the past two decades [21]. In Saudi Arabia, there are limited studies that have endeavored to explore the awareness, knowledge, and attitudes of women towards Pap smear.

The current study aimed to assess the females' awareness regarding Pap smear in Aseer region, southern Saudi Arabia and to identify their practice for Pap smear. The study revealed that the general female population in Aseer region had very poor knowledge regarding Pap smear as nearly 1 out of each 13 females were knowledgeable regarding all aspects of Pap smear. The knowledge defect was more recorded for frequency of undergoing Pap smear followed with proper time to have Pap smear and when to stop having it. The most interesting finding that needs more assessment for explanation was that the awareness level was significantly higher among females with lower level of education and not working. But females who previously had Pap smear and those who even were asked to do it by their physicians recorded higher awareness level.
Regarding females' practice, only one fifth of the survey females had undergone Pap smear and nearly all were advised to do it by their physicians. Also, the survey revealed that the majority of the survey respondents never asked their physicians to do Pap smear which may be contributed to the lack of their awareness level regarding the test and its importance.

A cross sectional study was conducted to determine the knowledge and practices regarding Papanicolaou (Pap) smear test among female university students of Karachi, 2018 [22]. The study revealed that out of 491 participants, three-quarters of the participants knew about the Pap smear test. However, only 1.6% had undergone the procedure. About 30% of the females in the study attributed the lack of knowledge as the major reason for not getting a Pap smear while another third blamed the lack of recommendation by health care professionals.

Locally, public Awareness and Knowledge of Pap Smear as a Screening Test for Cervical Cancer among the Saudi Population in Riyadh City was assessed by a descriptive cross-sectional study, 2017 [23]. The researchers reported that exactly 46.2% did not hear about Pap smear previously. Only 53.9% had heard about it, mostly during their hospital visits for obstetric/gynecologic purposes (57.1%). Also 75.2% had not had a single Pap smear previously. About 75% of the females reported that their physicians never advised them to do Pap smear.

The survey covered the defect of Saudi females regarding Pap smear awareness and practice as a screening method for more serious health problems, but participants showed their desire to learn more about the test. Improving the awareness regarding cancer of the cervix and all its screening methods is beneficial in early detection and lowering the disease burden.

Conclusion and Recommendations

In conclusion, the study revealed that there is a great lack of knowledge regarding Pap smear as a screening method of cancer of the cervix among Saudi females in Aseer region. The lack of knowledge was more reported among highly educated working females which is surprising. Most females' information was from their visits to obstetrics and gynecology departments not from primary health care center staff which is another defect that should be repaired. More effort should be paid to improve general population awareness regarding Pap smear test and its importance as a screening method for this disorder with a high burden. Also, the test should be done routinely in obstetrics and gynecology departments of the hospitals for high-risk groups.

Ethical approval
The study was approved from The Ethical Committee of the Scientific Research, King Khalid University by date. 26/02/2020 with approval number of (ECM#2020-161)—(HAPO-06-B-001)

References

1. Koss LG. Cervical (Pap) smear: new directions. Cancer. 1993 Feb 15; 71(S4):1406- 12.
2. Sirovich BE, Welch HG. The frequency of Pap smear screening in the United States. Journal of general internal medicine. 2004 Mar 1; 19(3):243-50.
3. Maraqa B, Lataifeh I, Otay L, Badran O, Nouri YQ, Issam I, Al Hussaini M. Prevalence of abnormal pap smears: a descriptive study from a cancer center in a low-prevalence community. Asian Pacific journal of cancer prevention: APJCP. 2017; 18(11):3117.
4. Georgios Papanikolaou: inventor of the Pap smear cervical cancer test. https://www.newscientist.com/article/2202635-georgios-papanikolaou-inventor-of-the-pap-smear-cervical-cancer-test/#ixzz6HmrcpRAd. Achieved at 26/03/2020.
5. Ashtarian H, Mirzabeigi E, Mahmoodi E, Khezeli M. Knowledge about cervical cancer and pap smear and the factors influencing the pap test screening among women. International journal of community-based nursing and midwifery. 2017 Apr; 5(2):188.
6. Rivers SE, Salovey P, Pizarro DA, Pizarro J, Schneider TR. Message framing and pap test utilization among women attending a community health clinic. Journal of Health Psychology. 2005 Jan; 10(1):65-77.
7. Curry SJ, Krist AH, Owens DK, Barry MJ, Caughey AB, Davidson KW, Doubeni CA, Epling JW, Kemper AR, Kubik M, Landefeld CS. Screening for cervical cancer: US Preventive Services Task Force recommendation statement. Jama. 2018 Aug 21; 320(7):674-86.
8. Saslow D, Solomon D, Lawson HW, Killackey M, Kulasingam SL, Cain J, Garcia FA, Moriarty AT, Waxman AG, Wilbur DC, Wentzensen N. American Cancer Society, American Society for Colposcopy and Cervical Pathology, and American Society for Clinical Pathology screening guidelines for the prevention and early detection of cervical cancer. CA: a cancer journal for clinicians. 2012 May; 62(3):147-72.
9. World Health Organization. Reproductive Health, World Health Organization, World Health Organization. Chronic Diseases, Health Promotion. Comprehensive cervical cancer control: a guide to essential practice. World Health Organization; 2006.
10. Breitkopf CR, Dawson L, Grady JJ, Breitkopf DM, Nelson-Becker C, Snyder RR. Intervention to improve follow-up for abnormal Papanicolaou tests: A randomized clinical trial. Health Psychology. 2014 Apr; 33(4):307.
11. Shidham VB, Mehrotra R, Varsegi G, D'Amore KL, Hunt B, Narayan R. p16INK4a immunocytochemistry on cell blocks as an adjunct to cervical cytology: Potential reflex testing on specially prepared cell blocks from residual liquid-based cytology specimens. Cytojournal. 2011; 8.
12. Sachan PL, Singh M, Patel ML, Sachan R. A study on cervical cancer screening using pap smear test and clinical correlation. Asia-Pacific journal of oncology nursing. 2018 Jul; 5(3):337.
13. Syed S. A Survey of Cervical Cancer and Pap Smear Awareness and Utilization of Pap smear test among female health care providers in a Secondary Care Hospital, Pakistan. Journal of the Society of Obstetrics and Gynaecologists of Pakistan. 2018 Dec 11; 8(3):143-7.
14. Lin C, Franceschi S, Clifford GM. Human papillomavirus types from infection to cancer in the anus, according to sex and HIV status: a systematic review and meta- analysis. The Lancet Infectious Diseases. 2018 Feb 1; 18(2):198-206.
15. Ferlay J, Soerjomataram I, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray F. Cancer incidence and mortality worldwide: sources, methods, and major patterns in GLOBOCAN 2012. International journal of cancer. 2015 Mar 1;136(5):E359-86.
16. Sankaranarayanan R. Overview of cervical cancer in the developing world. International Journal of Gynecology & Obstetrics. 2006 Nov; 95: S205-10.
17. Canfell K, Sitas F, Beral V. Cervical cancer in Australia and the United Kingdom: comparison of screening policy and uptake, and cancer incidence and mortality. Medical Journal of Australia. 2006 Nov; 185(9):482-6.
18. Badar F, Anwar N, Meerza F, Sultan F. Cervical carcinoma in a Muslim community. Asian Pacific Journal of Cancer Prevention. 2007 Jan 1; 8(1):24.
19. Imam SZ, Rehman F, Zeeshan MM, Maqsood B, Asrar S, Fatima N, Aslam F, Khawaja MR. Perceptions and practices of a Pakistani population regarding cervical cancer screening. Asian Pac J Cancer Prev. 2008 Jan 1; 9(1):42-4.
20. Bazarbashi S, Al Eid H, Minguet J. Cancer incidence in Saudi Arabia: 2012 data from the Saudi cancer registry. Asian Pacific journal of cancer prevention: APJCP. 2017; 18(9):2437.
21. Yousif HM, Albasri AM, Alshanqite MM, Missawi HM. Histopathological Patterns and Characteristics of Abnormal Cervical Smear in Madinah Region of Saudi Arabia. Asian Pacific journal of cancer prevention: APJCP. 2019; 20(5):1303.
22. Al Khudairi H, Abu-Zaid A, Alomar O, Salem H. Public awareness and knowledge of pap smear as a screening test for cervical cancer among Saudi population in Riyadh City. Cureus. 2017 Jan; 9(1).